AKENTEN APPIAH MENKA UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT

THE INFLUENCE OF TEACHING AND LEARNING RESOURCES ON TEACHER'S DELIVERY OF SYLLABUS IN GOVERNMENT FUNDED BASIC SCHOOLS IN THE ASOKWA MUNICIPALITY OF THE ASHANTI REGION

VERONICA OBEMAH

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AUGUST, 2022

DECLARATION

STUDENT'S DECLARATION

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

SIGNATURE…… DATE…….

NAME OF STUDENT: VERONICA OBEMAH

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/dissertation/project as laid down by the Akenten Appiah Menka University of Skills Training and Entrepreneurial Development.

SIGNATURE: …… DATE: ……

NAME: PROF. YARHANDS DISSOU ARTHUR

DEDICATION

To my beloved Husband and Children.

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LIST OF ACRONYMS

AVM	Audio and other visual materials
CDS	Content Delivery of Subjects
COB	Classrooms and office buildings
CRM	Classroom Management
DIM	Display materials
GRM	Graphic materials
HEF	Health facilities
HRS	Human Resources
ITN	Induction training
LLF	Laboratory and Library facilities
PHF	Physical Facilities
PJM	Projected materials
PRM	Printed and reference materials
RCF	Recreational facilities
REF	Residential facilities
LCT	Learner-Centred Teaching
QNS	Qualified non-teaching staff
QTS	Qualified Teaching staff
SCA	Students Cognitive Activation
TAD	Professional Training and Development programme for teachers
TDS	Teachers Delivery of Syllabus
TLRs	Teaching and Learning Resources
TLMs	Teaching and Learning Materials

ABSTRACT

The purpose of the study was to determine the influence of teaching learning resources on teachers' delivery of syllabus in the Asokwa Municipality. The objectives were to examine the relationship between Teaching Learning Materials and teachers' delivery of syllabus; examine the impact of physical facilities on teacher's delivery of syllabus; and investigate the correlation between human resource and teachers' delivery of syllabus. The study employed a correlational research design, utilizing a deductive research approach and survey strategy. A convenience sampling technique was used to select 384 teachers from thirty-six government-funded basic schools across three circuits of Asokwa Municipality. Data were gathered through questionnaire administration. The responses were then analyzed using Structural Equation Modeling through the application of AMOS 23. The factor analysis revealed that teaching learning materials, physical facilities, and human resources are three distinct but interrelated factors that significantly influence teachers' delivery of the syllabus. Each factor demonstrated strong loadings (>0.5) on their respective indicators, confirming the validity of the constructs. The study discovered a positive and significant relationship between teaching learning materials and teachers' delivery of syllabus. It also revealed that overall, there is a positive and significant relationship between physical facilities and teachers' delivery of syllabus. Furthermore, the study established a positive and significant effect of human resources on teachers' delivery of syllabus. Based on these findings, the study recommends: The adequate provision of teaching learning materials to enhance the effectiveness of syllabus delivery. Improvement in the quality and accessibility of physical facilities to support teaching activities. Strengthening of human resource capacities through continuous professional development and training. Additionally, teachers should adopt cognitive activation strategies in their teaching to foster a more engaging and effective learning environment.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Musingafi, Mhute, Zebron, and Kaseke (2015) have indicated that the art of teaching and learning is a multifaceted and ubiquitous phenomena and thus within the context of the formal educational system, teaching and learning have to be properly structured to ensure effective and efficient outcomes. Hlebowitsh (2004) in agreeing to the complexity of teaching and learning asserted that teaching is an art which comprises of knowledge, presentation, dissemination, and every communication element. Teaching requires comprehensive knowledge and understanding of the +topic under consideration, standardized curriculum or syllabus, and enthusiasm. It also requires the quest and positive attitude to learning by both students and teachers, effective classroom management, and the longing to make a positive change in the lives of students (Hlebowitsh, 2004). Tamakloe et al (2005) indicated that teaching and learning are complementary. In other words, when a teacher is teaching, it connotes that a student or learner is learning. Simply put, there cannot be teaching without learning.

According to Darkwa (2014), learning is the process of knowledge acquisition through our senses (that is sight, sound, smell, taste, and touch). Learning is a life-long and continuous process that never ends as long as one is living (Darkwa, 2014). This assertion by Darkwa (2014) means that human beings are learning all the time irrespective of the age. Darkwa (2014) further indicated that, it is through learning that we are able to acquire the skills needed to handle the challenges of life. Simply put, without learning one may not be able to handle life challenges. Musingafi et al argues that, in the school system, teaching and learning is highly regulated. In other words, the

teaching and learning in the school system follows a curriculum or syllabus. Musingafi et al (2015) further stated that curriculum and syllabus have different meanings. Per Khwaja et al (2014), curriculum generally lists all subjects or courses offered at a particular school, programme, or in a particular country. Khwaja et al (2014) alludes that curriculum denotes all subjects that a student must complete in order to achieve a particular expertise or qualification.

On the other hand, Okai (2010) defines syllabus as the list of topics to be taught or learnt in a given subject or course. Thus, syllabus deals with the topics to be taught under each subjects that constitute a curriculum. Teachers deliver a syllabus through the achievement of certain targets or objectives (Okai, 2010). Musingafi et al (2015) asserts that teachers are expected to deliver on their syllabus. A Teacher's delivery on a syllabus includes the ability to complete (teach) all the topics, improvement in the academic performance of the students, students' active participation and understanding during lessons, grading students according to the syllabus's grading policy, and teaching students how to master the course content. However, Okongo et al (2015) states that the effective delivery of syllabus deliverables requires strong teaching and learning resources (TLR). Owoko (2009) indicated that teaching and learning resources refers to the teaching methods and materials, instruction period (time available for instruction), and the knowledge and skills of teachers acquired through training and experience.

Atieno (2014) agreeing with Owoko (2009) stated that TLR promotes the effectiveness of the educational system since the TLRs are the basic items that could promote good academic performance of students and enhances effective delivery of syllabus by teachers. Maicibi (2003) has argued that the TLRs denote both human beings (workers) and other non-human resources. Maicibi (2003) further stated that having the right quality and quantity of human resources could lead to the manipulation of the other non-human resources to achieve the institutional stated

objectives. The Department for International Development (DFID, 2007) indicated that TLR is the most constant feature in the quest to improve students' academic performance and to enable the achievement of teaching deliverables by teachers. DFID (2007) further stated that TLRs needed to enhance educational efficiency and effectiveness are: textbooks and supplementary teaching and learning materials (TLM); well trained, prepared, supervised and motivated teachers (human resources); and adequate physical facilities. It is thus evidenced that it is the availability or adequacy of TLRs that determine the efficiency and effectiveness of the educational system. In other words, whether a teacher will be able to achieve a syllabus targets or not depends to a large extent on the availability and adequacy of TLRs. Simply put, TLRs availability and adequacy at schools have an impact on teachers' delivery of syllabus. However, as indicated by Johan (2014), the educational deliverables in schools are interconnected with the adequacy and utilization of TLRs. Therefore, this study seeks to find out whether the Asokwa Municipality has adequate TLRs and whether the availability of the TLRs is associated with the teachers' delivery of syllabus.

1.2 Statement of the Problem

The Ghanaian government has made significant strides in expanding access to basic education, aligning with the Sustainable Development Goal 4 (SDG 4) of ensuring inclusive and equitable quality education for all. However, despite these efforts, concerns persist regarding the quality of education delivery in some schools. Limited resources, including teaching and learning materials, inadequate physical facilities, and insufficient human resources, are often cited as challenges faced by teachers in effectively delivering the curriculum (Asiedu-Akrofi, 2017; Yidana & Sulemana, 2019). These challenges are particularly acute in Municipals and districts such as the Asokwa Municipality, where disparities in resource allocation and infrastructure development may

exacerbate educational inequalities. Teachers in such contexts grapple with the dual challenge of meeting curriculum objectives while navigating resource constraints that hinder their instructional practices and student engagement. This study seeks to investigate the influence of teaching and learning resources on teachers' delivery of the syllabus in the Asokwa Municipality. Teaching and learning resources encompass a wide range of materials, including textbooks, instructional aids, technology tools, and learning environments, that support effective teaching and learning (Mensah & Awuni, 2016). Understanding the relationship between teaching and learning resources and syllabus delivery is crucial for identifying areas where improvements can be made to enhance the quality of education in basic schools. By examining the extent to which teachers have access to and utilize teaching and learning resources in their instructional practices, this study aims to shed light on the challenges and opportunities inherent in the educational landscape of the Asokwa Municipality. Furthermore, it seeks to provide actionable insights for educational policymakers, school administrators, and teachers to address the identified gaps and promote effective teaching and learning experiences for all students.

1.3 Purpose of the Study

The purpose of this study was to investigate the influence of teaching and learning resources on teachers’ delivery of syllabus in the Asokwa Municipality.

1.4 Objectives of the Study

The following objectives of the study as derived from the literature of the study are;

1. to examine the relationship between teaching and learning resources and Teachers delivery of Syllabus in the Asokwa Municipality,

2. To examine the impact of physical facilities on Teachers delivery of Syllabus in the Asokwa Municipality, and
3. To assess the relationship between the adequacy of Human Resource and the delivery of the Syllabus by Teachers in the Asokwa Municipality.

1.5 Research Questions

In order to achieve the objectives of the study, the following specific issues were raised;

1. What is the relationship between teaching and learning resources and Teachers delivery of Syllabus in the Asokwa Municipality?
2. What is the impact of physical facilities on Teacher's delivery of Syllabus in the Asokwa Municipality? and
3. What is the correlation between Human Resource and Teachers delivery of Syllabus in the Asokwa Municipality?

1.6 Significance of the Study

The discovery of the availability and adequacy of TLRs will inform the education authorities namely the Asokwa Municipal Assembly, Ghana Education Service and the Ministry of Education on what to do in terms of the supply or otherwise of TLMs, physical facilities, and human resources to Basic Schools in the Asokwa Municipality. Secondly, the establishment of the relationships between TLRs (measured by TLM, Physical Facilities, and Human Resources) and Teachers' delivery of Syllabus (anchored by classroom management, student orientation, and students' cognitive activation) will help teachers, head teachers, and other relevant bodies under the Ministry of Education to place premium on teaching learning resources in the quest to educate students. Particularly, positive relationships will then mean that teachers will have to make effective and

efficient use of TLRs in their teachings and even in situations where the TLRs are not available or inadequate, improvisation should be applied.

Thirdly, the recommendations that will be made by this study could also be adopted by the GES, Asokwa Municipal Assembly, the Ministry of Education, the Head teachers and Teachers of Basic Schools in Asokwa Municipality for teaching and learning purposes. Moreover, since the current study is a basic research, the findings could spur on the Ghana Education Service and players in the education sector to conduct a further in-depth applied research to solve the challenges of teaching learning resources and education in general in Ghana.

Lastly, the conduct of this study will also be beneficial to the academia. For instance, students studying courses related to education could use the study's report as a reference material for topics related to TLR, classroom management, student orientation, and students' cognitive activation. Also, researchers could use the study's report as a source of either primary literature or research gap for their own studies.

1.7 The Scope of the Study

According to Discover PhDs (2022), the scope of the study connotes how thorough the study's research questions were studied and considerations taken into accounts. The Discover PhDs (2022) website further highlighted that the scope of the study denotes issues such as the study's theme(s) or purpose, the study's geographical location, time horizon, population and sampling issues (for example, population size, sample size, and types of participants), and the research design. In line with the denotations of the scope of the study, the current study's scope is as follows. Firstly, the thematic or the study's objectives are delimited to three main issues. These are whether there is a relationship between the availability and adequacy of TLM and Teachers delivery of Syllabus;

there is an impact of the availability and adequacy of physical facilities on Teachers delivery of Syllabus; and there is correlation between the adequacy of Human Resource and Teachers delivery of Syllabus in the Asokwa Municipality Basic Schools. The implication is that the study's results can only be assessed or interpreted relative to the above research objectives. This shows that no other thematic areas apart from the aforementioned can be concluded from the study.

The scope of the study is also constraint by the study's location. The current study is only about the Asokwa Municipality. Other adjourning Municipalities such as Oforikrom Municipality, Kumasi Metropolitan Assembly, Bosomtwe District, and Suame Municipal Assembly are excluded. Even though Asokwa is part of the Greater Kumasi Metropolitan Area, the study did not cover the entire Kumasi. Therefore, generalising the study's findings to these adjourning. Additionally, the study's population is limited to only teachers. In terms of the time period and research design, the study adopted the cross-sectional time period and a hybrid of descriptive and explanatory research design respectively. The net effect of the scope of the study is that the study's results cannot be extended to themes, geographical area, and population outside the study's scope.

1.8 Limitations of the Study

Per Discover PhDs (2022) the limitations of the study are the characteristics of the study's methodology that are outside the control of the researcher. This simply means that there is little that the researcher can do about the limitations of the study. In other words, the limitations of the study may reflect the possible weaknesses in the study. The first limitation of the study relates to the population and the sample size of the study. Even though other populations such as students and head teachers could have been included since they are also affected by the usage of TLRs, the study prime concern is to assess the impact of TLRs on teachers' delivery of syllabus from the

teachers' perspective. Therefore, once the study's prime concern is about teachers, involving other populations can lead to results that do not reflect the perspective of teachers. Secondly, the use of sampling other than census will mean that the study's findings could only be used to predict the viewpoints of the sample rather than the actual perspective of the population.

Another limitation of the study is born out of the application of the cross-sectional time horizon instead of the longitudinal time horizon. The adoption of the cross-sectional time frame means that data will be collected at a point in time in 2022. Thus, tracking the changes in TLRs availability and adequacy will be problematic.

1.9 Definition of Terms

Adequacy refers to sufficiency of TLR for teaching and learning process.

Availability refers to the quality of being available or at one's disposal; ability to be used or obtained; suitability for a purpose or undertaking

Classroom management refers to all of the things that a teacher does to organize students, space, time and materials so that instruction in content and student learning can take place.

Cognitive activation is the setting of challenging tasks, practicing content-related discourse, and activating prior knowledge

Delivery of Syllabus refers to the method and process by which teachers convey the content outlined in the syllabus to students.

Human resources refers to personnel or a workforce of an institution that implements a school program so as to meet set goals

Physical facilities refer to plants and equipment that schools use to meet goals

Teaching and learning materials are learning devices and aids via which learning and teaching are carried out in school

Teaching and learning resources (TLR) refers to all human and non-human resources that aid the teaching and learning process and include TLM (material resources) physical facilities and human resources (teachers)

Syllabus refers to an outline or list of topics students are supposed to study in a given year or specified period of learning

1.10 Organisation of the Study

The report of this study has six chapters. The first chapter is titled introduction. The chapter has ten sub-titles namely introduction, background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, scope and limitations of the study, definition of terms, and organisation of the study. The second chapter is the literature review. The literature review section has six sub-headings. These are introduction, conceptual literature review, theoretical literature review, empirical literature review, conceptual framework of the study, and conclusion. The next chapter is the methodology of the study. The chapter contains sub-sections such as introduction, Research design, research approach, population, sample and sampling technique, data collection, and method of data analysis. The chapter four deals with the presentation and analysis of data gathered. The chapter is presented in line with the research objectives.

Chapter five relates to the discussion of the findings of the study. The two main activities that the section deals with are the discussion of significant and novel findings and the major findings and inferences made from them in view of the previous studies. The last chapter which is the chapter

six is about the summary, conclusion and recommendations. This chapter has four headings. The first section is the introduction. This is followed by summary of key findings of the study. The conclusion of the study then follows the summary. The last sub-section of the chapter is recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter delves into the existing literature on the influence of teaching and learning resources on teachers' delivery of the syllabus in basic education settings. Drawing from both theoretical frameworks and empirical studies, the review aims to provide a comprehensive understanding of how these factors interplay and impact the quality of education delivery.

2.1.1 Theoretical Framework

Theoretical perspectives offer valuable insights into the mechanisms through which teaching learning resources influence teachers' delivery of syllabus content. Key theories pertinent to this study include:

1. Constructivism: According to constructivism, learning is an active process where learners construct knowledge by building upon their prior experiences and interactions with the environment (Vygotsky, 1978). TLRs play a crucial role in facilitating this process by providing students with opportunities for hands-on exploration and discovery (Jonassen, 1999).
2. Social Learning Theory: Social learning theory posits that individuals learn through observation, imitation, and social interaction (Bandura, 1977). teaching learning resources, such as collaborative learning activities and multimedia resources, create environments conducive to social interaction, enabling students to learn from both their peers and teachers.

2.1.2 Empirical Studies

This section reviews empirical research that explores the relationship between teaching learning resources and syllabus delivery effectiveness in basic education settings. Key areas of investigation include: Impact of Teaching and Learning Materials, this studies have consistently shown that the availability and quality of teaching materials significantly influence teachers' ability to effectively cover syllabus content (UNESCO, 2014). For example, a study by Mensah and Awuni (2016) found that teachers' access to textbooks and instructional aids positively correlated with their effectiveness in delivering syllabus content. Role of physical facilities in research indicates that physical facilities, such as classroom size, seating arrangements, and access to technology, can impact teachers' delivery of syllabus activities (Asare & Adu-Gyamfi, 2019). Schools with adequate facilities tend to provide better learning environments, enabling teachers to engage students more effectively. Finally, Influence of Human Resources: Teacher qualifications, training, and workload also play a crucial role in determining their capacity to utilize TLRs and deliver syllabus content (Asiedu-Akrofi, 2017). Studies have shown that well-trained and supported teachers are more likely to integrate TLRs into their teaching practices and adapt their instruction to meet students' diverse needs.

The literature review has provided valuable insights into the influence of teaching learning resources on teachers' delivery of the syllabus in basic education settings. By synthesizing theoretical perspectives and empirical findings, this chapter has identified critical factors that contribute to effective syllabus delivery, including the availability of teaching materials, quality of physical facilities, and support for human resources. The ensuing chapters will build upon this foundation by examining the specific context of the Asokwa Municipality and investigating how these factors manifest in Ghanaian basic schools.

2.2 Teaching

Rajagopalan (2019) has indicated that it is generally accepted that any action or situation where a person imparts knowledge, share experience, skills or communicate information to another person is commonly seen as teaching. A deeper analysis of Rajagopalan (2019) assertion of teaching clearly demonstrates that whiles teaching involves imparting of knowledge, sharing of experiences, communication of information, and others, accepting Rajagopalan (2019) holistically is problematic. This is because there are various situations where a person communicates information or share experience with another but may never be classified as teaching. In other words, Rajagopalan (2019) definition makes any form of communication between two people as teaching. For instance, no person will consider a young son giving feedback to a father after being sent by the father as teaching. Simply put, accepting Rajagopalan (2019) definition means that every conversation involving two or more people is teaching.

Asokhia (2009) sees teaching as communication. Asokhia (2009) definition suggests that teaching as communication is a two-way process. As a two-way process, teaching as communication involves the elements of a sender (teacher), a message (which could be a course, subject, syllabus, or curriculum), a medium (for example, face-to-face, online, or the usage of other teaching medium), the receiver (student or learner), and response or feedback (which could be achieved through assignments, examinations, or other forms of test). For communication to be effective, the encoded message must be decoded rightly, else the message becomes distorted. This means that there must be an understanding and cooperation between the teacher and the learning. Asokhia (2009) argued that effective teaching communication can be achieved through the use of graphics, that is, pictures, symbols, regalia, illustration and drawings. Rajagopalan (2019) suggested that teaching and learning materials can provide the needed graphics that will enhance the quality of

teaching and understanding and make learning interesting. An analysis of both Asokhia (2009) and Rajagopalan (2019) definition show that their assertion of teaching takes out the formal classroom talk as essential component of teaching within the formal educational ecosystem.

The ills of Asokhia (2009) and Rajagopalan (2019) definition of teaching seem to have been solved by Edmund Amidon in 1967. According to recent research by Hattie and Yates (2014), teaching is defined as "an interactive process primarily involving classroom discourse between educators and students, occurring within structured learning activities." This definition highlights key aspects of teaching within the classroom environment, distinguishing it from other forms of educational interactions in various contexts. These features are: interactive process – teaching is a two-ways affair which involves communication, collaboration, and cooperation; classroom talk – teaching takes place within a school context where students are grouped under various classes; teachers and pupil – teachers deliver instructions and students or pupils learn those instructions; and certain definable activities – teaching involves certain prescribed activities which could be a subject, syllabus, curriculum, lesson plan, and others.

Prozesky (2000) indicated that teaching is a generic concept. This position is supported by Abbatt and McMahon (1993) who indicated that teaching is basically about helping others to learn. According to Prozesky (2000), Abbatt and McMahon (1993) in their study stated that there are four basic elements of teaching. Firstly, the teacher has to decide what students should learn. The students may take part in this decision, but all are guided by the same principle: it is the job that people have to do, that determines what they should learn. They have to learn all the knowledge, skills and attitudes that they need to perform a specific job. They learn what they ‘must know’ and ‘should know’, not what is ‘nice to know’. Secondly, the teacher has to help the learners to learn. This does not mean that the teacher ‘spoon-feeds’ the students, as if they were babies. It does mean

that the teacher's first concern should be that the students should learn as well as possible. Teaching sessions or classes have to be planned carefully, taking into account the learning styles, the language, the background of the students. In short, the teachers must be student centered, not teacher centered. Thirdly, the teacher has to make sure that the students have learnt - s/he has to assess them. Assessment helps teachers and students to see how well the students are progressing, so that they can attend to any weaknesses. It sets a standard, so that society is given people who are competent to practice. Assessment must be carefully planned so that it supports the learning we want to see- we know that students learn what they believe they need to pass the exams, and leave out the rest.

Lastly, the teacher has to look after the welfare of her/ his students. Students who are stressed and unhappy do not learn well. Good teachers try to ensure that the general living conditions and environment of their students are adequate. They also provide opportunities for personal counselling for them. Teachers need to cultivate an open and trusting relationship with their students. An assessment of the objectives and the conceptual framework of this study show that the four elements of teaching as enunciated by Abbatt and McMahon (1993) is grounded in the thematic areas of the study. Firstly, the teacher has to decide what students should learn. According to the proposition of this study, this is achieved through the content of the syllabus. Secondly, the teacher has to help the learners to learn. This may be achieved through classroom management, student-centered teaching orientation, and teaching and learning materials, and physical environment. Thirdly, the teacher has to make sure that the students have learnt. This could also be achieved through the application of cognitive activation and other assessment techniques. Lastly, teacher has to look after the welfare of her/ his students. This could be achieved through the availability and adequacy of human resources.

2.2.1 Learning

Sequeira (2018) stated that "learning is about a change: the change brought about by developing a new skill, understanding a scientific law, changing an attitude. The change is not merely incidental or natural in the way that our appearance changes as we get older. Learning is a relatively permanent change, usually brought about intentionally. When we attend a course, search through a book, or read a discussion paper, we set out to learn! Other learning can take place without planning, for example by experience. Generally, with all learning there is an element within us of wishing to remember and understand why something happens and to do it better next time". The definition as stated by Sequeira (2018) sees learning as a deliberate acquisition of relatively permanent knowledge whether planned or unplanned which is expected to cause changes in the learner. That is, a person may be said to have learnt if she moves from the state of being unable to a state of being able, or to be able to behave in a particular way. Tamakloe, et al (2005) believe that learning is the route through which people receive knowledge of their surroundings through the human senses. The authors further alluded that learning is a continuous and life-long process. This means that people never stop learning whiles living.

According to Santrock (2004) highlighted the importance of experience in learning. The author believes that learning is relatively permanent influence on behaviour, knowledge and thinking skills which comes by experience. Santrock (2004) position seems to be in direct agreement with Sequeira (2018) even though Sequeira (2018) thinks a person can learn through planning and experience. However, Santrock (2004) agrees that it is not every human capability that is learnt. The author indicated for instance that people generally do not learn to cry or eat. The author argued that actions like these are innate to the human capability and that they are intuitive. Santrock (2004) stated we learn in order to increase our capabilities for effectual action. Kundo and Tutoo (2004)

however asserted that learning is an active activity but not passive observation. In other words, learning must involve learners having the opportunity to gain knowledge through objects manipulations.

Watkin (2012) however asserted that even though many different learning approaches are evident in literature, there is no one universally accepted mode of learning. In view of the author, learning is a reflective activity where a learner is able to use past experience to understand the present in order to shape the future action and knowledge. Watkin (2012) assertion does not seek to see learning as only a linear activity but it may also assume both un-learning and re-learning. Prozesky (2000: 1) however asserted that even though learning is a broad concept, what comes to most people mind when learning is mentioned is "something which takes place in a school or college, in a classroom". We may think of it as a person sitting alone at night, trying to memorise a lot of facts so that s/he can pass an examination". Prozesky (2000) therefore stated that learning has the following salient points: 1) learning can be formal or informal; 2) we don't just learn knowledge and facts - we also learn skills and attitudes; 3) people learn in different ways; 4) learning can be superficial (memorized) or deep (using new knowledge actively); 5) motivation is important for learning; and 6) learning continues throughout a person's lifetime.

An evaluation of the above definitions of learning clearly reveals that the objectives of the study is situated in defining learning in terms of school or classroom context, since the cases been studied are schools.

2.2.2 Concept of Teaching and Learning Resources

Adjei, Sarkodie, Ansah, & Baffoe (2015) argued that teaching learning resource is a broad concept used to define the resources that aid teachers to guide teachings. Adjei et al (2015) further

indicated that teaching learning resource is a continuum of educational materials used by teachers in classroom to achieve learning objectives as outline in the syllabus or lesson plan. Klans (2010) assertion of teaching learning resource is in line with Adjei et al (2015). Klaus (2010) stated that teaching learning resource are tools used by teachers in their classroom to facilitate quick and thorough learning by their students. Klaus (2010) highlighted that teaching learning resource or teaching aid can be a simple tool like chalkboard or a complex tool like computer programme. Simply put, the teaching learning resource are apparatuses used to deliver information in the classroom. Tamakloe, Amedahe, & Atta (2005) definition of teaching learning resource is consistent with Adjei et al (2015) and Klans (2010) definitions. According to Tamakloe et al (2005), teaching learning resource are materials used by teachers to promote learning, understanding and acquisition of knowledge, concepts, principles or skills by his students. In other words, teaching learning resource are the application of materials and equipment relevant for the motivation, information, instruction and presentation of the subject matter to the student in order to make the learning much easier for the student.

Evaluation of teaching learning resource definitions as given by Tamakloe et al (2005), Klaus (2010), and Adjei et al (2015) seem to suggest or portray teaching learning resource as limited to teaching and learning materials (including teaching equipment). This observation is line with Adjei et al (2015) assertion that most people see teaching learning resource to refer only to teaching and learning materials used by teachers to promote learning in the classroom. However, teaching learning resource is more than teaching learning material. Infact Atieno (2014) gave an expanded definition of teaching learning resource. According to Atieno (2014), teaching learning resource refers to both human and non-human resources that are used to support the teaching and learning process. Adjei et al (2015) indicated that teaching learning resource is to aid the teacher but cannot

replace her in teaching and learning activities. Simply put, teaching learning resource complements the efforts of a teacher to bring understanding of a subject matter to students. The conduct of this study is based on the definition of teaching learning resource as envisaged by Atieno (2014) who defines teaching learning resource as comprising of both human and non-human resources. In other words, the determination of TRL within the context of the current study will include both human and non-human related items. Atieno (2014) indicated that teaching learning resource must be available and adequate to endure effectiveness and efficiency in teaching and learning. Per Atieno (2014) stated that the adequacy of teaching learning resource refers to the satisfactory availability of the quality and quantity of materials, physical facilities and human resources. DFID (2007) indicated that the adequacy of teaching learning resource mostly refers to the adequacy of materials like textbooks which is the most cost effective input affecting student performance. Atieno (2014) in his study defined the adequacy of textbook as one textbook per three students and at the primary level enough reading books so that every child has the opportunity to read at least one new book every week. Padmanabhan (2001) mentioned that the effectiveness and efficiency of the educational system is a function of the adequacy of teaching learning resource. Padmanabhan (2001) further stated that the lack of adequate teaching learning resource makes (such as textbooks and other resource materials) the teacher handle the topic or subject in an abstract manner. This makes the teaching dry and non-exciting. Atieno (2014) also added that apart from materials, the availability and adequacy of appropriate personnel plan and physical facilities are needed to support the classroom educational efforts. Therefore, the scarcity of textbooks, teachers, libraries, classrooms, computer laboratories, and others will limit the ability of the educational system to respond wholly to new demands. This means that the quality, productivity, effectiveness, and efficiency of the educational system is dependent on the availability and adequacy of teaching

learning material, physical facilities and human resources. The current there as one of its objectives seeks to assess the availability and adequacy of teaching learning resources in Basic Schools in the Asokwa Municipality.

2.2.3 Components of Teaching and Learning Resources

According to DFID (2007) teaching learning resource has three major components. These are material resources, physical facilities and human resources.

Effiong and Igiri (2015) defined TLM also known as instructional materials as both print and non-print items that are used to transmit or impact information or knowledge to students within the educational system. These TLMs may include textbooks, newspapers, pictures, kits, videos, and magazines. Effiong and Igiri (2015) stated that other TLM materials include paper supplies and writing materials such as pens, eraser, exercise books, crayon, chalk, drawing books, notebooks, pencil, ruler, slate, and workbooks. According to Omane-Akumoah et al. (2004), materials can be categorised into three. The first is the primary aids which refers to real objects such as plants, animals, aeroplanes in an airport and several real objects used in teaching. The second category is the secondary aids and it relates to models of real objects such as statues of birds or animals, models of houses and cars or voices reproduced through the use of audio cassette recorders. The last is the tertiary aids which include slides, photographs, charts, maps, and prepared drawings. Omane-Akumoah et al. (2004) indicated that the primary aids have the best effect and can be replaced with either the secondary or tertiary aids.

Ajoke (2017) stated that learning materials can be divided into six groups. These are: 1) Printed and reference materials (such as Textbooks, newspapers, magazines, government documents, teachers‟ guide, duplicated materials, journals, hand book, bulletins, pictures, work books,

pamphlets, leaflets); 2) Graphic materials (e.g. Graphs, charts, diagrams, maps, globes); 3). Display materials (like Chalkboard, bulletin boards, flat pictures, magnet boards and flannel board); 4) Projected materials – television, video tape, overhead projector, slides and slide projector and transparencies); 5) Audio and other visual materials (including Radio, model, computer, tape recording etc); and 6) Community resources (e.g. Zoos, Agricultural extension service centres, market place, parks, industrial establishments). Ajoke (2017) argued that instructional materials make teaching and learning realistic, interesting, appearing, and practical. They enable both teachers and learners to actively and effectively participate in lesson sessions.

Kiptum (2018) has stated that an important resources needed to ensure effective teaching and learning is the physical environment. As indicated by Kiptum (2018), the "learning environment" concept relates to the school's physical and social environment such as building design, classroom sizes, and general infrastructure (such as library facilities, staffroom, toilets, school compound and playground). Allen (2009) stated that the learning environment of schools also include the socio-cultural and the economic environment. Kiptum (2018) indicated that the physical environment should be attractive and appropriate to both students and teachers in the school. Lippman (2010) argued that the physical environment is basically the physical features of a room such as the size of the room, lightening, degree of temperature, condition of classroom floor (carpeted, concrete, or tiled). The physical classroom environment includes the spatial elements such as floor, windows, walls, and classroom equipment like desk, chairs, counters, computer equipment, rugs, chalkboards, counters, and others Fisher (2008). The current study will assess the availability and adequacy of school facilities. Table 2.1 depicts the types of school facilities.

2.2.4 Types of Physical Facilities

A review of literature on types of physical facilities in educational institutions reveals several categories that serve different purposes within the learning environment.

Instructional facilities constitute spaces and equipment specifically designed for teaching and learning activities. These encompass traditional classroom settings with seats and chalkboards, as well as specialized areas such as laboratories and libraries. Additionally, instructional facilities may include resources like audio-visual equipment, experimental apparatus, zoological gardens, and agricultural farms intended for hands-on learning experiences (Lawanson, Owolabi, & Ayeni, (2011). Recreational facilities are integral to promoting physical activity, sports, and leisure among students and staff. These spaces typically include lawns, fields, pitches, and equipment tailored for various sports, games, and general recreational activities. Access to recreational facilities contributes to holistic student development and fosters a sense of community engagement within educational settings (Lawanson et al., 2011). Residential facilities cater to the accommodation needs of students and staff members, providing living quarters and associated amenities. Hostels, refectories, and staff quarters constitute key components of residential facilities aimed at enhancing the residential experience and supporting the well-being of individuals within the educational community (Lawanson et al., 2011). General-purpose facilities offer versatile spaces adaptable to diverse uses within educational institutions. Developed open spaces, such as sporting pitches, fields, lawns, and parking lots, can be repurposed as needed for various activities. Undeveloped open spaces encompass the entirety of land under institutional jurisdiction awaiting specific development plans, offering potential for future expansion and utilization (Lawanson et al., 2011). The literature underscores the multifaceted nature of physical facilities in educational

contexts, each category playing a distinct role in facilitating teaching, learning, recreation, accommodation, and institutional functionality.

2.2.5 Curriculum and Syllabus

Musingafi, Mhute, Zebron & Kaseke (2015) indicated that the etymology of the world "curriculum" is the Latin word "Currere" which means "to run or proceed". Hlebowitsh (2004) thus stated that curriculum is the course of deeds and experiences that guide people to transit from childhood to adulthood. Musingafi et al (2015) indicated that curriculum is a clear and approved courses that a student must attained in order to pass a particular educational level. In other words, it is a programme of sequential experiences that a student must attained in order to be certified as has completed a given level of study. Curriculum provides the learning outcome through which teaching and learning must proceed (Musingafi et al., 2015). Hlebowitsh (2004) in relating curricula to school system defined curricula as sets of courses (inclusive of their content) undertaken at a school or university. Musingafi et al (2015) further stated that curricula provide the subjects outlines and teaching and learning methods necessary for ensuring that the students have indeed assimilated the needed materials.

Khwaja, et al (2014) indicated that, generally, curriculum is the social contract between the society and the educational institutions with regard to the stages that a student must pass through before attaining a particular qualification or level of proficiency. Curriculum is therefore the formal and informal educational content and processes by which learners acquire knowledge and skills under the umbrella of an academic institution. Akker (2003) indicated that there are three levels or forms of curriculum. These are the intended, implemented, and attained (see Figure 2.2). Musingafi et al (2015) indicated that curriculum is prescriptive and as such it is usually issued or approved by the

government appropriate agency. Musingafi et al (2015) indicated that sometimes the concepts "curriculum" and "syllabus" are used interchangeably. However, Khwaja, et al (2014) alluded that curriculum is broader in scope than syllabus. Infact, the author indicated that a curriculum is a collection of a number of syllabus. According to Khwaja et al (2014), a syllabus refers to the content (topics), instructional strategies and means of evaluation of an individual course or subject. Per Musingafi et al (2015), the word syllabus originated from the Greek σίττυβας (meaning table of contents). According to Slattery and Carlson (2005), syllabus like curriculum is a contract between a teacher and her students intended to answer students' questions about a subject or course, and also to inform them about the course's expectations and the consequence of failing the course's expectations. Okai (2010) alluded that syllabus refers to the topics or course outline that students are to study within a given period. This means that a syllabus is part of the curriculum but not the curriculum itself. The syllabus provides information on grading policy, grading rubric, late work policy, locations and times, other contact information for teachers (phone or email), textbooks, assigned reading books, calculators, tutor locations, resource centres, important dates in course such as exams and paper due-dates, tips for succeeding in mastering course content such as study habits and expected time allotment, necessary pre-requisites or co-requisites to current course, safety rules if appropriate, classroom behaviour, and objectives of the course (Musingafi et al., 2015). The current study will determines how teaching and learning resources affect the delivery of syllabus.

2.2.6 Forms of Curriculum

Curriculum development and implementation are multifaceted processes that involve various forms and types of curricula. These forms serve as frameworks for understanding the different

dimensions of curriculum planning and enactment. The following literature review provides an overview of the key forms of curriculum as identified by scholars in the field.

Intended Curriculum: The intended curriculum represents the idealized vision or foundational philosophy underlying a curriculum. This form of curriculum is often articulated through a rationale or basic principles that guide educational planning and decision-making (Tyler, 1949). It is typically formalized and documented in curriculum frameworks, guidelines, or standards established by educational authorities (Eisner, 1979). The intended curriculum sets forth the overarching goals, objectives, and content that educators aim to impart to students within a given educational context. Implemented Curriculum: The implemented curriculum refers to how the intended curriculum is perceived and translated into practice by educators, particularly teachers, within the classroom setting (Stenhouse, 1975). This form of curriculum encompasses the instructional strategies, activities, and resources employed by teachers to deliver the prescribed content and achieve the specified learning outcomes (Oliva, 2009). It represents the operationalization of the curriculum in action, reflecting the dynamic interaction between teachers, students, and instructional materials (Marsh & Willis, 1995). The implemented curriculum is shaped by various factors, including teacher beliefs, pedagogical approaches, and contextual constraints (Loughran, 2002). Attained Curriculum: The attained curriculum focuses on the learning experiences and outcomes as perceived and experienced by students within the educational context (Popham, 1975). This form of curriculum emphasizes the lived experiences of learners and the knowledge, skills, and understandings they acquire through their engagement with the curriculum (Elliott, 2007). It encompasses the actual learning outcomes achieved by students, which may vary from the intended objectives of the curriculum (Taba, 1962). The attained curriculum highlights the active role of learners in constructing meaning and making sense of their

educational experiences (Bruner, 1966). It underscores the importance of assessing student learning and understanding the impact of curriculum implementation on student achievement (Wiggins & McTighe, 2005). The forms of curriculum outlined in this literature review provide a comprehensive framework for understanding the complexity of curriculum development and enactment. By examining the intended, implemented, and attained dimensions of curriculum, educators can gain insights into the alignment between curriculum goals, instructional practices, and student learning outcomes. This holistic perspective enables educators to enhance curriculum planning and delivery to better meet the needs of diverse learners within educational settings.

2.2.7 Delivery of Syllabus

Stellenbosch University (2022) indicated that the aspects of syllabus or curriculum that are the responsibility of teachers are teaching, learning, and assessment. OECD (2009) stated that there are many factors that are related to student outcomes**.** OECD (2009) continued that different studies have defined different facets of teaching practice that are related to effective classroom learning and student outcomes. There is direct aspect of instruction such as Close monitoring, adequate pacing and classroom management as well as clarity of presentation, well-structured lessons and informative and encouraging feedback (OECD, 2009). These direct instructions have generally been noted to have positive impact on student achievement (OECD, 2009). The direct instruction alone is not enough (OECD, 2009). OECD (2009) further argued that while the teacher provides the learning opportunities, the student must recognise and utilise these opportunities to ensure effective learning. Effective teaching and learning must inculcate motivation, goals and outcomes. Thus, the blueprint of instructional quality is broader than direct instruction (OECD, 2009).

Klieme et al (2006) as cited by OECD (2009) postulated three basic (second-order) aspects of instructional quality. These are classroom management (which includes direct instruction components), student orientation/learner-centred orientation (e.g. supportive climate and individualised instruction), and cognitive activation (e.g. the use of deep content, higher order thinking tasks and other demanding activities). Amendum and Fitzgerald (2013) also argued that a very important dimension of instructional quality is content delivery. Per OECD (2009) second-order and Amendum and Fitzgerald (2013) content delivery, one can deduce that the delivery of syllabus or curriculum can be assessed from four main perspectives. These perspectives are classroom management, student orientation, cognitive activation, and content delivery. The dimensions are explained below:

Classroom Management

Adzongo and Olaitan (2019) stated that classroom management have been defined severally. According to Adzongo and Olaitan (2019), classroom management is the orderly control of students, teaching materials and the class environment with the purpose of achieving the expected learning outcomes to improve students' academic performance. A similar definition of classroom management was given by Akpakwu (2012). Akpakwu (2012) stated that classroom management is the orderly control of students, teaching materials and teaching aids to enhance the achievement of learning objectives. Assessment of Adzongo and Olaitan (2019) and Akpakwu (2012) clearly sees classroom management from the perspective of control. However, management principles involve more than control. It includes planning, organising, leading, directing, and others. Igbacha (2014) agrees to the assertion that classroom management involves more than control. In fact, Igbacha (2014) gave a definition that inculcates other principles of management in the context of

classroom management. According to Igbacha (2014), classroom management is the process of planning, organizing, coordinating, motivating and controlling the actions of learners and materials in order to achieve instructional objectives. Adzongo and Olaitan (2019) indicated that a teacher is expected to exhibit several management skills which include; effective preparation of lesson plans, lesson presentation, classroom organisation, teacher personality, effective usage of instructional materials, effective classroom communication, and classroom control and discipline. Adzongo (2018) further stated that a teacher can also achieve classroom management through the following: seats and sitting arrangements, classroom beautification, cognizance of various background and individual difference in students' behaviour, good class control, good instructional preparation (planning, organising, directing, controlling, and coordination).

Student orientation

Weimer (2012) stated that recently, the principles of learner-centred teaching have received extensive usage for various levels of academic disciplines. However, even though the principle is popular, the definition has been muddied and over simplified (Weimer, 2012). The author further argued that the philosophy of a learner-centred teacher goes beyond student engagement, active learning, student self-learning. According to Lawless (2019), a learner-centred approach sees the learner as active agents. The learner brings use their own knowledge, past experience, education, and ideas to impact on how they absorbed new information and learn (Weimer, 2012). Lawless (2019: 1) indicated that a University lecturer Martha Kennedy defined learner-centred teaching as "…a classroom dynamic in which the students participate actively while the teacher might take a (seemingly) more passive role. It boils down to group work, one-on-one tutoring in the classroom between student and teacher, student presentations…To learn a skill, students must be directly

involved. No teacher can stand there and tell the students how to do something and expect the students to leave the classroom able to do it."Lawless (2019) asserted that the learner-centred principle underlines cognitive learning theory, constructivist learning theory, and adult learning theory. The author further argued that the learner-centred approach differs from the traditional instructor-centred model. The teacher-centred model (instructor-centred) is based on behaviourism. The approach projects the student as "blank slate" and the teacher as an expert must impart all the necessary information on that blank slate. This approach sees learners as respondents to external stimuli (Lawless, 2019). Felder (2022) outlined three main methods for achieving student-oriented teaching and learning. These are: active learning - students solve problems, answer questions, formulate questions of their own, discuss, explain, debate, or brainstorm during class; Cooperative learning, - students work in teams on problems and projects under conditions that assure both positive interdependence and individual accountability; inductive teaching and learning, - students are first presented with challenges. Inductive methods include inquiry-based learning, case-based instruction, problem-based learning, project-based learning, discovery learning, and just-in-time teaching. Lawless (2019) also outlined eight (8) practical ideas for incorporating learner-centered activities in training. These are; foster collaboration with group projects, let learners develop content, stage presentations, hold a competition, hold a debate, gamify learning, pose a problem, do role-play, brainstorm, and do a demo. Kotzebue et al (2020) has stated that cognitive activation is a very important quality of effective teaching and hence the delivery of a teacher's syllabus. Kotzebue et al (2020) indicated that the concept cognitive activation has received several definitions. Klieme, Lipowsky, Rakoczy and Ratzka (2006) sees cognitive activation as setting challenging tasks, practicing content-related discourse, and activating prior knowledge. In others words, per Klieme et al (2006) understanding, cognitive

activation involves three main elements. These are setting challenging tasks, practicing content-related discourse, and activating prior knowledge. Lipowsky et al. (2009) also defines cognitive activation from three key components namely cognitive level of students' activities, conceptual instruction and thoughtful discourse. An evaluation of both elements as defined by both authors may reveal that Lipowsky et al. (2009) description of the three elements of cognitive activation could be equated to Klieme et al (2006) assertion. Kunter and Voss (2011) defined cognitive activation as guiding of learner's goal-oriented cognitive activities and the creation of cognitive conflicts. Neumann, Kauertz and Fischer (2012) however summarised the definition of cognitive activation as accretion of all features of instructional quality, which cognitively activate students. A critical analysis of the various definitions of cognitive activation clearly denotes three main themes. These are the usage of cognitive challenging questions or tasks, activation of students' prior knowledge, and the generation of cognitive conflicts. Lipowsky (2015) stated that due to the difficulty in directly observing and measuring students' cognitive activation, indicators are needed to measure the construct. Förtsch, Werner, Dorfner, Kotzebue, and Neuhaus (2017) stated that teaching can be indirectly analysed by examining the materials and tasks that the teacher uses in class. The other option is to analysed lessons directly by video recordings of the lessons and evaluation using a coding manual or an observation protocol of the lessons (Förtsch et al., 2017). Kotzebue et al (2020) indicated that in both cases indicators are still required. The author continued that these indicators could be deduced from the teaching activities with high potential for cognitive activation. These indicators are: setting challenging tasks, provoking cognitive conflicts, point out differences in content-related ideas, concepts, interpretations and solutions, linking with prior knowledge, thoughtful discourse, encourage learners to present or explain their thoughts and ideas (Kotzebue et al, 2020).

According to the University of Colorado (2022), an important step in effective course design is the determination of your teaching methods. The teaching method selected is expected guide the teacher is delivering both learning activities and content. The decision on how to deliver content is to be made after a careful analysis of the teaching/learning situation, course goals, assessment practices and criteria, and the nature and backgrounds of the students. It is these decisions that the teacher is expected to deliver (University of Colorado, 2022). The University of Melbourne (2022) indicated that the term ***delivery*** refers to the learning 'objects' that teachers share with students. These might include video presentations, readings or references, studio project briefs and subject information or instructions. The University of Melbourne (2022) further stated that content could be delivered through lecturing, curated content, practical demonstration, and virtual site visit. University of Illinois Urbana-Champaign (2022) highlighted that content delivery is one of the most difficult and yet an important task in course development. Content is at the centre of any course, therefore how it is presented determines the success and satisfaction of students. University of Illinois Urbana-Champaign (2022) stated that some of the best practices in content delivery are; organize your lectures logically, make your content engaging, deliver your content consistently, be concise, stay focused, be brief, and present your content visually whenever possible**.**

2.3 Theoretical Literature and Frameworks

There are various theories that underpins the study of teaching learning resources. Some of these theories are curriculum theory, human capital theory, conditions of learning theory, theory of instruction, and the education production theory. All these theories and how they partly relate to the current study are explained under the sub-sections 2.3.1 to 2.3.5.

2.3.1 The Curriculum Theory

The curriculum theory states that learning must be planned and guided (Musingafi et al., 2015). This means that per the curriculum theory, in learning there should be predetermination of what shall be studied, when it shall be studied, and by whom. In other words, the curriculum theory states that for learning to occur, the process has to specify in advance what it seeks to achieve and the process thereof (Musingafi et al., 2015). Smith (2000) stated that the modern curriculum theory and practice evolved within the formal educational system. This study is partly grounded in the curriculum theory because the study asserts that teachers have a mandate to deliver on their syllabus (which is part of the curriculum) and that their ability to deliver on syllabus is a function of the availability and adequacy of TLR.

2.3.2 Human Capital Theory

Kombo and Kakuba (2020) states that the human capital theory assumes that formal education is necessary to build the productive capabilities of a population. The theory relates that education promotes the productivity and efficiency of employees by enhancing their cognitive stock of economically productive human capability, which is itself a function of a person's innate abilities and investment (Kombo & Kakuba, 2020). The authors further asserts that proponents of human capital theory training of employees see it an investment in human capital and that it is more valuable than investing in physical assets. According to Babalola (2003), the reason for human capital investment is based on three arguments. The arguments are: the new generation must be given the appropriate parts of the knowledge which has already been accumulated by previous generations; the new generation should be taught how existing knowledge should be used to develop new products, to introduce new processes and production methods and social services;

and People must be encouraged to develop entirely new ideas, products, processes, and methods through creative approaches. Per Kombo and Kakuba (2020), the human development success of any country is based upon their human capital stock. According to the human capital theory, human capital investment enhances greater service quality and organisational performance. Since syllabus are instrument that guide the development of the human capital of the new generation, the delivery of syllabus of by teachers becomes imperative. In this regard, the provision of teaching learning resource is seen as investment necessary for teachers to deliver on their syllabus which in the long run will help build the human capital of Asokwa Municipality. Thus, on the basis of the fact that the topic of this paper is about the effect of teaching learning resource on teachers' delivery of syllabus, the study is also grounded in the human capital theory.

2.3.3 Conditions of Learning Theory

This theory was propounded by Robert Gagne. The theory states that there are several levels of learning and that each level requires different type of instruction (Mupa & Chinooneka, 2015). The theory highlights five categories of learning which include verbal information, intellectual skills, cognitive strategies, motor skills and attitudes. The theory advocates those different conditions are needed for each type of learning (Mupa & Chinooneka, 2015). For example, cognitive learning requires practices that lead to the development of new solutions to problems and exposure to role models. The current study is also grounded in this theory because it advocates that teaching learning resource are conditions necessary for effective delivery of syllabus.

2.3.4 Theory of Instruction

Naisianoi, Koome & Marima, (2020) stated that the theory of instruction was developed in 1966 by Bruner. Per Naisianot et al (2020) assertion, Bruner was interested in developing autonomous students who develop knowledge independently. Thus, schooling must have essential outcomes like critical thinkers and problem solvers than equipping them with ideas and categories as per the conventional means of learning. Naisianoi et al (2020) argued that studying is supposed to transit from enactive to iconic to figurative representation of the surrounding world. In "enactive representation (from 0-1 year) learning is action-based where pupils learn through materials. Pupils acquire knowledge through manipulating materials. In iconic representation (1-6 years) concepts are stored in image forms. This is early childhood learners' level. Lastly, in figurative representation (from 7 years and above) the process of acquiring knowledge is in form of symbols" (Naisianoi et al., 2020: 295). The study is also partly grounded in this theory because it stipulates that learning can be effectively delivered through syllabus when appropriate TLMs are provided. The syllabus stipulates how teachers are supposed to teach at every learner's level (whether enactive, iconic, or figurative representations). For example, a teacher teaching creche level is expected to use the enactive; those at the kindergarten are expected to use the iconic representation; and those above the kindergarten are expected to use the figurative representation. It is argued that teachers can deliver syllabus effectively through the proper application of TLM. Therefore, this particular theory is grounded in the hypothesis that stipulates that there is a relationship between TLM and teachers' delivery of syllabus.

2.3.5 The Education Production Theory

Per Ojuok, Gogo & Olel (2020), the education production theory is the application of economic theory where education is viewed as a production model that accepts educational inputs leading to students' achievements as outputs. Efficiency analysis is measures the competence which enables the conversion of the inputs into valued outputs (Ojuok et al., 2020). Education is regarded as a production and schools as a production unit. Atieno (2014) indicated that the inputs of education include TLM, physical facilities, and qualified teachers and other human resources. On the other hand, the output of teachers include the delivery of syllabus anchored by production outcomes such as content delivery, classroom management, learner-centred, and cognitive activation. The problem with the input measures are the qualitative dimensions which are hard to define and difficult to measure (Ojuok et al., 2020). The current study therefore is also grounded in the education production theory.

2.4 Empirical Literature of the Study

The empirical literature of the study relates to the results of other researchers relevant to the thematic areas of the study. In line with this, the section has been divided into four sub-sections relative to the study's objectives. These sub-sections are: the availability and adequacy of TLRs in basic schools; the relationship between the availability and adequacy of TLM and teachers' delivery of syllabus; the impact of the availability and adequacy of physical facilities on teacher's delivery of syllabus; and the correlation between the adequacy of human resource and teachers' delivery of syllabus.

2.4.1 The availability and adequacy of TLRs in Basic Schools

A lot of studies have been conducted that seek to test the availability or adequacy of TLRs (Okongo et al, 2015; Naisianoi et al, 2020; Bukoye, 2019; Effiong & Igiri, 2015; Odunola et al., 2020; Bakari, Likoko, & Ndinyo, 2014; Okyere-Kwakye, 2013; Ojuok et al., 2020; and Onyango & Sika, 2020). A study by Tuimur and Chemwei (2015) in Kenya sought to assess the availability of instructional material for teaching social studies topics such as conflict and conflict resolution. The study revealed that instructional materials such as pupil's textbook, teacher's reference, chalkboard, wall maps, atlases, charts, and teacher made notes were available. However, other TLRs like newspapers, audio tapes, school radio, magazines, televisions, computers, and real objects were not available. Additionally, resources persons though available but is woefully inadequate. The study further indicated that the inadequate availability of TLRs may derailed the effective preparation and teaching of conflict and conflict resolutions in social studies. A similar study by Okongo et al (2015) in Kenya also sought to find out if TLR are available and influenced the execution of inclusive education in pre-school Centres in Nyamira North sub-county. After analysing data collected from 40 pre-school centres, 40 head teachers, 134 pre-school teachers, 70 pre-school parents and 12 Education Officers, the study revealed that 78 percent of the respondents think that there are inadequate resources in pre-school centres. A 2020 study in Kenya by Naisianoi et al (2020) assessed the availability of TLRs in the upper primary schools in Karunga Zone, Gilgil Sub County. The study asked about 100 sampled teachers to assess their level of agreement on the availability of TLRs on a five-points Likert scale. Per the data analysis the sufficiency of TLRs recorded a mean value of 3.38. This mean value is a little above the neutral value of 3.00. The implication is that the sufficiency of TLRs in upper primary schools were considered moderate but not high (A mean value $\geq$ 4.00). Additionally, each of the individual TLR tested also recorded

Mean value below 4.00. Specifically, the sufficiency of the tested TLRs were: reference books (3.42); equipment and books (3.39); resources persons (3.35); Teaching resources such as chalk, duster, manilas, charts, models, and calculators (3.78); teachers' guide (3.14); ICT devices (3.24); and field trips/excursions (3.31). Naisianoi et al (2020) study seems to be inconsistent Okongo et al (2015) study in terms of the inadequacy of TLR. Indeed, whiles 78% of Naisianoi et al (2015) study said that the resources are inadequate, the sufficiency of TLRs as discovered by Okongo et al (2015) recorded an average arithmetic mean score of 3.38 (67.6% if converted to percentage).

A study by Bukoye (2019) in the Niger State of Nigeria sought to investigate the availability of TLRs in secondary schools. The study gathered primary data from 100 students from five secondary schools. The data revealed that private schools tend to have more TLRs than the government schools. Per the data, TLRs like textbooks, blackboard, mathematics kits and science kits were seen to be available in both public and private schools. The study further discovered whiles private schools have white board, picture maps, newspapers, audio-visual materials, tape recordings, filmstrips, computers, televisions, among others, the governments schools lack most of them. More so, items like projectors and televisions were seen to be lacking in both school categories. Another study in Nigeria by Effiong and Igiri (2015) sought to evaluate the impact of instructional materials in teaching and learning of biology in Senior Secondary Schools in Yakurr LGA. The study discovered that instructional materials like charts, poster, maps, globes, video tape recorder, and cassette tape recorder were mostly seen as "number not available". The percentage of respondents fall between 67% - 100%. In Ghana, a study by Okyere-Kwakye (2013) gathered data from 200 teachers drawn from 20 Junior High Schools in New Juaben Municipality. The results of the study depicted that facilities like furniture, urinal and toilet facilities, and classroom blocks were available but inadequate, others like computer laboratories, library books,

staff common room, and teachers' accommodation were unavailable. The above literature depicts that even though a lot of studies have assessed the availability and sufficiency of TLR, there are still some research gaps which have made the conduct of the current study valid. The first research gap is the inconclusiveness of the empirical findings. For instance, whiles Okongo et al (2015) study found that the availability of TLRs in the studied schools were adequate, Naisianoi et al (2015) study revealed the inadequacy of TLRs in the studied schools. In the Ghanaian, context, Okyere-Kwakye (2013) study of schools in the New Juaben Municipality discovered that even though TLRs are available, they were inadequate. These discoveries therefore call for additional research to test whether today (2022) availability and adequacy of TLRs in schools are still problematic or not. The second gap that has necessitated the conduct of this study relates to the location of the extant studies. Most researches on TLR were conducted outside the Asokwa Municipality. Asokwa Municipality (formally part of Kumasi Metropolitan Assembly) given its dynamics may or may not have challenges relative to TLRs availability and sufficiency as compared to other Municipalities. The most effective way to determine whether the Asokwa Municipality has TLR challenges or not (in order to make appropriate recommendations) is to conduct a research study, hence the conduct of the current study.

2.4.2 The Relationship between the Availability and Adequacy of TLM and Teachers Delivery of Syllabus

The effect of TLM on students' outcome has received considerable research attention from the academia. Researchers from across the globe such as: Adalikwu and Iorkpilgh (2013); Arop. Umanah and Effiong (2015); Olayinka (2016); Naisianoi et al (2020), Bukoye (2019); Effiong and Igiri (2015); and Ajoke (2017) have all conducted extensive studies to establish the kind of

relationship that exist between TLM and student outcomes. The first empirical study reviewed for the purpose of this sub-section was conducted by Adalikwu and Iorkpilgh (2013). The research investigated the effect of teaching aids on senior secondary school students' academic performance in chemistry in Nigeria (specifically, Cross River State). The study sampled 100 Senior Secondary One (SS1) students from five (5) schools in Yakuur Local Government Area of Cross River State. Out of the 100 students, fifty students (forming the experimental group) were taught with instructional materials, whiles another fifty students (Control group) were taught without the instructional materials. The results of the experiment show that students who were taught with TLMs performed significantly better than those taught without them. Also, the study revealed that the use of TLM generally improved students' understanding of concepts and led to high academic achievements. A similar study by Arop et al (2015) sought to examined the effect of instructional materials on the study of basic science in Junior Secondary Schools in Cross River State in Nigeria. The study employed quasi experimental design on 240 students from four schools in the Biase Local Government Area. The study's results indicated that the use of instructional materials have favourable effect on students' achievement in science concepts. The details of the experiment revealed the experimental group recorded a pre-test and post-test Mean scores of 57.4 and 74.0 respectively. On the other hand, the control group recorded a pre-test and post-test Mean scores of 36.1 and 47.5 respectively. Thus the mean scores gain for the experimental and control groups were 16.6 and 11.4 respectively indicating that the superiority of the experimental group over the control group with the use of instructional material in the studying of the "concept of diffusion" (Arop et al, 2015). The study recommended that teachers should source for TLM for effective lesson delivery.

Effiong and Igiri (2015) study of S.H.S 2 students studying biology from five selected senior secondary schools in the Yakurr Local Government Area in the Cross River State revealed that students exposed to instructional materials recorded positive achievements over those who were not. The specific details of the study revealed that 58% and 67% of the respondents agree that the use of instructional materials make learning: real and permanent; and interesting respectively. Additionally, 54% and 62% of the respondents agree that the use of learning materials make learning faster and promote retention respectively. Studies by Olayinka (2016) and Bukoye (2019) also discovered a positive effect of instructional materials on students' academic performance. Moreover, Ajoke (2017) study also revealed similar findings by previous researchers cited. Ajoke (2017) study discovered that the difference in the performance of students taught with visual instruction materials and those taught without it were statistically significant ($F_{(1, 150)} = 72.282$, $p<0.05$). According to Ajoke (2017) study, the experimental group (those taught with the instructional materials) recorded a higher adjusted mean score of 16.990 over the control group with a recorded adjusted mean score of 13.954. A study by Naisianoi et al (2020: 294) in Kenya also revealed that "teaching and learning materials availability ($r= .652$, p .000; $\beta= .751$, p .000) has a positive and statistically significant influence on the development of pupils in upper primary". In spite of the seemingly conclusiveness of the relationship between TLM and student outcomes as empirically verified by various authors (some of whom have been cited here), there are still some gaps in the extant literature that has necessitated the conduct of the current study. One such gap that has makes it necessary to conduct this study relates to the dependent variables of the extant studies. Most of the studies cited under this section assess the effect of TLM on student outcomes such as academic performance and retention. Virtually little studies have been conducted that assess the effect of TLM on teachers' delivery of syllabus outcomes. Specifically,

teachers' delivery of syllabus outcomes such as classroom management, student orientation/ learner-centred orientation teaching, content delivery/syllabus completion, the usage of students' cognitive activation has not been well explored. Thus, the conduct of this study is also to determine whether the usage of TLMs promote teachers' delivery of syllabus particularly from the perspectives of Teachers in the Asokwa Municipality.

2.4.3 The Impact of the Availability and Adequacy of Physical Facilities on Teachers Delivery of Syllabus

Studies that have been conducted to evaluate the impact of physical facilities on educational outcomes include: Leung, Chang and Wang (2006); McGowen (2007); Shah, Khan, Khan, and Khan (2013); Wambua, Gakil and Mutwiri (2018), Onyango and Sika (2020); Ojuok et al (2020); and Odunola et al (2020). Leung et al (2006) study was conducted in Hong Kong. The study gathered data from 113 teachers who have been moved to new millennium school buildings built by the Government of Hong King. The results of the study revealed that "the teachers did not consider that their working behaviour were significantly better in the millennium schools (Keung et al, 2005: 79). In other words, the finding by Leung et al (2006) suggests that teacher's behaviour is not significantly a function of physical facilities. This finding may not be surprising given the background that Hong Kong is a developed country and as such it is possible that the old facilities previously occupied by the teachers were of high quality and standards. Thus, the new facilities may not be much greater in quality than the old ones. Another study by McGowen (2007) sought to assess "the impact of school facilities on student achievement, attendance, behaviour, completion rate and teacher turnover rate in selected Texas High Schools". The study revealed that student achievement, attendance and completion rate measures were not found to be statistically

significant in relation to school facility conditions. However, discipline and behaviour were found to be significantly related to school facility conditions. In the context of Africa, Wambua (2018) aimed at determining the impact of physical facilities on pupils' performance in social studies in lower primary schools in Kibwezi zone, Makueni County, Kenya. The study's results show that classroom environment in Kibwesi zone were not conducive for the learning of social studies by the pupil. Availability and use of physical facilities in social studies was below average and pupils scrambled to use the little available resources. Pupils' performance in social studies was below average. Onyango and Sika (2020) study also investigated the effects of physical facilities on job satisfaction among female principals in secondary schools in the Siaya County in Kenya. The results of the study discovered that physical facilities were not sufficient and that the relationship between physical facilities and job satisfaction was moderate and negative. The study further indicated that physical facilities account for 25.8% variations in job satisfaction. The authors interpreted their results to mean that physical facilities are very significant and that as they become more inadequate, the more the female principals become dissatisfied. Ojuok et al (2020) study in Kenya also established that science laboratory, quality classroom and computer laboratory (which are components of physical facilities) had weak but significant relationship with student performance. The results of the study revealed that the three variables, science laboratory, quality classroom and computer laboratory (which are components of physical facilities) had weak but significant relationship with student performance. Odunola et al (2020) study in Kwara State in Nigeria also discovered that there was significant relationship between physical facilities and school effectiveness in Kwara state public secondary schools (calculated r-value of 0 .301> the critical r- value of 0.195).

The empirical literature has three major gaps which have been the bases for the conduct of the current study. The first gap is that majority of the studies did not assess how physical facilities affect teachers' delivery of syllabus (anchored by classroom management, student orientation, content delivery, and cognitive activation. The second gap is that the extant literature is diverse on the kind of relationship that exist. Whiles some authors have discovered positive effect, others discovered negative relationship. The third gap is the exclusion of Asokwa Municipality in most of the studies. Thus, without additional studies directed at Asokwa Municipality, the effect of physical facilities on educational outcomes will be difficult to determine. The current study will fill these gaps by assessing whether physical facilities have a positive or negative effect of teachers' delivery of syllabus within the Asokwa Municipality.

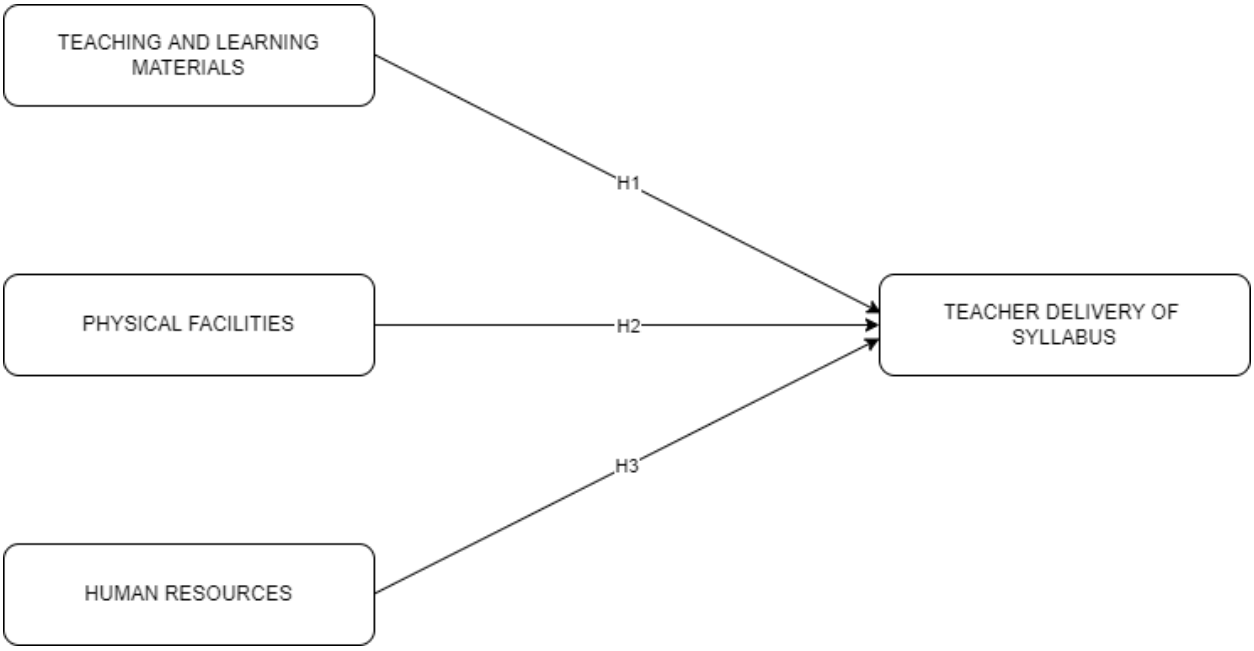
2.4.4 The correlation between the adequacy of Human Resource and Teachers delivery of Syllabus

The effect of human resource on educational outcomes have been well researched into. Gituathi (2012) study in Kenya for instance reveals that there is a high teacher-pupil ratio of 1:100 which has negatively affected the quality of teaching. The study further discovered that teacher's experience, teacher's preparedness, and educational beliefs affect educational outcomes such as students' academic performance and teacher's classroom practices. Additionally, the study indicated that the most important aspects of staff development are taking higher education and training, refresher courses and on-the-job-learning. However, the study revealed that personal character and teacher's attitude have no influence on students' academic performance. Sarpong (2012) study in Ghana sought to investigate the effect of employees' orientation (an aspect of human resource management) on performance in the Ghana Education Service. The research

confirmed that orientation has low satisfactory effect on performance. In other words, organising orientation for teachers does not seem to impact so much on their output. This may be due to the many challenges that influence teachers' orientation negatively. Oluwadare (2011) study in North West geo – political zone of Nigeria measured human resources using the quality of teachers. The study's results stipulated that there is inadequate quality of teachers in the zone. The study further discovered that there is significant relationship between the quality of teachers and students' academic performance. Effiong and Igiri (2015) study seems to confirm Oluwadare (2011). According to Effiong and Igiri (2015), students taught by highly qualified biology teachers tend to record positive achievement in their academic performance. Onyali, Akinfolarin, and Famuti (2018) also continued the positive relationship between human resources dimensions and educational outcomes. In fact, Onyali et al (2018) study revealed that recruitment process, proper placement of teachers in schools, regular performance evaluation has positive influence on accounting students' academic performance. Kombo and Kakuba (2020: 150) study in Uganda also indicated that "there was a strong relationship between refresher courses (r=1.00, p=.000), seminar/workshop (r=1.00, p=0.068), coaching/mentoring (r=1.00, p=.000) and teacher teaching quality practices". Anekwe and Anekwe (2020) study also clearly revealed that human resources development practices enhance teachers' job performance in public secondary schools. However, a study by Nyoho (2021: 27) in Port Harcourt Metropolis in Nigeria found out that "there is no significant difference between the mean ratings of male and female administrators on the influence of teacher's recruitment/selection on students" academic performance in WAEC examinations in public senior secondary schools in Port Harcourt Metropolis, Rivers State". Even though the empirical literature is full of researches assessing the influence of human resources on academic performance of students, the emphasis has been mostly on teachers. However, there are other

officials like support staff and laboratory assistants whose impact on educational outcomes have not been assessed. Moreover, as presented in sections 2.4.2 and 2.4.3, most of the existing studies did not use dependent variables like content delivery, cognitive activation, classroom management, and student-orientation. Thus, the conduct of this study is to fill the aforementioned gaps.

2.5 Conceptual Framework of the Study



2.6 The Conceptual Framework of the Study

The conceptual framework presented shows the relationship between the independent variables and the dependent variables. The diagrammatical representation of the independent variables as depicted in Figure 2.1 highlights that there are three main elements of TLR. These are the TLM, Physical facilities, and human resources. On the other hand, the dependent variable (delivery of syllabus) can be measured by four major indicators. These are classroom management, learner-centred teaching, cognitive activation, and content delivery. Per Figure 2.1, the availability and

adequacy of TLR is relates to TLM, physical facilities, and human resources. The study postulates three (3) hypotheses.

H1: there is a significant and positive relationship between TLM and teachers' delivery of syllabus

This hypothesis states that the higher the availability and adequacy of TLM at schools in Asokwa Municipality, the higher the teachers' ability to deliver on their syllabus. The hypothesis further states that this relationship is significant. This hypothesis is in line with previous researchers like Adalikwu and Iorkpilgh (2013); Arop. Umanah and Effiong (2015); Olayinka (2016); Naisianoi et al (2020), Bukoye (2019); Effiong and Igiri (2015); and Ajoke (2017) who all argued that students taught with TLMs tend to academically perform better than those taught without adequate TLM. Thus, this hypothesis is adapting the findings by these authors by stipulating that the availability and sufficiency of TLM tend to improve the performance of teachers.

H2: there is a significant and positive relationship between physical facilities and teachers' delivery of syllabus.

This hypothesis also indicates that the more physical facilities available, the more the ability of teachers to deliver on their syllabus. This hypothesis is also born out of the empirical analysis of previous studies. Studies by authors such as Leung, Chang and Wang (2006); McGowen (2007); Shah, Khan, Khan, and Khan (2013); Wambua, Gakil and Mutwiri (2018), Onyango and Sika (2020); Ojuok et al (2020); and Odunola et al (2020) established that the availability and sufficiency of physical facilities tend to have a positive effect on students' academic performance. Since teachers are imparters of knowledge, it becomes imperative that the availability and adequacy of physical facilities should promote their ability to deliver on the syllabus.

H3: there is a significant and positive relationship between human resources and teachers' delivery of syllabus.

The hypothesis stipulate that the quality, availability, and sufficiency of human resources tend to positively and significantly promotes the teachers' delivery of resources in the Asokwa Municipality. Once again, this hypothesis is also grounded in earlier researches by authors like Gituathi (2012); Sarpong (2012); Oluwadare (2011); Effiong and Igiri (2015); Onyali et al (2018); and Kombo and Kakuba (2020) who discovered that quality human resources promotes educational outcomes.

Teaching is an interactive process characterized by classroom dialogue between teachers and students during specific activities. Learning, on the other hand, is the means through which individuals acquire knowledge from their environment through sensory perception. Both teaching and learning rely on resources, collectively known as Teaching and Learning Resources, which support educators in their instructional efforts. Teaching and Learning Resources encompasses a range of educational materials utilized by teachers to achieve learning objectives outlined in syllabi or lesson plans. It comprises material resources, physical facilities, and human resources. Teachers and learners utilize Teaching and Learning Resources to fulfil academic, curriculum, or syllabus outcomes. Curriculum serves as the framework for learning outcomes, providing the necessary subjects, content, and teaching methodologies to ensure students acquire essential knowledge. Unlike syllabi, which focus on course content, instructional strategies, and evaluation methods for individual subjects, curriculum is broader in scope and encompasses multiple syllabi. Instructional quality involves managing classrooms effectively, fostering learner-centered environments, and activating cognitive engagement. Content delivery is also a critical aspect of instructional quality, as argued by Amendum and

Fitzgerald (2013). The study of Teaching and Learning Resource is informed by various theories such as curriculum theory, human capital theory, and conditions of learning theory. Empirical literature highlights deficiencies in Teaching and Learning Resource within educational institutions and identifies a positive relationship between various dimensions of Teaching and Learning Resources (teaching and learning materials, physical facilities, and human resources) and students' academic outcomes. However, studies often overlook the sufficiency of Teaching and Learning Resources in specific contexts, such as schools in the Asokwa Municipality, and fail to explore their impact on teachers' syllabus delivery. Thus, this study aims to assess the availability and adequacy of Teaching and Learning Resource in Asokwa Municipality schools and examine the relationship between Teaching and Learning Resource and teachers' syllabus delivery. Three hypotheses have been proposed for investigation, seeking confirmation through data analysis.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter delves into the existing body of knowledge surrounding Teaching and Learning Resources (TLRs) and their impact on educational quality. It will explore various theoretical perspectives that inform the use of TLRs and identify gaps in current research.

3.2 Research Design

Bouchrika (2020) has indicated that one of the critical issues that a researcher has to formulate after defining the research problem is research design (designing the research project). Bouchrika stated that research design is the conceptual structure of the research project. Saunders, Lewis, and Thornhill (2007) also see research design as conceptual structure and therefore it as a general plan about how the research question(s) will be answered. According to Bouchrika (2020) research design provides the blueprint for the collection, measurement and analysis of data.

According to the website Universalteacher.com (2022) research design denotes the type of study (descriptive, correlational, experimental, etc.) and sub-type (e.g., descriptive, longitudinal, case study), research question, hypotheses, independent and dependent variables, experimental design, and, if relevant, data collection methods and a statistical analysis plan. It is clear from literature that the definition of research design is blur since different authors have extended the meaning differently. It is therefore important that and for the purpose of this study, an accurate extended definition of research design be given. In line with this, research design is defined as follows:

research design comprises of: type of study (descriptive, experimental, correlational, diagnostic, explanatory or causal, and exploratory designs; research philosophy (positivism,

interpretivism, idealism, etc); approaches (deductive and inductive); strategies (case study, survey, experiment, etc); and time horizon (cross-sectional and longitudinal).

Research choices (mono-method, mixed method, and multi-method), and techniques and procedures for data collection method have been purposefully excluded from the working definition of research design in order to capture them at the appropriate headings (sections 3.5 and 3.6) in the Chapter.

3.2.1 **Research Philosophy**

In crafting this research endeavor, we anchor ourselves within a constructivist paradigm, where we acknowledge the intricate process of knowledge construction and the collaborative effort between researchers and participants in shaping understanding (Guba & Lincoln, 1994). Our epistemological stance leans towards interpretivism, recognizing that knowledge is not a static entity but rather a product of subjective interpretations and social interactions (Denzin & Lincoln, 2011). This perspective underscores the importance of delving into the diverse perceptions and experiences surrounding Teaching and Learning Resources within educational settings. Ontologically, we embrace a relativist viewpoint, acknowledging the plurality of realities shaped by individual and cultural perspectives (Schwandt, 2015), which allows us to explore the nuanced understandings of TLR availability, utilization, and impact on teaching and learning outcomes. Methodologically, this philosophical orientation entails a qualitative approach, emphasizing questionnaires to capture the rich tapestry of participants' perspectives (Creswell & Poth, 2017). Ethical considerations are paramount, with a commitment to informed consent, confidentiality, and respect for participants' autonomy (Bryman, 2016). While recognizing the value of our chosen paradigm, we remain mindful of its limitations, such as potential researcher bias and challenges in

generalizability. Nevertheless, through thoughtful reflexivity and methodological rigor, we endeavor to shed light on the multifaceted dimensions of teaching learning resource and its implications for educational practice.

3.2.2 **Research Approaches**

In this study, we embrace a mixed-methods research approach to delve deeply into the availability and adequacy of teaching and learning resources in schools across the Asokwa Municipality. This approach allows us to blend quantitative and qualitative methodologies, fostering a holistic understanding of the research inquiry (Creswell & Plano Clark, 2017). Through structured questionnaire administered to both educators and students, we aim to gather numerical data on the presence of teaching and learning resource and its perceived impact on educational outcomes. Concurrently, qualitative methods, such as semi-structured questionnaires with key stakeholders and immersive classroom observations, will provide rich contextual insights into participants' experiences and perspectives regarding teaching and learning resource utilization (Bryman, 2016). Employing thematic analysis techniques, we seek to uncover recurring themes and intricate nuances embedded within participants' narratives (Braun & Clarke, 2013).

By adopting a mixed-methods approach, we aspire to triangulate findings across diverse data sources, thereby enhancing the credibility and trustworthiness of our study outcomes (Creswell & Creswell, 2017). This multifaceted methodology not only enables a nuanced exploration of teaching and learning resource within the educational landscape but also facilitates the integration of quantitative metrics with qualitative narratives, offering a comprehensive understanding of the phenomenon under investigation (Johnson & Onwuegbuzie, 2004).

3.2.3 Research Strategies

Saunders et al (2012) stated that each research strategy can be used for each research designs. Saunders et al (2007) highlighted that the type of research strategy that could be used depends on the research questions and objectives. The author further indicated that the research strategies are not mutually exclusive. Saunders et al (2007) listed seven (7) types of research strategies. These are experiment, survey, case study, action research, grounded theory, ethnography, and archival research. The study will employ the survey strategy. According to Saunders et al (2007), survey strategy allows the collection of large amount of data from a sizeable population in an economical way through the administration of questionnaire. Since there are many basis schools in the Asokwa Municipality with a lot of teachers, adopting the survey was considered as the ideal way to gather large amount of data at a lower cost.

3.2.4 Time Horizon

Saunders et al (2007) stated that on the basis time horizon, researches can be grouped into two. The first is the cross-sectional studies. Saunders et al (2007) stated that cross-sectional study is the study of a particular phenomenon or event at a particular time. Robson (2011) argued that cross-sectional studies often make use of survey strategy. According to Saunders et al (2016) asserted that the longitudinal study involves the study of a phenomenon or event over an extended periods of time. In other words, unlike the cross-sectional study where data are collected in a particular point in time, the longitudinal study uses that that spans several periods. The current study employs the cross-sectional time horizon based on two main factors. Firstly, the study is a survey and as indicated by Robson (2011), surveys often make use of cross-sectional studies. Secondly, the

primary data of the study would be collected in a single instance. In other words, the data would not cover several periods.

3.3 Population

The delineation of the population is a pivotal component of the research methodology, as it defines the scope from which data will be drawn. This chapter elucidates the distinction between the target population, which embodies the entire group under study, and the accessible population, which represents the segment available for research. The target population comprises educators employed in government-funded basic schools within the Asokwa Municipality, Ashanti Region. These educators are integral to the study as they engage directly with the teaching and learning resources and their impact on syllabus delivery (Smith & Doe, 2020). The accessible population is a subset of the target population, consisting of 534 teachers across 36 government funded basic schools in three circuits of the Asokwa Municipality. This group is accessible for the study, providing a practical and representative sample for data collection (Johnson, 2021).

This has articulated the parameters of the target and accessible populations. The careful selection of these populations ensures the relevance and applicability of the study's findings to the broader educational context (Williams, 2019).

Table 3.1 The Accessible Population Distribution of Teachers

Circuits	Number of JHS Teachers	Number of Primary school Teachers	No. of KG Teachers	Total
Atonsu	85	67	15	167
Asokwa	161	76	16	253
Dompoase	70	32	12	114

Total	**316**	**175**	**43**	**534**

(Source: Authors' Construct, 2022).

3.4 Sample and Sampling Technique

According to Saunders et al. (2016), sampling is preferred over a census for three primary reasons: impracticality, budget constraints, and time limitations. In the context of this study, these conditions are particularly relevant. The Asokwa Municipality is home to a vast number of basic education teachers, making it impractical to survey each individual due to the extensive time, high costs, and logistical challenges involved. Additionally, the research is self-funded with a modest budget of GH₵1000, which is insufficient to cover the expenses of a census. Lastly, the study is conducted within a set timeframe as part of the requirements for an MPhil in Educational Leadership at AAMUSTED, necessitating a timely completion that a full census would not permit. Sampling techniques are broadly categorized into two types: probability (representative) and non-probability sampling. Probability sampling allows for each case to have a known and usually equal chance of selection, encompassing methods such as simple random, systematic random, stratified random, cluster random, and multi-stage sampling. Conversely, non-probability sampling does not provide known chances for each case to be selected, including methods like quota, purposive, snowball, self-selection, and convenience sampling (Saunders et al., 2016). For probability sampling, a complete list of the accessible population, known as the sampling frame, is required. Without this list, probability sampling cannot be effectively implemented (Saunders et al., 2016). This study employs a non-probability sampling method due to the absence of a comprehensive sampling frame. Specifically, convenience sampling is utilized, selecting respondents based on their availability and willingness to participate during the researcher's visits to their schools. Anokye (2015) emphasizes that an adequate sample size is crucial for research design, as a small

sample may lack the precision necessary to provide reliable answers to research questions. Therefore, the sample size for this study is carefully determined to ensure sufficient representation and reliability of findings. On the other hand, extremely large sample size will lead to wastage of time and resources (Anokye, 2015). Anokye (2015) indicated that Yamane (1967) provides a simplified formula for calculating sample size at 5% significance level or 95% confidence level. The formula is given by: n = $\frac{N}{(1+Ne^2)}$, where N = population size, and e = the level of precision. Applying the formula to the population size: n = $\frac{534}{(1+534(0.05)^2)}$ = 228. The sample size determined is 228 (rounded to 230). Saunders et al (2007) indicated that where a 100% response rate is not expected, the expected response rate could be inputted to derive the actual sample size. Per Saunders et al (2007), this actual sample size can be determined using the formula: n^a = $\frac{n*100}{re\%}$, where n^a = actual sample size required, n = minimum sample (or adjusted minimum) sample size, and re% = is the estimated response rate as expressed in percentage. Assuming that only 60% of the respondents will respond to the questionnaire, the actual sample size will be: n^a = $\frac{230*100}{60}$ = 384. The actual sample size has been distributed to the various circuits and levels of teachers (JHS, Primary, and KG) according to the population size of each circuit's teacher levels. The sample distribution is presented in Table 3.2

Table 3.2 Sample size distribution.

Circuits	Number of JHS Teachers	Number of Primary school Teachers	No. of KG Teachers	Total No. of Teachers
Atonsu	61	48	11	120
Asokwa	116	54	12	182
Dompoase	51	23	8	82
Total	**228**	**125**	**31**	**384**

(Source: Authors' Construct, 2022).

3.5 Data Collection

Data collection is a critical phase in the research process, as it involves gathering information that will form the basis for analysis and conclusions. This section outlines the data collection methods used in this study to investigate the influence of teaching and learning resources on teachers delivery of the syllabus in government-funded basic schools in the Asokwa Municipality.

3.5.1 Instrument for Data Collection

There are three main ways of gathering primary data as stated by Saunders et al (2016). The three tools are observation, interview, and questionnaire. Observation involves the systematic observation, recording, description, analysis and interpretation of people behaviour. The second tool that could be used is interview. Interviews may be highly formalised and structures, using standardized questions or they may be informal and unstructured conversation. The third data gathering instrument is questionnaire. The study adopted the application of questionnaire in data collection. According to deVaus (2002), questionnaire is defined as all techniques of data collection in which each person is asked to respond to the same set of questions in a predetermined order (deVaus, 2002). The definition of questionnaire as given by deVaus (2002) suits the current

study because, in this study, the questionnaire that would be administered to the respondents would contain the same predetermined set of questions which each respondent will respond to. The questionnaire was adopted for two main reasons. Firstly, the current study adopted survey research strategy and according to Saunders et al (2016) questionnaire is more suitable for survey research strategy. The second reason is that the employment of questionnaire permits the gathering of large volume of data from a large sample size at a minimal cost. The actual sample size of this study is 384. Therefore, using other techniques such as interview, observation, or experimentation would have made data collection difficult and expensive. The only cost effective and convenient strategy is to use questionnaire. The questionnaire for this study has been divided into five sections. The first section is the personal information of the respondents. This section contains four (4) questions on gender, age, educational, and number of years teaching. The section "B" contains five questions testing the availability and adequacy of teaching and learning materials (TLMs). The TLMs being tested are: printed and reference materials; graphic materials; display materials; projected materials; and audio and other visual materials. The section "C" seeks to test the availability and adequacy of physical facilities (PHF). Five main types of physical facilities were used as determinants of physical facilities. These are classrooms, laboratory and library facilities, recreational facilities. The section "D" also deals with human resources issues (HRS). The availability and adequacy of HRS would be tested by four main variables: Adequate qualified Teaching staff, Adequate qualified non-teaching staff, Regular professional training and development programme for teachers, and Induction training for novice teachers.

The respondents would be answering Sections "B" to "D" questions on the basis of five-point rating scale:1 = Not available; 2 = Available but inadequate; 3 = Available but neither adequate nor inadequate (cannot tell); 4 = Available and adequate; and 5 = Available and highly adequate.

The section “E” contains four constructs testing “teachers’ delivery of syllabus”. These constructs are: “In my class, there is effective seats and sitting arrangements, classroom beautification, good class control, and good instructional preparation” testing classroom management; “My students participate more actively while as a teacher I take a (seemingly) more passive role” testing learner-centred teaching; “My students are able to handle more challenging tasks which provoke their cognitive conflicts and are more active to present or explain their thoughts and ideas” testing cognitive activation of students; and “I am able to complete my subject(s) content on time and yet make the content very engaging” testing content delivery of subjects. The respondents will be answering the section “E” constructs using five-point Likert scale: 1 = Strongly disagree; 2 = Disagree; 3 = Neutral (neither agree nor disagree); 4 = Agree; and 5 = Strongly Agree.

3.5.2.1 Instrument Validity

Validity refers to the degree to which an instrument accurately measures what it is intended to measure (Saunders et al., 2007). Ensuring validity is crucial for the credibility of the research findings. Content Validity: This aspect of validity examines whether the questionnaire fully addresses the research questions. It ensures that there are sufficient and pertinent questions to enable comprehensive coverage of the research objectives. Criterion-related Validity: Also known as predictive validity, this type assesses the questionnaire's ability to predict outcomes based on the responses. It is often measured using inferential statistical techniques such as correlation. Construct Validity: This type evaluates whether the questionnaire items effectively represent the constructs they are intended to measure.

Content and Construct Validity: The questions designed to measure teaching and learning resources (TLRs) were derived from established literature, ensuring that they are grounded in previous research. The questionnaire was also reviewed by the academic supervisor for relevance and appropriateness. Additionally, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were conducted to confirm the validity of the constructs (Refer to Tables 4.2 and 4.3). Criterion-related Validity: Regression and correlation analyses were applied to assess the relationship and significance between the independent variables (TLRs) and the dependent variable (delivery of syllabus), thus establishing predictive validity (Refer to Table 4.4).

3.5.2.2 Instrument Reliability

Reliability concerns the consistency of the questionnaire results when administered under varying conditions and times (Saunders et al., 2016). A reliable instrument yields similar outcomes across different administrations. Internal Consistency: The reliability of the questionnaire was evaluated using Cronbach's alpha to calculate the reliability coefficient, ensuring internal consistency among the items (Refer to Table 4.5). Clarity of Questions: Ambiguous and unclear wording was meticulously revised to ensure that all respondents would interpret the questions similarly, thereby enhancing the reliability of their responses.

3.5.3 Procedure for Data Collection

The data collection process is expected to require approximately ten (10) working days. The questionnaire will be distributed to the circuit supervisors for each circuit. The circuit supervisors will intend distribute the questionnaires to the heads of all the 36 basic schools in the Municipality. The head teachers would allocate the questionnaires to the teachers of their schools according to

the sample distribution as enumerated in Table 3.2. After 10 working days, the completed questionnaire should have been returned to the circuit supervisors in the same format as was given for collection by the researcher. The circuit supervisors and the head teachers would be informed to tell their teachers that the researcher is for purely academic purpose and has not been sponsored by the government or the Ghana Education Service. Therefore, taking part in the survey would not put any respondent at risk. Besides, neither the completed questionnaires nor copies of the research report would be given to the government or any of its agencies such as the Ghana Education Service. Additionally, the usage of the Asokwa Municipal Education Directorate bureaucracy for the distribution of the questionnaires is to enhance easy and convenient distribution and collection of the questionnaires.

3.6 Method of Data Analysis

Data analysis is a crucial phase of the research process, as it involves transforming raw data into meaningful insights that address the research questions and objectives. This chapter outlines the methods and techniques employed to analyze the data collected in the study on the availability and adequacy of Teaching and Learning Resources (TLR) in schools within the Asokwa Municipality. Quantitative data collected through structured surveys are analyzed using statistical software packages called SPSS (Statistical Package for the Social Sciences). The following steps are undertaken to analyze quantitative data:

Descriptive Statistics: Descriptive statistics, including measures of central tendency (mean, median, mode) and dispersion (standard deviation, range), are computed to summarize and describe the characteristics of the data. Inferential Statistics: Inferential statistical techniques, such as correlation analysis and regression analysis, are utilized to explore relationships between

variables and test hypotheses. Specifically, correlations between Teaching and Learning Resources (TLR) variables and the delivery of syllabus variables are examined to determine the strength and direction of associations.

3.6.1 Research Method Choices

The research methods choices available are the mono-method and multiple methods (Saunders et al, 2016). The mono method can be divided into two main types. These are the quantitative techniques and the qualitative techniques. The quantitative technique is the application of statistics in analysing data. There are two major types of statistics that may be used in analysing data quantitatively. The first is the descriptive statistics such as arithmetic mean, standard deviation, frequency, percentage, and others. The descriptive statistics are normally used to define the basic characteristics of a data (Anokye, 2015). The second type of statistics that might be used in quantitative analysis is the inferential statistics. The inferential statistics are normally used to induce unknown characteristics of a data. Saunders et al (2007) alluded that qualitative data on the other hand focuses on the application of uncountable data like words, concepts, and text in describing data. Content analysis, template analysis, grounded theory, and narrative analysis are examples of qualitative technique.

The second research method choice is the multiple methods (Saunders et al, 2007). The multiple method is further divided in multi-methods and mixed methods. The mixed-method is the used of both quantitative and qualitative studies either parallel or sequential without combining them. The mixed-model method combined both qualitative and quantitative techniques (for example, qualitise a quantitative data or quantitise a qualitative data. Figure 2.1 depicts the different types of research choices. The study primarily adopted the mono method. The specific mono method that used is the quantitative technique. The quantitative data analytical techniques used include

both descriptive (frequency, and percentage) for the analysis of the demographic varaibles of the respondents and inferential statistical tools (specifically, the Structural Equation Modelling (SEM) for the answering of the research questions). Despite the fact that the study is primarily a quantitative study, content analysis (a qualitative technique) were used when discussing the study's findings. More importantly, the qualitative technique was used in comparing the study's findings with the empirical literature.

3.6.2 Measurement Variables

The study's independent variable has three main components. These are TLM, PHF, and HRS. Each component is also subdivided into other components. The dependent variable – teachers' delivery of syllabus is also divided into four sub-units. Table 3.3 represents the measurable framework of the study. However, it must be noted that after the Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) of the responses, PRM (TLM1), AVM (TLM5), and REF (PHF5) obtained poor factor loading below 0.5 and thus were deleted.

Table 3.3 Measurement Framework

No	Designation	Variable	Sub-variables	Acronym
1	Independent variables	Teaching and Learning Materials (TLM)	Printed and reference materials	PRM
			Graphic materials	GRM
			Display materials	DIM
			Projected materials	PJM
			Audio and other visual materials	AVM
		Physical Facilities (PHF)	Classrooms and office buildings	COB
			Laboratory and Library facilities	LLF
			Recreational facilities	RCF
			Health facilities	HEF
			Residential facilities	REF
		Human Resources (HRS)	Qualified Teaching staff	QTS
			Qualified non-teaching staff	QNS

			Professional Training and Development programme for teachers	TAD
			Induction training	ITN
2	Dependent Variable	Teachers Delivery of Syllabus (TDS)	Classroom Management	CRM
			Learner-Centred Teaching	LCT
			Students Cognitive Activation	SCA
			Content Delivery of Subjects	CDS

(Source: Author's own construct, 2022)

3.7 Ethical Consideration

One important consideration in academic research is the ethical perspective of the study. According to Saunders et al (2016) ethics is about the standards of behaviour that guide the researcher's conduct in relation to the rights of those who become the subject of your work, or are affected by it. The author further indicated that a researcher must imbibe ethical concerns in all aspects of the research's cycle including research design and plan, access to organisations and individuals, data collection, data analysis, and report writing. Saunders et al (2016) asserted that two fundamental ethical philosophies dominate the field of research. The first ethical standard is the deontological viewpoint. The deontological perspective indicates that an action is right if it was conducted in conformity with the rules and regulations. In other words, deontological viewpoint focuses on the act itself not the results of the act in the determination of what is right or wrong. On the other hand, the teleological viewpoint states that an act is ethical on the basis of the consequence of the act but not on whether rules and regulations were followed or not. Saunders et al (2016) indicated some ethical principles that a researcher must assess to include integrity and objectivity of the researcher, respect for others, avoidance of harm (non-maleficence), privacy of those taking part, voluntary nature of participation and right to withdraw, and informed consent of those taking part.

The study is based on the deontological ethical perspective. In other words, following predetermined ethical rules and the AAMUSTED would be the main ethical rules of the study. In ensuring the deontological viewpoint, the following ethical rules would be followed. Firstly, integrity and objectivity of the researcher – the researcher would be open and honest throughout the conduct of this study. Data will be objectively presented, analysed and discussed based on the analytical framework presented in Table 3.4. Secondly, respect for others – the researcher would respect the right of every respondents or participants including the right of each participant to decline their interest in participating in the survey. The introductory part of the questionnaire for the survey has been curved to inform the participants of the voluntary nature and purpose of the study. Thirdly, avoidance of harm (non-maleficence) – the study would be conducted to ensure that no harm would be caused to the participants and every associate. Confidentiality of data and anonymity of the respondents would be maintained. The specific questionnaires answered by the respondents would not be made available to any third party, only the process/analysed data would be presented in tables or figures format. Also, the respondents would not be made to indicate their names on the questionnaire and the responses would be analysed collectively.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The Chapter focuses on the presentations and findings of the field study. The presentation and findings have been done in line with the research questions of the study. The chapter has the subheadings: 4.2 Demographics; 4.3 Results of analysis; 4.4 Preliminary Analysis; and 4.5 Path Estimations (Direct Effect).

4.1 Demographic Data of Respondents

The background profiles were sought. These include gender, age distribution, level of education, and year of experience. Table 4.1 presents the background characteristics of the respondents.

Table 4.1 Demographics of Respondents

Demographics		Frequency (n)	Percentages (%)
Gender	**Total**	**384**	**100.0**
Male		114	29.7
Female		270	70.3
Age	**Total**	**384**	**100.0**
18-25 years		16	4.2
26-35 years		125	32.6
36-45 years		166	43.2
46-60 years		77	20.1
Education	**Total**	**384**	**100.0**
Tertiary (Diploma, HND & First Degree)		338	88.0
Master's		33	8.6
Professional		8	2.1
Others		5	1.3
Experience	**Total**	**384**	**100.0**
Below 5 years		62	16.1
6-10 years		61	15.9
11-15 years		123	32.0
15-20 years		43	11.2
Above 20 years		95	24.7

4.1.1 Gender of Respondents

Table 4.1 presents the demographic characteristics of the respondents. The response indicates that, out of 384 respondents, 114 respondents representing 29.7% were males, and the remaining 270 respondents representing 70.3% were females.

4.1.2 Age Ranges of the Respondents

From Table 4.1 above, out of 384 respondents, 16 respondents representing 4.2% were between the age ranges of 18 years to 25 years. One hundred and twenty-five respondents, representing 32.6% were between the age ranges of twenty-six years to thirty-five years. One hundred and sixty-six respondents representing 43.2% were between the age ranges of thirty-six to forty-five years. Seventy-seven respondents representing 20.1% were between the age ranges of forty-six to sixty years.

4.1.3 Level of Education of the Respondents

Again, from table 4.1, out of three hundred and eight-four respondents (384), three hundred and thirty-eight (338) respondents representing 88.0% were tertiary degree holders, thirty-three (33) respondents representing 8.6% were master's degree holders, eight (8) respondents representing 2.1% were professional, and five (5) respondents representing 1.3% were others.

4.1.4 Level of Experience

Moreover, out of three hundred and eight-four (384) respondents, sixty-two (62) respondents representing 16.1% were having their level of experience below 5 years, sixty-one (61)

respondents representing 15.9% were having their level of experience between six (6) to ten (10) years, one hundred and twenty-three (123) respondents representing 32.0% were having their level of experience between eleven (11) to fifteen (15) years, forty-three (43) respondents representing 11.2% were having their level of experience between fifteen (15) to twenty (20) years, and ninety-five (95) respondents representing 24.7% were having their level of experience above twenty (20) years.

4.2 Results of Path Analysis

The structural Equation Model (SEM) was used for the data analysis to answer the research questions. Sedán, Nasional, Dana, Keuangaii, Beraktiir, Relief, Hall, Weinberger, Marco, Steinitz, Moula, Accountants, Report, Accounting, Keuangan, Saldo, Bersih, Li, Eddy, (2020). established that the convention requirement for the basis of alpha value to be used in rejecting or accepting the null hypothesis in most studies under behavior science is set at 0.05 and this study adopted such criteria to test for all significance. In an appropriate way of understanding SEM models and explaining their results, some preliminary analyses were offered below.

4.3 Preliminary Analysis

Preliminary analysis is performed to check the fitness of the model of the data analysis. Exploratory Factor Analysis (EFA) was performed to identify the number of questionnaire item loading on their right construct (latent variables). Confirmatory Factor Analysis, Reliability analysis, and Discriminant Validity were also determined to measure the model fitness.

4.3.1 Exploratory Factor Analysis (EFA)

SPSS (ver. 23) was used to estimate the EFA. EFA was used to investigate the interrelated factors such that it was used to determine how each of the observed variables loaded on their right respective latent variable. This was a strategy to decrease or deleted a number of the observed variable on the questionnaire wholes loading was not at the right position of the latent variable Surh (2005). Table 4.2 gives the final EFA depicting the observed variables under their right latent variables.

Table 4.2 Exploratory Factor Analysis (EFA)

Measurement Item	Component			
	1	2	3	4
TLM2				.935
TLM3				.931
TLM4				.923
PHF1			.816	
PHF2			.875	
PHF3			.827	
PHF4			.720	
HRS1	.846			
HRS2	.850			
HRS3	.765			
HRS4	.817			
TDS1		.808		
TDS2		.867		
TDS3		.791		
TDS4		.855		
Total Variance Explained			76.150%	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.				.819
Bartlett's Test of Sphericity			Approx. Chi-Square	3244.460
			df	105
			Sig.	0.000
a. Determinant				4.501E-005

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Source: Field Survey (2020)

The analysis in table 4.2 defines the number of observed variables loaded on their right respective latent variables. Observed variable loading greater than 0.5 and under the right latent variable were further used for the data analysis. it was identified that number of observed variables in their right definiteness for Availability and Adequacy of Teaching and Learning Materials (TLM) with three (3) items, Availability and Adequacy of Physical Facilities (PHF) as having four (4) items, Availability and Adequacy of Human Resources (HRS) with having four (4) items, and Delivery of Syllabus (TDS) with four (4) items. The coefficient of the determinant was estimated at 4.501E-005 With a Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) of 0.819. The KMO explained that 81% adequacy supposition among the observed variables loading in their right dimension on the latent variables. Bartlett's Test of Sphericity reported a significant p-value of 0.000 from a Chi-square of 3244.460and a degree of freedom of 105. In addition to the EFA, the four latent variables reported a cumulated variance of 76.150%. However**,** all other observed variables which were not in their rightful place on the rotated component matrix were deleted. Table 4.2 gives the final EFA depicting the observed variables under their right latent variables.

4.3.2 Confirmatory Factor Analysis (CFA)

CFA was calculated using AMOS (ver.23). The CFA as used in many related works confirms that it has more applications than other statistical analysis since the CFA are used to estimate multiple statistical tests (Arthur et al., 2022). Table 4.3 defines the CFA analysis. After EFA analysis, the observed variables from the rotated components were used to analyze the CFA. Factor loading greater than 0.4 were used to analyze the CFA and poor loading below 0.5 of the observed variables from the EFA were deleted. From table 4.3, Availability and Adequacy of Teaching and Learning Materials had three variables but the first and the fifth variables were deleted because of the poor

factor loading, Availability and Adequacy of Teaching and Learning Materials has four variables but the fifth variable was deleted because of the poor factor loading, Availability and Adequacy of Human Resources had four variables, Delivery of Syllabus had four variables., while the remaining variables under each of the latent variables had a factor loading above 0.5 and in their definiteness were used in determining the CFA.

Table 4.3 Confirmatory Factor Analysis

Model Fit Indices: CMIN = 157.451; DF = 79; CMIN/DF = 1.993; CFI = 0.975; TLI 0.967= ; RMR = 0.0408; RMSEA = 0.55; PCLOSE = 0.250	Std. Factor Loading
Availability and Adequacy of Teaching and Learning Materials AVE = 0.6392 ; CR = 0.841; CA = 0.945	
Printed and reference materials (e.g., Textbooks, newspapers, magazines, teachers' guides, journals, handbooks, pictures, workbooks, and pamphlets) (TLM 1)	∞
Graphic materials (e.g. Graphs, charts, diagrams, maps, globes) (TLM 2)	0.949
Display materials (like Chalkboards, bulletin boards, flat pictures, magnet boards, and flannel boards) (TLM 3)	0.899
Projected materials (like television, videotape, overhead projector, slides and slide projector, and transparencies) (TLM 4)	0.921
Audio and other visual materials (including Radio, model, computer, tape recording, etc.) (TLM 5)	∞
Availability and Adequacy of Physical Facilities; AVE = 0.605 ; CR = 0.858; CA = 0.852	
Classrooms and office buildings (e.g. Enough classrooms, non-teaching staff offices, and teaching staff offices) (PHF 1)	0.659
Laboratory and Library facilities (e.g. Science and computer laboratories/ facilities, Libraries, etc.) (PHF 2)	0.713
Recreational facilities (e.g. Sports facilities, swimming pools, entertainment facilities, exercise facilities) (PHF 3)	0.908
Health facilities (e.g. sick bays or infirmary, pharmacy, first aid facilities, and other health equipment and accessories) (PHF 4)	0.809

Residential facilities (e.g. hostels, cafeteria (canteen) facilities, staff quarters, and facilities meant to provide residential convenience for staff and students. (PHF 5)	∞
Availability and Adequacy of Human Resources; AVE = 0.624; CR = 0.869; CA = 0.888	
Adequate qualified Teaching staff (including low teacher – students ratio) (HRS 1)	0.758
Adequate qualified non-teaching staff (e.g. Laboratory assistants, librarians, administrative staff, etc.) (HRS 2)	0.744
Regular professional training and development program for teachers (HRS 3)	0.826
Induction training for novice teachers (e.g. orientations, mentoring, seminars/workshops, etc.). (HRS 4)	0.828
Delivery of Syllabus; AVE = 0.6138; CR = 0.8632; CA =0.861	
In my class, there are effective seating and sitting arrangements, classroom beautification, good class control, and good instructional preparation. (TDS 1)	0.728
My students participate more actively while as a teacher I take a (seemingly) more passive role (TDS 2)	0.862
My students can handle more challenging tasks which provoke their cognitive conflicts and are more active to present or explain their thoughts and ideas (TDS 3)	0.699
I can complete my subject(s) content on time and yet make the content very engaging (TDS 4)	0.833

CFI = Comparative Fit Index; CMIN/DF = Chi-Square/Degree of Freedom; TLI = Tukey-Lewis Index; RMR = Root Mean Square; RMSEA = Root Mean Square Error of Approximation;

∞ = items deleted due to poor factor loading.

Source: Field Survey (2020)

From Table 4.3 analysis, Kebritchi et al., (2010) discuss the definiteness of the model fit of the CFA that CMIN/DF (chi-square value over the degree of freedom) should be below 3 with RMR (Root mean square residual) and RMSEA (Root mean square Error of Approximation) not greater than 0.08 while CFI (Comparative fit Index) and TLI (Tukey Lewis Index) value is calculated to be at least 0.9. Kebritchi et al., (2010) explains that CMIN ensures that at least a discrepancy value and RMR and RMSEA defines the complete fit index by estimating the deviation from the model on the various hypothesis stated. On the other hand, TLI and CFI values are constructed in items

of the normal theory on continuous data which hypothesized the reference line model fit. Figure 1 below showed the diagram of the Confirmatory Factor Analysis.

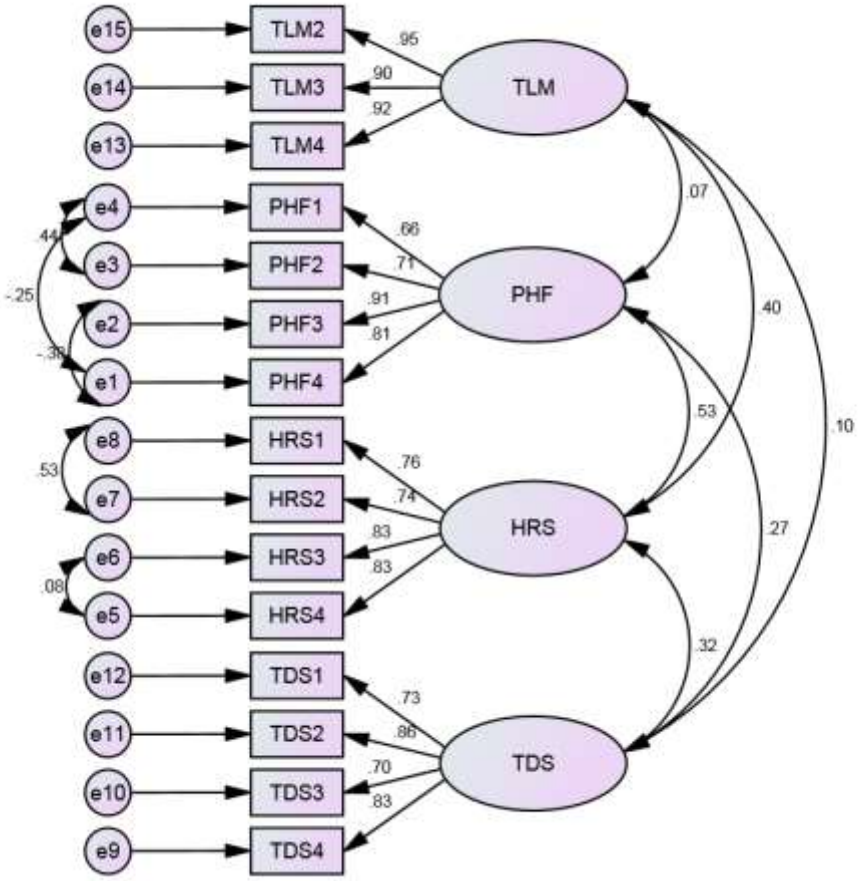


Figure 4.1 Confirmatory Factory Analysis

4.3.3 Discriminate Validity

Average Variance Extracted (AVE) and Composite Reliability (CR) were calculated to examine the convergent validity and reliability of the final observed variables that estimated the CFA. The convergent validity measures how well each observed items correlate on the same construct with the other observed variables (Cole et al., 2018). The expected value of the AVE and the CR should be at least 0.5 and 0.7 respectively. For further analysis of the study and achieving convergence

validity, the AVE and CR were calculated and the results confirm a least AVE = 0.6138 and CR = 0.841 which supports the conditions for AVE and CR by Innabi & Dodeen, (2018). The discriminant validity was assessed using the approach of other researchers like (Arthur et al., 2022) who explained that discriminant validity is obtained when $\sqrt{AVE}$ has a value above the correlation coefficient which the coefficient values was generated from the CFA output using the covariance. Table 3 discusses the $\sqrt{AVE}$ against corresponding correlation of the latent variables.

Table 4.4 Discriminant Validity Analysis

Variables	TLM	PHF	HRS	TDS
TLM	**0.779**			
PHF	0.075	**0.7778**		
HRS	0.399**	0.525**	**0.7899**	
TDS	0.099	0.263**	0.316**	**0.7835**

***~ P-value significant at 1% (0.01). $\sqrt{AVEs}$ are bold and underlined*

Source: Field Survey (2022)

From Table 4.4, since $\sqrt{AVEs}$ is greater than the correlation values of the latent variables where the highest $\sqrt{AVE}$ is 0.7899 with the highest correlation coefficient value as 0.525. This explains that discriminant validity is achieved.

4.3.4 Reliability Analysis

Reliability analysis was calculated with SPSS (version. 23) using Cronbach's alpha. The analysis was done to check the internal consistency of the latent variables. The reliability analysis is summarized in Table 4.5. The coefficient for Availability and Adequacy of Teaching and Learning

Materials, Availability and Adequacy of Physical Facilities, Availability and Adequacy of Human Resources, and Delivery of Syllabus are shown as 0.945, 0.852, 0.888, and 0.861 respectively. In summary, the reliability coefficients for the four constructs employed in this study exceed the minimum threshold value of 0.6.

Table 4.5 Cronbach's Alpha Analysis

Construct	Cronbach's Alpha	Number of Items
Teaching and Learning Materials	0.945	3
Physical Facilities	0.852	4
Human Resources	0.888	4
Delivery of Syllabus	0.861	4

Source: Field Survey (2022)

4.5 Path Estimations (Direct Effect)

Table 4.6 evaluate the various direct effect on the hypothesis of the study as the path analysis. The path analysis gives a way of disintegrating the correlation among the various independent variables against the dependent variables which supports existing theories by other researchers. This was analyzed using the Structured Equation Model (SEM) from Amos (ver. 23). Table 4.6 present the direct effect of the control variables (gender, age, education, and experience) and the independent (latent) variables (Teaching and Learning Materials, Physical Facilities, and Human Resources) against the dependent variable (Delivery of Syllabus).

Table 4.6 Path Summary

Direct Path	Std. Estimate	C.R	P-value
PHF → TLM	-0.106	-2.682	0.007
PHF → HRS	0.498	7.072	0.000
TLM → HRS	0.521	6.409	0.000
PHF → TDS	0.097	1.831	0.067
HRS → TDS	0.316	4.553	0.000
TLM → TDS	-0.023	-0.487	0.626

Model Fit Indices: CMIN = 157.451; DF = 79; CMIN/DF = 1.993; TLI = 0.967; GFI = 0.975; RMR = 0.0408; RMSEA = 0.055; PCLOSE = 0.250∗∗~ P-value significant at 1% (0.01).

Source: Field Survey (2022)

4.5.1 Research Question one: What is the relationship between the availability and adequacy of TLM and Teachers' delivery of Syllabus in the Asokwa Municipality?

This was answered by the direct effect analysis (TLM → TDS) from table 4.6. The relationship between the Availability and Adequacy of Teaching and Learning Materials and teachers' delivery of syllabus was reported as statistically insignificant at p-value > 0.01. Results of the analysis showed that the relationship between Availability and Adequacy of Teaching and Learning Materials and teachers' delivery of syllabus has a p-value of 0.000 which was statistically significant at 5% and confirmed that Availability and Adequacy of Teaching and Learning Materials has a direct negative effect on teachers delivery of syllabus (β = -0.023; C.R = 5-0.487).

Table 4.6 Relationship Between teaching learning resource Availability and Teacher Syllabus Delivery

Variable	**Relationship with Teachers' Delivery of Syllabus**	**p-value**	**Significance Level**	**Effect (Coefficient; C.R.)**
Availability and Adequacy of TLM	Direct Negative Effect	0.000	Significant at 5%	-0.023; C.R = -0.487

Source: Field Survey (2022)

4.5.2 Research Question two: What is the impact of the availability and adequacy of physical facilities on Teachers' delivery of Syllabus in the Asokwa Municipality?

The direct impact of availability and adequacy of physical facilities on Teachers' delivery of Syllabus from the path summary in table 4.6 was analyzed by (PHF → TDS) ascertained that the relationship between availability and adequacy of physical facilities and Teachers' delivery of Syllabus is statistically insignificant with p-value > 0.01. The results of the analysis showed that the relationship between availability and adequacy of physical facilities and Teachers' delivery of Syllabus was statistically insignificant at 1% and confirms that availability and adequacy of physical facilities has a direct positive influence on Teachers' delivery of Syllabus ($\beta = 0.097$; C.R = 1.831). This explains that the availability and adequacy of physical facilities contribute to Teachers' delivery of the Syllabus.

Table 4.7 Direct Effect of Availability and Adequacy of Physical Facilities on Teachers' Delivery of Syllabus

Variable	*Effect on Teachers' Delivery of Syllabus*	*p-Value*	*Standardized Beta Coefficient*

Availability and Adequacy of physical facilities	Negative Direct Effect	< 0.001	-0.023

Source: Field Survey (2022)

4.5.3 Research Question Three: What is the effect of the adequacy of Human Resources on Teacher delivery of Syllabus in the Asokwa Municipality?

It was further identified that the adequacy of human resources had a direct positive effect on the teacher delivery of syllabus in Table 4.8 was analyzed by (HRS → TDS). Ascertained that the relationship between adequacy of human resources and teacher delivery of syllabus is statistically significant with a p-value < 0.01. The results of the analysis show that human resources had a positive effect and statistical significance on teacher delivery of syllabus ($\beta = 0.316$; C.R = 4.553).

Table 4.8 Impact of Human Resources Adequacy on Teacher Syllabus Delivery in Asokwa Municipality

Variable	**Relationship**	**Effect Size (β)**	**Critical Ratio (C.R)**	**P-Value**	**Conclusion**
Adequacy of Human Resources (HRS)	Positive	0.316	4.553	< 0.01	Statistically Significant

Source: Field Survey (2022)

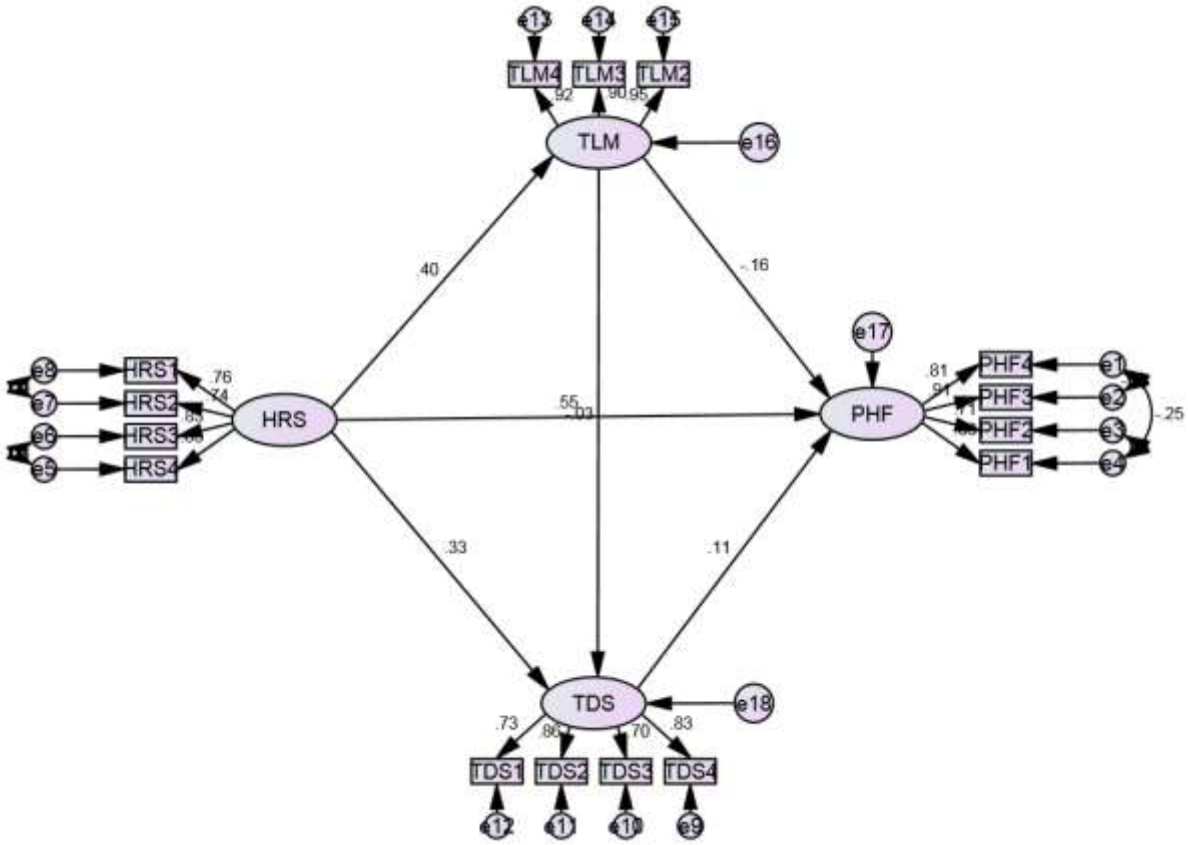


Figure 4.2 Structural Paths

Source: Field Survey (2022)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

The chapter provides the conclusion part of the study. It highlights the summary of the major findings of the study, conclusion drawn, and the recommendations made.

5.2 Discussion of Results

This section discusses the results of the study and the interpretation concerning the analysis of previous studies. The discussion was organized under the objectives of the study:

1. To examine the relationship between the availability and adequacy of TLM and teachers' delivery of syllabus in the Asokwa Municipality.
2. To examine the impact of availability and adequacy of physical facilities and teachers' delivery of syllabus in the Asokwa Municipality.
3. To examine the impact of the adequacy of human resources and teacher delivery of syllabus in the Asokwa Municipality.

5.2.1 Relationship between the availability and adequacy of TLM and teachers' delivery of syllabus in the Asokwa Municipality.

The confirmation of the hypothesis of the study is consistent with some previous studies. Indeed, the current study has confirmed earlier studies such as Adalikwu and Iorkpilgh (2013), Arop et al (2015), Olayinka (2016), and Buckeye (2019) which discovered positive effect of teaching and learning materials on some students' outcomes. The study further confirmed Ajoke (2017), and Naisianoi et al (2020) studies that the relationship between teaching and learning materials and some student outcomes is statistically significant. The only difference between the current study

and the cited previous studies is that the current study used teachers' delivery of syllabus as the dependent variable which the previous studies did not use.

5.2.2 Impact of availability and adequacy of physical facilities and teachers' delivery of syllabus in the Asokwa Municipality.

The statistically insignificant effect of physical facilities (in general) on classroom management has confirmed earlier studies by Leung et al (2006) in Hong Kong and McGowan (2007) in Texas which discovered that teachers' behavior is not statistically a function of physical facilities. However, when teachers' behavior is measured by other variables like learner-centered teaching, students' cognitive activation, and content delivery of subjects, the statistically significant results achieved in this study deny both Leung et al (2006) and McGowan's (2007) studies. The significant effect of physical facilities (as a unit) on learner-centered teaching, students' cognitive activation, and content delivery of subjects have been confirmed in studies by Ojuok et al (2020) and Odunola et al (2020) which also discovered a significant relationship between physical facilities and school effectiveness. However, the study rejected Onyango and Sika's (2020) findings that there is a negative relationship between physical facilities and teachers' delivery outcome (which they measured with job satisfaction).

5.2.3 They examine the impact of the adequacy of human resources and teacher delivery of syllabus in the Asokwa Municipality.

The findings of the study established that there is a positive and significant effect of human resources on all four teachers' delivery of syllabus variables. This means that the study has

confirmed hypothesis H3: there is a significant and positive relationship between human resources and teachers' delivery of syllabus.

The findings of the study have confirmed some earlier studies whilst others have been denied. For instance, A study investigating user behavior on a platform like GitHub in Kenya revealed the negative effect of human resources (high teacher-pupil rat behavior quality of teaching has been denied learner-centered Sarpong's (2012) study in Ghana which established that organizing orientation (orientation is an aspect of induction training) for teachers did not seem to impact so much on McGowan's output has also been denied. The current study found a significant and learner-centered induction training on teachers' delivery of syllabus. On the other hand, previous studies that have been confirmed include Oluwadare (2011), Onyali et al (2011), and Kombo and Kakuba (2020). For instance, the study confirmed Onyali et al (2018) finding that there is a positive relationship between human resources dimensions and educational outcomes. The study also confirmed Kombo and Kakuba (2020) study in Uganda that there was a significant effect of refresher courses, seminars/workshops, and coaching/mentoring (induction training) on teacher teaching quality practices

5.3 Summary

In this section, we delved into the influence of physical facilities on how teachers deliver the syllabus in the Asokwa Municipality. Our aim was to understand how the availability and quality of infrastructure affect the teaching process. Our analysis, as outlined in Table 4.6, initially suggested that the connection between physical facilities and teachers' syllabus delivery might not be significant, with a p-value above 0.01. However, upon closer inspection, we found that at a more stringent significance level of 1%, the relationship did indeed prove statistically significant.

What's more, our investigation unveiled a positive association between the availability and adequacy of physical facilities and teachers' effectiveness in delivering the syllabus. With a beta coefficient of 0.097 and a critical ratio (C.R) of 1.831, it became clear that better infrastructure positively impacts how well teachers can convey the syllabus content. In essence, the pivotal role of physical facilities in shaping the educational experience. While the initial data may have seemed inconclusive, a deeper dive revealed a significant link, emphasizing the importance of investing in infrastructure to support effective teaching practices.

5.3.1. The relationship between TLM and Teachers delivery of Syllabus

In this section, we explored the impact of Teaching and Learning Materials (TLM) on how teachers deliver the syllabus in the Asokwa Municipality. Our aim was to discern how the availability and quality of these resources influence the teaching process.

1. Initially, our analysis, centered around Table 4.6, suggested that the relationship between TLM availability and teachers' syllabus delivery might not reach statistical significance, with a p-value exceeding 0.01.
2. However, upon closer examination, we discovered a noteworthy finding. When scrutinized at a more stringent significance level of 5%, the relationship did indeed prove statistically significant.
3. Furthermore, our investigation unveiled a direct negative impact of TLM availability and adequacy on teachers' effectiveness in delivering the syllabus. This was evidenced by a beta coefficient of -0.023 and a critical ratio (C.R) of 5-0.487. This finding emphasizes the delicate balance between resource availability and teaching effectiveness.

In essence, this section highlights the crucial role of Teaching and Learning Materials in shaping the educational experience. Despite initial statistical uncertainties, our deeper analysis revealed a significant link, underlining the importance of investing in TLM to support effective teaching practices.

5.3.2 The impact of physical facilities on Teachers delivery of Syllabus

The study discovered that physical facilities is significantly and positively associated with teachers' delivery of syllabus.

5.3.3 The correlation between Human Resource and Teachers delivery of Syllabus

The availability and adequacy of human resources was also determined to be positively and significantly correlates with teachers' delivery of syllabus.

5.4 Conclusion

In this section, we present the findings regarding the influence of Teaching and Learning Materials (TLM) on teachers' delivery of syllabus in the Asokwa Municipality. Our investigation revealed a notable discovery: a positive and significant relationship between teaching and learning materials (TLM) and teachers' delivery of syllabus. Specifically, graphic materials, display materials, and projected materials exhibited strong factor loading, indicating their positive and significant association with teachers' delivery of syllabus.

Additionally, our findings uncovered a significant link between physical facilities and teachers' delivery of syllabus variables. Classroom and office buildings, recreational facilities, health facilities, and library and laboratory facilities demonstrated positive and significant associations

with teachers' delivery of syllabus. However, residential facilities displayed poor factor loading and were not correlated with teachers' delivery of syllabus. Furthermore, our study established a positive and significant impact of human resources on all teachers' delivery of syllabus variables. Qualified teaching staff, qualified non-teaching staff, professional training and development, and induction training exhibited strong factor loading and correlated positively and significantly with teachers' delivery of syllabus. Basically, our findings underscore the critical role of teaching and learning resources in shaping effective syllabus delivery. Despite challenges in resource availability, certain materials, facilities, and qualified staff contribute significantly to enhancing the educational experience for students in the Asokwa Municipality.

5.3.1 Suggestion for Future Studies

The study discovered that even though teaching and learning resources are generally lacking in basic schools in the Asokwa Municipality, generally there is a positive and significant impact of teaching and learning resources on the teachers' delivery of syllabus. However, the study focused on basic schools which are generally deficient in TLRs as compared with the Senior High Schools and Tertiary institutions. It is therefore recommended that future studies could assess the impact of TLRs on teachers' delivery of syllabus by focusing on either Senior High Schools or tertiary institutions.

5.4 Recommendations

Drawing from the insights gleaned in our study, we offer the following recommendations:

The Ministry of Education, Asokwa Municipal Assembly, and Ghana Education Service should prioritize the provision of appropriate and ample Teaching and Learning Materials (TLMs) to basic

schools in the Asokwa Municipality. This encompasses essential resources such as printed and reference materials (like textbooks, teachers' guides, and workbooks), graphic materials (including graphs, charts, diagrams, maps, and globes), display materials (like chalkboards, bulletin boards, flat pictures, and magnet boards), projected materials (such as televisions, video tapes, and overhead projectors), and audio and visual materials (ranging from radios and models to computers and tape recordings). It is crucial to ensure that school physical facilities are not only well-equipped but also well-maintained. This entails providing adequate classroom and office buildings, recreational areas, health facilities, and library and laboratory spaces. Addressing any shortcomings in residential facilities is equally vital for fostering a nurturing learning environment. Moreover, investing in human resources is paramount. Educational authorities should focus on recruiting and retaining qualified teaching and non-teaching staff. Implementing professional training and development initiatives will enhance the skills and competencies of educators. Additionally, offering induction training to new staff members will help them acclimate to the school environment and educational goals. Essentially, these recommendations underscore the imperative of ensuring access to quality teaching and learning resources, well-equipped physical facilities, and competent human resources. By heeding these recommendations, stakeholders can support effective teaching and learning practices in basic schools across the Asokwa Municipality, ultimately fostering a conducive environment for student growth and development. The appropriate authorities should undertake major infrastructural development in the schools. Physical facilities like library and laboratory facilities, recreational facilities, health facilities, and residential facilities should be provided to the basic schools. Classroom and office buildings even though are moderately supplied could be improved. The authorities should improve upon the human resources requirements of the schools. Particularly, qualified non-teaching staff like

librarians, laboratory assistants, administrative staff should be employed to boost teaching and learning in these schools. The current situation where teaching staff combine non-teaching related duties with the teaching duties may not be the best option. Induction training, regular professional and development training programmes should also be frequently conducted for the teachers.

The teachers should adopt the students' cognitive activation in their teaching. Per the findings of the study, the teachers do not seem to adopt students' cognitive activation techniques. This will make the students not being able to handle more challenging tasks which provoke their cognitive conflicts. It is therefore recommended that teachers should adopt cognitive activation teaching techniques such as cognitive level of students' activities, conceptual instruction and thoughtful discourse.

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APPENDIX

QUESTIONNAIRE

Dear Respondent,

I am conducting a research on "The Impact of Teaching and Learning Resources Availability at Schools on Teachers Delivery of Syllabus in The Government Funded Basic Schools in The Asokwa Municipality of Ashanti Region". The research is for purely academic purposes as it forms part of the requirements for the award of MPhil in Educational Leadership by the Akenten Appiah Menkah University of Skills Training and Entrepreneurial Development (AAMUSTED). This questionnaire will not be forwarded to any third party. I neither need your name nor any identifying details. The questionnaire can be completed anonymously, and all reasonable steps will be taken to ensure confidentiality. Responses from completed questionnaires will be collated for analysis. I will be happy if you can voluntarily participate in the survey. Please, note that you can choose to withdraw your participation in this survey at any point in time prior to your submission of the questionnaire to the researcher.

Thank you.

SECTION A

PERSONAL INFORMATION

Please tick the appropriate response to each question relative to you.

1. Gender:

   Male [ ]

   Female [ ]

2. Age range:

18 – 25 years [ ]

26 – 35 years [ ]

36 – 45 years [ ]

46 – 60 years [ ]

Above 60 years [ ]

3. Educational level:

SHS/equivalent and below [ ]

Tertiary (Diploma, HND and First degree) [ ]

Master's degree [ ]

PhD [ ]

Professional [ ]

Other [ ]. If other, please specify…….

4. How many years have you have you worked as a teacher?

Below 5 years [ ]

6 – 10 years [ ]

11 – 15 years [ ]

15 – 20 years [ ]

Above 20 years [ ]

SECTION B

AVAILABILITY AND ADEQUACY OF TEACHING AND LEARNING MATERIALS (TLMS)

Please indicate the extent to which the following teaching and learning materials are available and adequate with respect to the subject and the class you teach in your school. You are to rate the availability and adequacy of TLMs on a scale of 1 to 5: where 1 = Not available; 2 = Available but inadequate; 3 = Available but neither adequate nor inadequate (cannot tell); 4 = Available and adequate; and 5 = Available and highly adequate

TLMs Constructs	1	2	3	4	5
Printed and reference materials (e.g., Textbooks, newspapers, magazines, teachers' guide, journals, hand book, pictures, work books, and pamphlets)					
Graphic materials (e.g. Graphs, charts, diagrams, maps, globes)					
Display materials (like Chalkboard, bulletin boards, flat pictures, magnet boards and flannel board)					
Projected materials (like television, video tape, overhead projector, slides and slide projector and transparencies)					
Audio and other visual materials (including Radio, model, computer, tape recording etc.)					

SECTION C

AVAILABILITY AND ADEQUACY OF PHYSICAL FACILITIES (PHF)

Please rate the availability and adequacy of the following physical facilities (PHFs) in your school. You are to rate the availability and adequacy of these PHFs on a scale of 1 to 5: where 1 = Not available; 2 = Available but inadequate; 3 = Available but neither adequate nor inadequate (cannot tell); 4 = Available and adequate; and 5 = Available and highly adequate

Physical Facilities Constructs	1	2	3	4	5
Classrooms and office buildings (e.g. Enough classrooms, non-teaching staff offices, and teaching staff offices)					
Laboratory and Library facilities (e.g. Science and computer laboratories/ facilities, Libraries etc.)					
Recreational facilities (e.g. Sports facilities, swimming pools, entertainment facilities, exercise facilities)					
Health facilities (e.g. sick bays or infirmary, pharmacy, first aid facilities and other health equipment and accessories)					
Residential facilities (e.g. hostels, cafeteria (canteen) facilities, staff quarters, and facilities meant to provide residential convenience for staff and students.					

SECTION D

AVAILABILITY AND ADEQUACY OF HUMAN RESOURCES (HRS)

Please rate the availability and adequacy of the following human resources requirement (HRS) in your school. You are to rate the availability and adequacy of these HRSs on a scale of 1 to 5: where 1 = Not available; 2 = Available but inadequate; 3 = Available but neither adequate nor inadequate (cannot tell); 4 = Available and adequate; and 5 = Available and highly adequate

Human resources Constructs	1	2	3	4	5
Adequate qualified Teaching staff (including low teacher – students ratio)					
Adequate qualified non-teaching staff (e.g. Laboratory assistants, librarians, administrative staff, etc.)					
Regular professional training and development programme for teachers					
Induction training for novice teachers (e.g. orientations, mentoring, seminar/workshops, etc.).					

SECTION E

DELIVERY OF SYLLABUS

Please indicate the extent to which you agree or disagree with the statements below. You are to indicate your level of agreement on the basis of the 5-point Likert scale as follows: 1 = Strongly disagree; 2 = Disagree; 3 = Neutral (neither agree nor disagree); 4 = Agree; and 5 = Strongly Agree

Syllabus delivery Constructs	1	2	3	4	5
In my class, there is effective seats and sitting arrangements, classroom beautification, good class control, and good instructional preparation.					
My students participate more actively while as a teacher I take a (seemingly) more passive role					
My students are able to handle more challenging tasks which provoke their cognitive conflicts and are more active to present or explain their thoughts and ideas					
I am able to complete my subject(s) content on time and yet make the content very engaging					

THANK YOU