

AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND
ENTREPRENEURIAL DEVELOPMENT

INFLUENCE OF PERCEIVED INSTRUCTIONAL STRATEGIES ON
STUDENTS' ACADEMIC PERFORMANCE IN PUBLIC JUNIOR HIGH
SCHOOLS AT EJISU MUNICIPALITY



**A Dissertation in the Department of Educational Leadership, Faculty of
Education and Communication Sciences, submitted to the School of Graduate
Studies, University of Education, Winneba, in partial fulfilment of the
requirements for award of the Master of Arts in Educational Leadership degree**

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DECLARATION

STUDENT'S DECLARATION

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

SIGNATURE:

DATE:

SUPERVISOR'S DECLARATION

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

NAME OF SUPERVISOR: REV. FR. DR. FRANCIS K. SAM

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DEDICATION

To my husband, Dr. George Ohene Djan and children, Josephine Ohene-Djan, Abena Boatemaa Ohene-Djan, Kwaku Ohene-Djan Jnr., and Kwadwo Adu Ohene-Djan.



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ABSTRACT

The purpose of the study is to investigate the perceived influence of instructional strategies on academic performance of students in public junior high schools at Ejisu Municipality in the Ashanti Region. The objectives of the study were to identify the instructional strategies used by teachers in public junior high schools, factors that determine teachers' choice of instructional strategy in public junior high schools, and the relationship that exist between instructional strategies and academic performance of students. Descriptive survey research design was employed using the quantitative approach for the study. The population of the study teachers of public Junior high schools at Ejisu Municipality. A sample of 138 teachers were selected for the study using simple random sampling method. The main instrument used for the study was questionnaire. The reliability test yielded Cronbach Alpha of 0.81. Descriptive statistics such as frequencies and percentages were used to analyse the data. The study revealed that varieties of instructional strategies through teaching and learning. It was evident from the study that number of students in the classroom, and facilities and resources available determine teachers' choice of instructional strategy. It was concluded that instructional strategies had a direct influence on students' academic performance. This study recommends that teachers in Ghana must embrace these effective instructional strategies in their quest to realize sustainable learning outcomes.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Education is one of the most promising paths for individuals to realize better and more productive lives (Stephens, Warren & Harner, 2015). Teaching strategies are key as they influence effectiveness of student learning process and their performance (Wong & Wong, 2011). The concern is whether instructional strategies used in junior high schools are promoting quality learning and whether students were achieving at the required level of performance and prepared adequately to attain quality skills, attitudes and knowledge to develop as holistic individuals. The World Bank Group (2020) documented that the current education has failed to address holistic development of learners. According to the World Bank Group (2020), low and middle-income countries “learning poverty” stands at 53.0%, while for the poorest countries, this is 80.0% on average.

The 21st century has witnessed the agitation for improvement of students’ performance through provision of quality education. United Nations Educational Scientific Cultural and Organisation (UNESCO) (2017) documented the SDGs 2016-2030, and its overarching goal No. 4 that requires nations to provide equitable and inclusive quality education and promote life-long learning opportunities for all by 2030. The SDGs also requires that every human being acquire skills, knowledge, attitudes and values to deal with world challenges and realize sustainable future. According to OECD (2012) lifelong skills development will effectively address inequality, access to quality education, acquisition of essential skills for social development, labour market integration and youth unemployment challenge.

Global Monitoring Report (2016), shows that Sub Saharan Africa investment in education has not fully translated to development of functional skills and knowledge that could transform economies of which they live in general and individuals in particular. Research evidence shows that instructional strategies presents better and effective way of addressing improvement in students' access to quality education, acquisition of essential skills for social development and academic performance (Rosenshine, 2012; Marzano & Toth, 2014). According to Nuhu (2014) instructional strategies are the plans for success in classroom instruction. Nuhu further explains that instructional strategy involves the sequencing or ordering of the techniques a teacher intends using in a class. Instructional strategies refer to planned ways on how to carry out teaching and learning exercise for a better academic achievement. Instructional strategies employ some teaching methods and techniques to foster learning (Ezegbe, 2016).

Graf, Kinshuk and Liu (2013) agrees that effective instructional strategy has the potential to facilitate effective learning for students. Studies (Reid 2015; Sadeghi, Kasim, Tan & Abdullah, 2012) classified instructional strategies into active learning, group-based learning, assessment-based learning, and enquiry-based learning. Further classification based on action origin, group the strategies into learner-centered, teacher-centered or an integrated instructional strategy (Illeris, 2018). Different instructional strategies fit different learning settings and elicit various anticipated outcomes (Morrison, Ross, Morrison & Kalman, 2019). While learner-centered instructional strategies have been preferred the three instructional strategies present different advantages and disadvantages which inform teachers strategy preference (Curtiss, Pearson, Akamoglu, Fisher, Snodgrass, Meyer, & Halle, 2016). In most cases, teachers adopt strategies that make their work easier based on their perceptions and attitude,

personal subjective preferences, and institutional and disciplinary cultures. Besides, teachers also vary the type and quality of instructional process based on the entry behaviour of the learners as well as their level of engagement. In this regard, teachers based on the context of the learning environment, adopt different instructional strategies which ultimately result in within school and among class variances in student academic performance (Illeris, 2018).

In Ghana, the need for an enhanced students' academic performance has led to various reforms in the education sector. The reforms range from a well-structured teaching education system which enhances teacher quality, continuous teacher professional development, and regular teacher monitoring and evaluation of teaching and learning process. Such reforms envision the application of appropriate instructional strategies for better academic performance (Adu-Gyamfi, Donkoh, & Addo, 2016). This present study argues that while learning is conceptualized as a holistic social outcome, success in education is based on academic performance, which is greatly influenced by effective instructional strategies adopted (Illeris, 2018). This study investigates the effects of instructional strategies on students' academic performance in public junior high schools at Ejisu Municipality in Ghana.

1.2 Statement of the Problem

The education skills and knowledge acquired by students depend on the interaction between teacher's knowledge of the subject matter and pedagogical ability that in turn guarantee better students' performance. Despite the role of teachers in teaching of students, reports show failure of teaching to inculcate a range of skills and competencies that develop the students.

An observations made during lessons taught in the various public junior high schools at Ejisu Municipality revealed that students' participation in the lessons were

not encouraging. Most students provided wrong answers when they are asked to provide answers to questions. Besides, the scores recorded from the student's exercise books were not impressive. Some of the teachers embracing the same traditional teaching styles in every context during teaching. In consequence, the students become bored and inattentive in class which affect their performance. Kang and Keinonen (2018) revealed that few teachers perform very well in their subjects in some public junior high schools and considered effective while majority of teachers perform poorly, despite having the same qualification as the effective teacher. In an attempt to address this issue, the present study explored the effects of instructional strategies on students' academic performance in public junior high schools at Ejisu Municipality in Ghana.

1.3 Purpose of the Study

The purpose of the study was to investigate the perceived influence of instructional strategies on academic performance of students in public junior high schools at Ejisu Municipality in Ghana.

1.4 Objectives of the Study

The study seeks to achieve the following specific objectives:

1. To identify the instructional strategies used by teachers in public junior high schools at Ejisu Municipality.
2. To ascertain the factors that determine teachers' choice of instructional strategy in public junior high schools at Ejisu Municipality.
3. To explore the relationship that exist between instructional strategy and academic performance of students.

1.5 Research Questions

The study answers the following questions:

1. What are the instructional strategies used by teachers in public junior high schools at Ejisu Municipality?
2. What factors determine teachers' choice of instructional strategy in public junior high schools at Ejisu Municipality?
3. To what extent do instructional strategy affect academic performance of students?

1.6 Significance of Study

The results of the study may contribute to research knowledge and would be a source of information to policy makers and researchers in the field education. The results in essence, may contribute to the need for teaching students' necessary skills of using massive information the world offers and assist them to provide solutions to global challenges for sustainable future and sustainable societies. This study emphasises on the need for improved teaching pedagogies to deliver quality teaching and learning which is necessary in improving students' performance.

The outcome of the study may be relevant and important to Ministry of Education (MoE), Ghana Education Service (GES) and heads of public junior high schools as a basis for mounting professional development courses to improve teacher's teaching strategies. By improving the instructional strategies, teachers would enhance accountability to students' performance in public junior high schools in Ejisu Municipality and other part of Ghana.

In addition, the teachers may use the results of the findings to critically reflect on their teaching pedagogy, identify areas of weakness and may seek further improvement of their teaching skills through in-service training. This may help teachers to effectively plan for classroom instruction and assessments, and strive to close students' achievement gap in public junior high schools in Ghana. The study may

inform on the need for re-thinking on the current instructional strategies used by teachers to enable students acquire learning skills.

The study will serve as an important guide, source of knowledge and reference work for academicians, educationists, the general public students, stakeholders, and development partners. Overall, the study offers both managerial and theoretical understanding of instructional strategies and their application in the education sector.

1.7 Delimitation of the Study

This study focuses on the education sector in Ghana. The study centers on the instructional strategies and academic performance of public Junior High School students at Ejisu Municipality in Ashanti Region of Ghana. In terms of content, the study focused on the instructional strategies used by teachers, effectiveness of various instructional strategies used by teachers, level of academic performance of students, and the relationship that exist between instructional strategies and academic performance of students in public junior high schools at Ejisu Municipality.

1.8 Limitation of the Study

The study was not without constraints even though the researcher tried to as much as possible to reduce these constraints to the barest minimum and make sure they do not affect the findings of the study. The number of junior high schools selected for the study was limited to only public junior high schools in Ejisu Municipality because of time and financial constraints. In addition, a common constraint of using the questionnaire method for data collection is the difficulty in getting respondents to respond promptly to the questionnaire. Also, the use of Likert-type scale was likely to limit the flow of some vital information for the study as respondents were only limited to the items provided on the question. This weakness might have affected the findings

of the study. Regardless of assurances, some teachers were not prepared to respond to the items for fear that their responses may be published.

1.9 Definition of Terms

Instructional strategies - are techniques teachers use to help students become independent strategic learners. These strategies become learning strategies when students independently select the appropriate ones and use them effectively to accomplish tasks or meet goals.

Effectiveness - the degree to which the technique employed in teaching is successful in producing a desired result.

Academic achievement - is defined as successful completion, through effort, of the acquisition of academic content and skills mostly determined by the grades or scores that the student gets in a test.

Learning - is the act of acquiring new, or modifying and reinforcing, existing knowledge, behaviors, skills, values or preferences and may involve synthesizing different types of information.

1.10 Organisation of Study

The study is organized into five different chapters. The first chapter talks about the background to the study, the statement of the problem, the research objectives and questions. The chapter also deals with the significance of the study, the delimitations and limitations encountered in the study. Chapter two deals with the literature review. It presents theoretical and empirical perspectives of school-based factors that influence students' academic performance.

The third chapter talks about the research methodology which includes, research design, population for the study, sample and sampling technique, data collection instrument, validity and reliability of the instrument, and data analysis. The fourth

chapter deals with the data presentation and analysis. The data was obtained through primary and secondary source. The presentation was in the form of mean and standard deviation, which was captured in tables. The last chapter, which is chapter five talks about the summary of findings, the conclusions that were drawn and the recommendations.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the theoretical and empirical review for the research which seeks to review relevant literature on the influence of instruction strategies on students' academic performance. The literature specifically reviews the Constructivism theory, overview of Instructional strategies, instructional strategies used by teachers, challenges for the implementation of Instructional Strategies, concept of academic performance of students, and the relationship between instructional strategies and academic performance.

2.1 Constructivism theory

The study was guided by the constructivism theory which is credited to a Swiss psychologist Piaget (1995) articulates mechanisms by which knowledge is adopted by learners. He proposed that people build new knowledge by integrating it with their inner illustrations of the world. Constructivism is a theory grounded on observation and scientific study about how people would learn. It suggests that people would build their personal understanding and knowledge of the world by going through the things and replicating on those experiences. Constructivism education is based on the conviction that learning happens as learners are involved in an active manner as compared to passively receiving knowledge (Mayer, 2004). Learners are the producers of sense and facts. Constructivist teaching allows learners to be critical thinkers and make them become motivated and independent.

This theoretical framework indicates that new knowledge is built upon knowledge that a learner already knows that is referred as schema. In a constructivist classroom learners are actively involved in the learning process, a self-governing

learning environment is provided as well as interactive and learner centered learning activities are provided. Finally, the teacher is a facilitator in the learning process as learners become responsible and independent. Therefore, when teaching Science, learners should be actively involved making learning learner centered rather than learning being passive. This would allow learners to build understandings on their personal learning process. The learner should be given a chance to take part in the learning process and the learning experience be facilitated within the learners own mind.

2.2 Overview of Instructional Strategies

Instructional strategies are techniques teachers use to help students become independent, strategic learners (Cook, Kennedy & McGuire, 2013). According to Nuhu (2014) instructional strategies are the plans for success in classroom instruction. Nuhu further explains that instructional strategy involves the sequencing or ordering of the techniques a teacher intends using in a class. Instructional strategies refer to planned ways on how to carry out teaching and learning exercise for a better academic achievement. Raymond (2014) revealed that instructional strategies are decisions about organizing people, materials and ideas to provide learning.

Sharma (2016) viewed instructional strategies as both the teaching method and the materials used in the process of teaching. Instructional strategies employ some teaching methods and techniques to foster learning. Teaching methods broadly deal with all aspects of what happens in a classroom during a teaching learning session and even some times before and after it, including preparation for and remedial work after (Stoica, Moraru & Miron, 2016). On the other hand, a teaching technique is a specific way or aspect of a particular method of teaching (Mezieobi, Fubara & Mezieobi, 2016).

According to Stoica et al. (2016), instructional strategies help students to walk on the path of independent learning and become strategic learners. They equip teachers to make learning fun and help students to awaken their desire to learn. Instructional strategies focus on not only the educational content but also on the method and environment of the teaching process, students' development level, interests and experiences are considered while choosing a particular teaching strategy so that they can self-accomplish their goals (Cook et al., 2013). Osei-Asibey, Kusi, Nimoh and Bosson-Amedenu (2020) revealed that there is hardly any meaningful and successful activity that does not require well-thought out strategy.

According to Amos, Folasayo and Oluwatoyin (2015) instructional strategies enable students to focus their attention, organize their learning material for better understanding and help teachers to provide a suitable platform for strategic learning. Effective teachers calculatedly use various techniques, styles, methods, and tactics in altering learner's behaviour in a positive direction in line with the specific objectives of the lesson. The various ways and techniques used by educators in delivering instructional content and to achieve specific objectives are known as instructional strategies. Instructional strategies constitute the various styles and modes of communication employed by a teacher in order to deliver instructional content and achieve desirable change in the behaviour of the learner (Clement, 2014). Some of the instructional strategies often used include demonstration method, discussion method, brainstorming strategy, lecture method, problem solving method, project or contract method, discovery method, role-playing or drama method, etc. Traditionally, teachers widely applied teacher-centered strategies to impart knowledge to learners comparative to student-centered methods (Clement, 2014).

Some of the commonly identified instructional strategies include: discovery, value clarification, discussion, simulation and game, and dramatization (Ministry of Education, 2014). The MoE has therefore recommended a new approach for the teaching and learning of Social Sciences in schools called the learner-centered instructional strategy. According to the MoE (2014), the instructional strategies for teaching practical subject should include collaborative, interactive and learner-oriented instructional strategies. Ganyaupfu (2013) grouped instructional strategies into teacher-centered method, student-centered method, and teacher-student interactive method.

According to Saskatchewan Education (2009), instructional skills are the most specific category of teaching behaviour. They are necessary for procedural purposes and for structuring appropriate learning experiences for students. These include such techniques as questioning, discussion, directing giving, explaining and demonstrating. Hence, students learn by doing, making writing designing, creating and solving (Rao, 2015). Demonstration is the most widely used instructional method for the acquisition of practical skills as it involves verbal and practical illustrations of a given procedure. This method is seen to be highly effective because it involves active participation of the students (Torty & Offorma, 2015). Ugwoke (2014) on the effects of instructional approaches on students' academic performances indicated that students taught with demonstration performed significantly better than those taught with inquiry method.

Inquiry is a technique which involves students in questioning to explore an area of study. It is a process student engages in to investigate and explain problems. Students collect and test data logically in order to discover why things happen the way they do. It is a student oriented strategy which requires active participation in questioning events and in putting several factors together (conceptualizing) to explore hypothesis or theory (Onuoha, Ejimonye, Eneogu & Ugwuanyi, 2016). According to Obodo (2014), it is a

method where the teacher could ask leading questions to guide the students to discover concepts. Ncharam (2015) studied the effects of inquiry and lecture methods on students' performance in chemistry and observed the performance in favour of guided inquiry approach.

Discussion strategy is when two or more people interact verbally with each other. It could be used deliberately in teaching and learning situation, but sometimes it occurs spontaneously as a teacher uses one method of teaching or another. Discussion could be considered as a technique within a method (Umoren, 2014). Discussion strategy affords every member of the class opportunity to articulate his views on a particular issue and learning discovered in the process tends to last longer than when learning is imposed on the students (Etuk, Udosen, & Edem, 2014). In discussion, Udofia (1999) maintained that the teacher's contributions are very minimal and are made only when necessary. Lecture method involves a verbal presentation of ideas, concepts, generalizations and facts. The practice in this method is that of spoon-feeding the learners with information or facts. The students remain passive and receive information from their teacher (Umoren, 2014).

Skills in the selection and utilization of appropriate instructional strategies are required by the teacher for effective teaching. There is no one best approach to instruction. Teaching effectively demands that the teacher must possess some basic ability to organize, co-ordinate and utilize personal qualities, objectives and competency in lesson preparation, presentation and evaluation. Besides, he must be able to motivate the learners, make students active participants in learning, use appropriate strategies and facilities to enhance effectiveness in instructions. Some researchers recommended eclectic method (combination of strategies). Teachers are also expected to implement a variety of instructional strategies in order to meet the objectives of the

programme as well as to address individual student interest and needs (Saskatchewan Education, 2009). Until today, questions about the effectiveness of instructional strategies and how instructional strategies affect students' academic performance have consistently raised considerable interest in educational research (Hightower, 2011).

Quite remarkably, regular poor academic performance by most students is fundamentally linked to application of ineffective instructional strategies adopted by teachers to impart knowledge to the students (Adunola, 2011). Substantial research on the effectiveness of instructional strategies indicates that the quality of teaching is often reflected by the performance of business education teacher. It is expected that every business education student should show mastery of accounting examinations, managerial ethics, marketing strategies, Shorthand, keyboarding, word processing, and computer application. The test scores, examination scores, grade and ability of a business education student to drill shorthand, type at acceptable speed and accuracy, and perform basic accounting functions practically are measures of their performance.

Oladosu (2007) asserted that instructional strategy employed act by building into the mind, knowledge of facts, relations or principles of one kind or another. In a physical training context, trainees are instructed to "quick march" and they instantly continue to march until a counter instruction is issued. This is to illustrate the fact that the concept of instruction makes the instructor – a supreme commander and the instructed "an obedient servant" who has no say or who is actually not allowed to say anything. Oladosu (2007) noted that instruction is preferred in the classroom situation involving the teaching of practical-oriented courses such as shorthand, typewriting, etc. Here, the teacher is assumed to possess more knowledge and practical experience than the learner(s); it therefore behoves the learner to follow whatever instruction given. In a broader perspective, instruction is more than teaching or training because it is

systematic, specific and objective. Oladosu (2007) indicated that the type of instructional strategy employed by the teachers helps the learner through the body of knowledge that can increase the learner's ability to grasp, transform and transfer what he is learning.

2.3 Instructional Strategies used by Teachers

Achievement of the objectives of subjects taught in schools can be influenced by certain factors. Among these factors are the instructional strategy used in teaching the subject, students' interest, gender and school location (Okeke, 2015). According to Nuhu (2014) instructional strategies are the plans for success in classroom instruction. Nuhu further explains that instructional strategy involves the sequencing or ordering of the techniques a teacher intends using in a class. Instructional strategies refer to planned ways on how to carry out teaching and learning exercise for a better academic achievement. In this present study, instructional strategies that were grouped into teacher-centered method, student-centered method, teacher-student interactive method, assessment instructional strategy, and resource-based instruction strategy were employed.

2.3.1 Student Centered Instruction Strategy

The study considered the use of student centered instruction in terms of effective classroom management with indicators being students' behaviour, setting students' learning expectations and social emotional development. Student centered instruction is a method of teaching where students are at the centre of learning while a teacher remain as facilitator. The instructional process engages students in active learning and more attention is given to students meta cognitive strategies. Student centered instructional strategies are preferred as it improves student's knowledge construction, conceptual understanding, and attitudes towards learning (Kober, 2015).

The quality of instructional strategies influences students learning and contributes to about 15 to 20 times improvement in students' performance (Wong & Wong, 2011). Walters, Smith, Leinwand, Surr, Stein and Bailey (2014) have reiterated the shift in teaching instruction from teacher centered teaching to student centered instruction. They argued that student centered instruction promote students understanding, deep learning, problem solving, critical thinking and communication. They noted that the instruction consists of complementary approaches to teaching and learning from multiple theories, disciplines and trends in education.

Teachers can use student centered instruction to guide and regulate students' behaviour in the classroom. Tiwari and Panwar (2014) in their study opined that; teachers encounter students with behavioural problems in their real classrooms in secondary school causing the classroom problems. Colombi and Osher (2015) further explain that students discipline affects classroom and performance of students through truancy, defiance, disruption, cheating, bullying, harassment, substance abuse and violence. Al-Amarat (2011) observed that student behavior and academic problems result in disciplinary problems for the students, minimal learning and low student achievement.

In addition, Bear (2010) contend that the challenges of indiscipline in schools arise out of failure by schools to focus on school safety and preventing any occurrences of school misbehaviour. Freire and Amado (2009) argued that the existing link between disciplinary problems and school ethos arises from complex inter-personal relationships in schools, which translates into attitudes, behaviours, values and practices that distinguish a school from other schools. The students' ability to behave well influences their growth and positive development in school. Effective student centered teaching promotes effective classroom management which impart in students a sense

of responsibility, self-control and realization of optimal learning. From the students' point of view, effective classroom management accounts for 32 percent of teacher effectiveness (Stoop, 2011; Owoyemi & Adesoji, 2012).

Student centered instruction in the classroom is imperative in controlling behaviour and realizing students' performance. Wilkinson and Meiers (2007) argued that there is no single solution to managing students' behaviour in the classrooms. However, schools with programmes on behaviour management are able to create an environment to undertake different classroom tasks. Wright (2012) recommended screening of students with social problems and providing intervention measures to address the identified academic and behavioural problems. Wright indicated that teachers with the help of their schools and student involvement can establish rules and regulation to guide student behaviour in and out of the classroom. Stanley (2014) suggested that school rules and regulations prescribe the standard of behaviour expected for students and teachers. Similarly, Kratochwill, DeRoos, and Blair (2015) documented that effectiveness of classroom management system is realized by adhering to three principles; emphasis on student expectation for behaviour and learning, emphasis on promoting active learning and student involvement and identification of important student's behaviours.

In student centered teaching, teachers actively involve students in setting learning expectations including learning objectives. Walters et al (2014) carried out in-depth case study using qualitative research to look at student centered mathematics teaching. They noted that using student centered instruction in teaching mathematics, transforms mathematics classrooms into lively and engaging learning environments where students take control of their own learning while making meaningful connections to the world in which they live. The effectiveness of student centered teaching and the

need for learning expectations for improving students' performance has been documented. Anthony and Walshaw (2009) outline ten principles of effective teaching of mathematics that entails; ethic of care, arranging for learning, building on students' learning, mathematical communication and language, assessment for learning, practical tasks, making connections, tools and representations; and teacher knowledge and learning.

2.3.2 Teacher Centered Instruction Strategy

The study considered teacher centered instruction in terms of delivery of teaching to students using, lectures, demonstration and drill and practice. Instruction endeavours to assist students to learn and achieve high performance. Students encounter difficulties in knowledge and skill acquisition on given subjects, resulting to learning challenges. However, well-design instruction may assist overcome learning difficulties, by activating ways of undertaking teaching and replacing previous knowledge with new information (Kober, 2015). Marzano and Toth (2014) indicated that in teacher centered instruction, teacher dominates teaching and seem to focus on own learning than the student does. Additionally, the report shows that classroom observation findings from Learning Science Research that; 58% of lessons observed concentrated on helping students interact with the content; 36% on helping students practice and deepen new knowledge; and less than 6 percent of the lessons observed were dedicated to the highest level of cognitive complex tasks. This means that learners acquire more when the lesson uses practical learning activities.

Teacher centered instruction involves teacher-exerting control through identification of well-designed routines, rules and regulations to be followed and punishments (Garrett, 2008). The lecture method is used and classroom design involves desks arranged and design to face the teacher as the focal point. This ensures students

are passive receivers of knowledge who must comply with rigid rules in the classroom. The findings echoed by the Center for Public Education (2013), that noted from the findings of a large-scale study on English classes, that teaching instruction used by teachers among grade 8th and 9th, was lecture method which promoted memorization of facts. Jabbour (2013) discusses issues that restraints teachers from embracing student-centered teaching in Lebanese classroom. Teacher-centered teaching, especially lecture as method of instruction dominates. The teacher is respected as holder of information and learners as receiver of information and are not provided opportunity to develop own knowledge. Teacher centered teaching limits inclusion and interaction.

Studies have reviewed the importance of teacher centered instruction to students learning. Navaz (2013) and Sessoms (2008) studied the use of lecture methods in teaching and noted that use of lectures influenced classroom students' interaction and comprehension. Scott (2015) argues that though still strongly used a teaching strategy, lecture model is highly ineffective for teaching skills and competences in the twenty first century and hence need for a transformed pedagogy. Ngaroga (2011) explains the appropriateness of lecture method as one of the teacher centered instruction. Lecture method is used in teaching to stir enthusiasm on a specified subject to the learners, inform learners of the expected outcomes, synthesize learning, reinforce written work and deliver information within a shorter time. In addition, the use of lecture method in teaching may be inappropriate when the material to be learned is complex coupled with low intelligence, educational experience and concentration of the learner.

Panthi and Belbase (2017) discuss the teaching and learning issues in Nepal context. Apart from social justice, gender, economic, language, and technological issues; pedagogical issues where among key issues affecting teaching and learning of mathematics. Langer (2007) presented a five-year study report on the characteristics of

the education practice among the students in Middle and High School. The findings revealed that more time for independent reading, small group instruction, and high levels of engagement in higher-level literacy tasks, use of scaffolding to link instruction to real reading, and strong links between school and home are needed to enhance increased reading at the classroom level.

On the other hand, the study considered the demonstration method as part of teacher centered teaching. Farooq (2013) and Ngaroga (2011) explained that demonstration method is one of the traditional classroom strategy that is aimed at achieving cognitive and psychomotor objectives. The teacher remains the central person who gives several demonstrations of a complete operation and uses explanations that must be applied correctly. The students initiate the performance of the learned skill. The method is appropriate in nearly all subjects including; physical education, science, art and craft, home science, agriculture, mathematics and computer classes. Drill and practice as part of teacher centered instruction involves systematic repetition of examples, concepts and practice problems. Leone, Wilson and Mulcahy (2010) discusses on use of drill and practice in teaching mathematics. They noted that though drill and practice is use as part of explicit instruction, it does not engage the students fully. Emphasis should be that of reviewing the previous learned knowledge, reteaching and reinforcing the new knowledge, concept or skill; and teaching of numeracy and mathematical concepts based the grade.

Lehtinen, Hannula-Sormunen, McMullen, and Gruber (2017) explained the importance of deliberate practice in development of high-level performance that improves ones' level of competence. Accordingly, practice lays emphasis on thinking, problem solving and reflection and in mathematics; learning requires practice that enhances solving of simpler arithmetic. In addition, drill-and-practice enables learners

to automatize basic skills leading to inert routine skills. They recommended moving away from drill and practice to deliberate practice that enable learners undertake complex tasks. Silverman and Mercier (2015) discussed the implications of teaching physical literacy and documented that the choice of instructional design on students learning depends on the decision by the teacher. Motor skill training enables an individual to enjoy lifelong physical activity and depends on the time, type of practice to be undertaken, organizational and content strategies and student skill level. Appropriate practice is imperative in motor skill training while negative achievement may result from inappropriate practice.

2.3.3 Assessment Instructional Strategy

Assessment is a vital component for gauging the learners' progress. Assessment is undertaken as part of teaching to assess the extent to which learning has taken place and whether learning objectives have been achieved. The study considered formative, continuous and summative assessments as aspects of the study. According to Osei-Asibey et al. (2020) there has been a major concern on the assessment of student learning in junior high schools in Ghana. Regier (2012) looked at types of assessments and suggested how teachers can use to improve learners' performance. Examples of assessments include; peer assessment, problem solving and formative assessment. Formative assessment entail teachers using assessment strategies that enable them determine students understanding and mastery of a set learning goal.

In addition, formative assessments assist the learner to improve on subject mastery and are linked to practical experience. Formative assessments are administered through project work, continuous assessment and end of term examinations. UNESCO (2004) noted that barriers to successful students' assessment happen outside and within the school that necessitate continuous assessment of the students. It is imperative to

understand what each student already know, can do, what each student needs to know and do. According to teachers, assessments in students learning guides decision making on what and how to teach; assist in differentiating instruction for diverse students in class; and using assessment strategies that takes into consideration prior knowledge and experiences of students and students preferred learning styles. Studies evidence points to the use of formative and summative practices to improve students' performance. Gholami and Morady (2013) carried out a study that investigated the effect of weekly quizzes on Iranian high school students' performance on final achievement tests. They noted that achievement tests arouse practice and review, and provide opportunities for feedback. Jabbarifar (2009) undertook research literature synthesis and noted that assessment is an ongoing process involving developing, administering and analyzing the questions, providing feedback on the effectiveness of instruction and giving a measure on the learner's progress.

Rieg (2007) carried out a quantitative study investigating the perceptions of Junior High School teachers, and students at risk of school failure. He discusses on the effectiveness and level of use of various classroom assessments and assessment-related strategies. The findings showed statistically significant differences existed between assessments and strategies teachers and students perceived to be effective and what is being used in the classrooms. Kelepolo (2011) undertook a research study to establish the relationship between participation in extracurricular activities and the study results revealed that students who participated in extracurricular activities scored highly in attendance, grade point average compared to students who did not participate in extracurricular activities. Similarly, Leung, Ng, and Chan (2011) explained that students' participation in co-curricular activities could enhanced students learning effectiveness and have positive effect on students' academic performance.

Ajoke, Aspalila, Aspalila, and Hasan (2015) investigated the impact of cocurricular activities on enhancing speaking of fluent English by secondary school students. They argued that students learning English as the second language in Nigeria, lack access to interrelate with native English speakers. The findings revealed that cocurricular activities enabled students to participate actively in debating, press updates, social gathering, and games and learn English as a Second Language in the process and resulted in improved academic performance. William (2011) contend that assessment is central to effective instruction and serves to show whether particular sequence of instructional activities have resulted in the intended learning outcomes. Accordingly, instruction used has to be adaptive to the learners needs and effective to the majority of the students.

Garrison and Ehringhaus (2013) discusses that formative assessment provides information about the learning process, enables the identification of strengths and weaknesses of students and planning of subsequent lessons and remedial action. Similarly, UNESCO-IBE (2014) reiterated the importance of continuous assessment tests, as diagnostic and undertaken to provide learners opportunities to connect learning to their real world context. Ojeka, Ajara and Ataseriba (2015), Ndalichako (2015) and Mikre (2010) discusses on the role of teachers' in assessment of their students' achievement. They noted that assessment is an indispensable part of curriculum practice that shapes learning process and affect quality of learning. In addition, Cid (2014) noted that assessment and learning are interrelated, that assessment helps teachers in changing their teaching strategies and students to improve on their learning, control their behaviour, determine what and how to learn.

Naiku (2015) reviewed the importance of summative assessment in measuring student's achievement at the end of the pre-determined instructional period. Summative

assessment entails evaluating student's learning, academic achievement and skill acquisition. Naiku explained that summative assessments serve two key roles; serves as a guide to improving teaching methods; and helps teachers in curriculum planning, improvement and change.

2.3.4 Resource-based Instruction Strategy

Resource-based learning is critical if teachers have to improve students' learning based on their needs. Resource-based instruction entails wide range of means by which students are able to learn independently from those that are mediated by teachers. UNESCO (2004) documented that teachers often lack teaching materials needed for preparing and delivery of quality lessons. The resource-based instruction strategy considered teaching resources, physical and material resources and technology resources as sub variables of the study. Resource-based instruction is also known as resource-based learning. Campbell et al (2014) explains resource-based learning as a teaching instruction involving use of multiple resources available in print, non-print form including the key educators that include the teachers and media personnel.

Resource based-learning has gained momentum in students' learning due to the emergence of flexible and blended learning. The instruction method provides options of choosing resources that include; the internet, books, newspapers, games, guest speakers, museums, music and video charts. The multitude of resources is aim at enabling students to gain access to information, create knowledge, and increase the understanding of the skill. Benjamin and Orodho (2014) in a research study investigated the relationship between availability of teaching and learning resources and effective classroom management and content delivery in secondary schools. The results revealed a significant ($r=0.711<.001$) at $\alpha=0.5$ and positive correlation between teaching and learning resources and level of content delivery and classroom management.

Lazaro and Anney (2016) carried out study employing quantitative and qualitative techniques on the role of co-curricular activities in developing students' talents in secondary schools. The findings revealed that inadequate facilities including teaching resources, lack of adequate supervision and formal training for teachers contributed to limited students' participation in co-curricular activities. In addition, Omae, Onderi and Omwebi (2017) in quantitative and qualitative study established that shortage of co-curricular activities facilities and inadequate supervision of teacher resources affected provision of quality education.

Renaud et al (2007) explains that in many developing countries, there are limited resources such as textbooks that hinder students' performance. The resources at the disposal of the teacher are the chalk, few textbooks, pen, pencil and the chalkboard. Andambi and Kariuki (2013) examine the type of learning resources used, selection criteria and its relevance in teaching social education and ethics, and concluded that teachers should select relevant learning resources and effectively use to provide effective teaching. Timilehin and Ogbomida (2012) investigated the relationship between human and material resources on academic performance of private and public secondary school students. The results showed that human and material resources are not significantly related to students' academic performance. In addition, Ekpo and Igiri (2015) investigated the impact of instructional materials on teaching and learning Biology by senior secondary II school students, in five comparable secondary schools. The findings revealed that Biology students taught with instructional materials during the lesson by highly qualified Biology teachers result in positive achievement and that teaching aids promotes communication and effective learning, better retention and learning that is more permanent.

Olayinka (2016) undertook a study targeting 180 junior secondary school students to explain the contribution of instructional materials to academic achievement. The teachers examined those students taught with the instructional materials in social studies lesson and those who did not. The results revealed that students taught with instructional materials in social studies achieved better results. OECD (2009) has shown through its programme on education; Programme for International Student Assessment (PISA) that learning resources are significant to student learning. It documented that shortage of resources hinders students' performance and contribute to inequality in students' attainment (OECD, 2009/2011). Similarly, Koroye (2016) study findings revealed that school infrastructural facilities, instructional materials and school equipment, influences students' academic performance. Baker (2012) examine the use of monetary resources in schools and districts and discussed that money resources clearly have greater ability to provide higher quality, broader, and deeper educational opportunities to students.

In Ghana, in majority of public secondary schools, there is shortage of material and physical resources and yet it is critical for students learning (Juliana, 2017). Similarly, Oparel, Manu, Ackah, and Akrosumah (2018) revealed that some of JHS schools in Ghana do not have enough TLMs to teach lessons; most materials found in their laboratories were outmoded and cannot be used. Natia and Al-hassan (2015) also indicated that in most basic school in Tamale, teaching and learning materials are unavailable. World Bank (2018) investigated provision of physical and material resources in secondary schools in Sub Saharan African countries, including Ghana. The findings revealed that 40% of students with textbooks in mathematics, English and Kiswahili were in urban areas while 5% of students without books were located in rural areas. Providing learning resources to students, such as textbooks improves reading and

comprehension, access to information, access to books in several subjects, and carrying out of research. Timilehin (2010) in the education study found that physical resources contribute to improvement of students' achievement in affective and psychomotor domains of learning.

2.4 Factors affecting teachers' adoption of Instructional Strategies

Instructional strategy ensures the achievement of the stated instructional objective effectively. Instructional strategies are used in the presentation of lesson to help the students learn by ensuring the smooth delivery of the instruction. It is a process by which an instructional module, instructional phase or an entire course is delivered. Selection of a particular instructional strategy comes with pressure and criticism. Teacher's usage of student-centered strategy is based on time available, project to be carried out by student. Wilhelm (2007) emphasized that student centered strategy required discipline and direction. Another factor is where good guiding questions are created for inquiry. Wilhelm concluded that many questions are directly related to concepts.

A further factor identified by Diane (2007) was how to fit an inquiry approach with a prescribed, mandated curriculum. Some factors affect the use of instructional strategy. They include the stage of development, capability of learners using peer instruction, the administration of the teaching space and the kind of course being carried out; Science for example, is described in leading itself to tasks in class that can generate the actual situations for carrying out peer instruction (Howe, Tolmie, Duchak-Tanner & Rattray, 2000). The adoption of a particular instruction strategy is subjective to class size and the arrangement of groups in the setting of the classroom.

Merrill (2001) revealed that students centered approach lacks focal point. Merrill mentioned that with students centered strategy students must turn to face the

teacher or other focus of attention. Consequently, they have no writing surface at some point in the class and it can be difficult for the teacher to be seen by all students at the same time. The room, therefore, requires a more active approach to be taken in which the student is the focus of attention more of the time. In situations where the teacher or the students need to project information, it should be projected to multiple screens around the room. The teacher should normally position themselves in the centre of the room to address the whole class and to monitor the students working in tables groups to check their understanding. Students should respond to their teacher's movement within this central space by re-orientating themselves.

Marzano and Toth (2014) mentioned that students centered strategy create multiple distractions. These include noisy small group conversations, audio from other student's laptops, the changing projections on each of the groups' video screens, whiteboarding activities, and the constant movement of the teacher. The teacher needs to be aware of what their students should be doing and check that students are always clear about the tasks they have been given. The teacher needs to consciously direct student attention during class at key points. As discussion groups complete their conversations they are likely to miss key instructions. Before class, the teacher should prepare instructions for the planned activities. They should consider projecting key instructions and repeating them clearly to make sure all groups are keeping up and on task.

Marx, Blumenfeld, Krajcik and Soloway, (1997) also reported factors to implementation of instructional strategy including time allocation, finance to acquire or improvise needed TLMS, and opportunities for in-service training/refresher course for teachers to update their knowledge periodically in the light of new research findings and resource development. Marx et al., (1997) further mentioned that environmental

factors such as little or non-availability of equipped library, laboratories, workshops, water supply, affects the effective utilization of TLMs. In determining the instructional strategy to be used for the conveyance of information in basic technology, the followings were the factors affecting the use of instructional materials. Bakare (2006) outlined the following factors:

Nature of the subject matter and the objectives to be attained: if the subject matter is such that is diversified, it may involve the use of more than one type of instructional material to achieve its objective. Number of learners/ students involved: If the number of learners to be taught are up to one hundred (100), it would be more logical and efficient to use microphone for the presentation of information. The space of time available: Time is always limited and has its effect upon the kind of instructional materials used. If there is ample time, the teacher is more likely to use the chalkboard and other techniques that encourage maximum participation. But when time becomes a limiting factor, the chalk and talk would be preferred.

Facilities and Resources (materials) available: The kind and extent of physical facilities and the instructional material available, including community resources, affect the choice of instructional material that can be used. Interest and ability of teacher: Most teachers have personal preferences and more security conscious in using selected instructional materials. Other things being equal, the teacher should use the methods that he/she likes or uses best. This does not mean that he/she should not be sensitive to other development that supplement or improve upon the instructional materials he/she frequently uses.

Effectiveness of Instructional materials: All teachers should evaluate instructional materials used in terms of the objectives to be accomplished, and the situation at hand, and choose the one that will best meet the goals of the programme.

Balogun (2006) explained that school environment as the physical and material resources to teachers and students to facilitate their teaching and learning. If the school environment is not conducive and thus affect student academic performance. Abdulhareem (2002) indicated that resources-human and material resources are not equitably distributed among schools in Nigeria. Fakomogbon (2000) observed that one of the causes of failure in Secondary Schools is inadequate school resources. He further explained that cannot be overemphasized that the provision of adequate resources is a prerequisite for adequate performance in schools. Most schools lack necessary infrastructural facilities required for effective learning.

2.5 Concept of Academic performance of Students

Academic performance is the extent to which a student, teacher or institution has achieved their short or long-term educational goals. According to Shaw, Gomes, Polotskaia and Jankowska (2015). performance test is the type of test which throws light on the ability to deal with things rather than symbols. In relation to educational research, academic performance of a student can be regarded as the observable and measurable behavior of a student in a particular situation. For example, the academic performance of a student includes observable and measurable behavior of a student at any point during a course. Academic performance determines the human capital development of an economy; it enable students and parents to know the current academic state of their students; and it determines the failure and success of an academic institution (Narad & Abdullah, 2016).

According to Narad and Abdullah (2016) academic performance is the knowledge gained which is assessed by marks by a teacher and/or educational goals set by students and teachers to be achieved over a specific period of time. They added that these goals are measured by using continuous assessment or examinations results.

Arhad, Zaidi and Mahmood (2015) also indicated that academic performance measures education outcome. They stressed that it shows and measures the extent to which an educational institution, teachers and students have achieved their educational goals. Similarly, Yusuf, Onifade and Bello (2016) opined that academic performance is a measurable and observable behaviour of a student within a specific period. He added that it consists of scores obtained by a student in an assessment such as class exercise, class test, mid-semester, mock examination, and end of semester examination. Again, Martha (2009) emphasized that academic performance of students is defined by a student's performance in an examination, tests, and in a course work.

Students' academic performance consists of his/her scores at any particular time obtained from a teacher-made test. Therefore, we can equate academic performance with the observed behavior or expectation of achieving a specific statement of or statement of educational intention in a research. Academic performance of students consists of scores obtained from teacher-made test, first term examination, mid-term test, and so on (Shaw et al., 2015). Academic achievement is commonly measured through examinations or continuous assessment but there is no general agreement on how it is best evaluated or which aspects are most important-procedural knowledge such as skills or declarative knowledge such as facts.

According to Von-Stumm, Hell and Chamorro-Premuzic (2011), individual differences in academic performance have been linked to differences in intelligence and personality. Students with higher mental ability as demonstrated by IQ test and those who are higher in conscientiousness (linked to effort and achievement motivation) tend to achieve highly in academic settings. A recent meta-analysis suggested that mental curiosity (as measured by typical intellectual engagement) has an important influence on academic achievement in addition to intelligence and conscientiousness (Von-

Stumm et al., 2011). Cambridge University Reporter (2016) indicated that academic performance is frequently defined in terms of examination performance. Academic performance can be characterized by the overall performance in each year which culminates in a Grade Point Average (GPA). The GPA score would take into account students' performance in tests, course work and examinations. The method of computing the GPA is as shown below: The minimum and maximum GPA scores are 0 (Grade F) and 4.0 (Grade A) respectively. This GPA score implies that the higher the score, the better the students had performed academically. As such, the GPA is a good measure of a students' academic performance.

Poor academic performance or high failure rates may result in unacceptable levels of attrition, reduced graduate throughput and increased cost of education. This also reduces admission opportunities for tertiary students seeking higher degrees. Hence, students' academic performance has always been a topic of interest for educators. Educators and researchers have long been interested in identifying and understanding the variables that contribute to academic excellence. Many researchers have identified demographic, socio-economic, family and school factors as variables contributing to students' academic performance (Mlambo, 2018).

Hanson (2017) reported that Student performance is affected by different factors such as learning abilities, gender and race. Simmons, Musoba, and Choong (2005) concluded that family income level, attending full time, receiving grant aid and completing advanced level classes in high school having statistically significant effects on college persistence among first generation college students. Mckenzie and Schweitzer (2014) conducted a prospective study to explore the psychosocial, cognitive, and demographic predictors of academic performance of first year Australian university students. Results demonstrate that previous academic performance was

identified most significant predictors of the school performance. Hijazi and Naqvi (2016) conducted a study to find out the factors which affecting college students' performance. In this study researcher mainly focus to explore the factors that associated with performance of students in intermediate examination. A study by Shahzadi, and Ahmad (2015), concluded that attitude towards attendance in classes, time allocation for studies, parents level of income, mother's age and mother's education were main factors that affect academic performance of students.

2.6 Relationship between instructional strategies and academic performance

Instructional strategies and academic performance of students have been assessed by academicians and researchers at various times. On the study conducted by Nafees et. al (2015) regarding the relationship of instructional strategies and students' academic achievement, the findings concluded that problem-based instructional strategy seemed to improve the academic achievements of 9th grade students in basic general science learning. Students taught through problem-based instructional strategy showed a higher improvement in the understanding of general science concepts than the students taught through lecture-based instructional strategy. The result was also supported by the study conducted by Ali (2015) on teaching English which found out that students taught through problem solving method achieved better than those taught by traditional method. There exists a significant difference in the achievement of English students taught through problem solving method and traditional method.

Olatoye and Adekoya (2017) reported that project-based strategy brought the most significant change in the achievement of students. This might be due to the social interactions and friendliness that project-based strategy provided for students. Students under this strategy were better motivated to learn; this might be as a result of the discipline of having to and respect the opinion of others during the discussion having

discovered that knowledge does not belong to only one person (Olatoye & Adekoya, 2017). Research has found that diverse students benefit immensely when they have the opportunity to interact with materials, participate in activities, and manipulate objects and equipment (Prpuric & Hadgraft, 2014). Through laboratories, demonstrations, educational games, simulations, field trips, and other interesting activities, students in secondary school classes have many opportunities to be engaged actively in the learning process (Wilson, 2013).

Chang (2014) investigated the effectiveness of teacher-centered and learner-centered pedagogical strategies on the performance of students. The study found that learner-centered strategies were more effective in influencing the perception of students towards science subjects. Students placed more value on active participation in-group discussions than attendance of lectures. Learner-centered strategies foster greater flexibility in teaching and stimulate intellectual engagement with teachers and among students (Chang, 2014).

Osodo et. al (2016), investigated the influence of instructional strategies on learners' achievement in Kiswahili language in secondary schools. The study found a positive relationship between instructional strategies and learners' academic achievement. Besides, learning achievement was seen to increase with more learner-centered teaching strategies. Furthermore, Muraya and Kimano (2013) found that cooperative learning (learner-centered) approach resulted in significantly higher mean achievement scores compared to regular teaching (teacher-centered) method. The study concluded that learner-centered strategy was an effective teaching approach, which should be adopted by biology teachers.

A study conducted by Akinfe et. al (2012) on teachers' quality as correlates of students' academic performance in Biology in senior secondary schools in Ondo State,

results revealed that teachers' use of appropriate instructional strategies is paramount to students' improvement in academic performance. Odundo (2013) emphasized that learning achievement was also associated with teacher-centered instructional strategies, including lecture, dictation and chalkboard notes, as well as learner-centered approaches, including group discussions, take-way assignments and brainstorming. On the other hand, Lance (2001) pointed out that the use of instructional media can enhance academic achievement.

Adekoya and Olatoye (2018) found demonstration strategy brought the most significant change in the achievement of students in agricultural science. This might be due to the interaction and friendliness that the strategy provided for the students. Students in the demonstration strategy group were better motivated to learn; this might be as a result of the opportunity to interact with the teacher and also ask questions in a friendly environment. The demonstration learning strategy encourages collaboration in some form, either through small groups, student-led presentations, or whole-class evaluations of project results. Demonstration strategy of learning shares some overlapping characteristics with peer-tutoring teaching strategy and appears to be an equivalent or slightly better model for producing gains in academic achievement, although results vary with the quality of the project and the level of student engagement (Adekoya & Olatoye, 2018).

On the study conducted by Daso (2013), findings revealed that there is a significant relationship between teachers' instructional strategies and students' achievement. According to Al-Hebaishi (2012), to teach and learn more effectively, instructors and learners need to better understand and appreciate these individual differences and how they affect the learning process. It assists them in planning their learning and developing strategies that cope with different learning situations in order

to make learning more meaningful and effective. Furthermore, it becomes one of the most important responsibilities of instructors today is to identify how their students learn and discover factors affecting the learning process in the classroom.

Sarasin (2006) stated that this knowledge is helpful for instructors in various ways: It supplies them with information about their students like strengths, weakness, why they prefer certain activities, how they behave in group work, participate in the classroom, solve problems etc. It encourages them to use methods, arrange materials and engage the students in activities that meet their needs and accommodate various learning styles. It helps them reconsider learning problems resulting from the mismatch between students' learning styles and teaching methods. Danquah (2017) conducted in-depth inquiry into the relevance of student motivation and its relationship with higher achievement. Descriptive research design was adopted for the study. Using stratified sampling technique, 60 students were sampled from three public schools in Kumasi Metropolis. The study found a positive and significant relationship between the use of effective instructional strategies with student performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter discusses the methods and procedure in addressing the research problem relating to the study. The study encompasses the research design, population, sample size and sampling technique, data collection instrument, data collection procedure, and method data analysis.

3.1 Research Design

This study adopted descriptive survey research design. Babbie and Mouton (2001) viewed descriptive survey as the method of research that simply looks with intense accuracy at the phenomena of the moment and then describes precisely what the research sees. This is a more appropriate research design for the study because it helped the researcher to determine the individual opinions about issues which help to identify their important beliefs and attitudes in order investigate the perceived influence of instructional strategies on academic performance of students. This method (survey) uses a smaller group of selected people but generalizes the results to the whole group from which the small group was chosen.

3.2 Population of the Study

Mugenda and Mugenda (2003), define population as the total number of gathering of people or things having comparative qualities and are considered under fields of request. The target population of the study comprised 689 teachers at the 51 public Junior high schools in Ejisu Municipality (First Quarter Progress Report, Ejisu Municipality, 2021). The accessible population was 138 teachers of public junior high schools at Ejisu Municipality. Teachers were included because they implement the

school educational programmes, and are entrusted with ensuring learners get the best out of teaching, to realise improved performance.

3.3 Sample and Sampling Technique

Sample is a small group of a larger and identifiable groups, Avoke, (2005) continued that, samples usually reflect subset of the entire population of interest to the researcher. The researcher determined the sample size from the target population. To arrive at the sample size, 20% of the total public junior high schools and teachers were selected to participate in the study based on Gay (1992) sample size determination. Gay (1992) highlights that a large population is that which has more than 100 subjects, and sample size of 10%-20% is a good representation. Therefore, a total of ten (10) JHS schools were selected from the fifty-one (51) junior high schools.

Simple random sampling technique was used in selecting the JHS schools and the teachers. During the selection, 51 pieces of paper representing the number of schools were used. These papers were put into a container and shuffled, and the researcher picked a piece of paper from the container. The process of picking was done until each school had a chance of being picked. After the exercise, all the picked pieces of paper were selected.

The teachers were selected from the 10 sampled schools using simple random sampling. Simple random sampling was used where every teacher in each school was given an equal chance of inclusion in the sample. In the selection of the teachers, a number was given to every teacher at each school selected. By picking any number at random, the required numbers of respondents for each category at each school selected were included in the final sample. One hundred and thirty eight (138) teachers were selected for the study.

3.4 Instrument for Data Collection

Questionnaire was used as research instrument to collect data for the study. The questionnaire was designed for selecting information from the 138 students in the ten selected public Junior High Schools in the Ejisu Municipality. Creswell (2005) further described questionnaire as, a form used in survey design that participants in a study complete and return. It is a mechanism which information is gathered by a researcher, asking forms of questions to respondents on a topic being researched.

The questionnaire was divided into two (2) sections A and B. Section “A” consisted of personal information of the respondents, whereas Section “B” was made up of various questions that answer the developed research questions. The section B reflect the constituents of the Likert scale of which the respondents are expected to respond to statements raised. Respondents were made to tick (✓) the created boxes of columns where they strongly agree; agree; disagree and strongly disagree to the given statements. In this study, the Likert scale which has five (5) columns from number one (1) to five (5). The Likert scale provided the basis for neutral response, as well as ranking highest and lowest responses of respondents in the study.

3.5 Validity of Data Instrument

The researcher ensured the validation of the questionnaire in various ways by utilizing different approaches. In an attempt to ensure that the questionnaire was measured what they are supposed to measure, the researcher design the questionnaire with reference to the purpose of the study and the pertinent research questions. Secondly, the researcher gave a draft to her supervisor to check whether the items measure the intended purpose (face validity). The supervisor finds out whether the items cover all the research questions (content validity) and the extent to which the items measure specific construct (construct validity). The examination of the items

helps the researcher to reshape and reconstruct items which were not clear to the respondents.

3.6 Pilot-testing of Instrument

The questionnaire was pilot-tested before actual data collection. This enabled a revision of the questionnaire before actual data collection. The pilot testing was done to determine the reliability of the instrument. The pilot test was done at Kyerekrom MA JHS which was not part of the schools selected for the study. After the exercise, the collected data was analysed to assess whether they were reliable and valid, by conducting reliability test. Concerns raised by the respondents were duly noted. After the pre-testing, the necessary modifications were made, before the actual fieldwork began. Cronbach's alpha reliability test was conducted and it yielded coefficient of 0.721. This coefficient was deemed as high enough to justify the use of the instrument for the study.

3.7 Method of Data Analysis

The returned questionnaires were scrutinized for errors, omissions, completeness and inconsistencies and were found to be adequately completed and therefore suitable for analysis. The data collected was processed and analysed using frequencies, percentages, mean and standard deviation with the aid of Statistical Package for Social Sciences (SPSS) version 23.0. This was used to summarize the data. Correlation was used in order to analyze the relationship that exist between instructional strategies and students' academic performance.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter presents and discusses findings from the field. The first part discusses the background information of the respondents, the second part discusses findings on the instructional strategies used by teachers in public JHS, factors that determine teachers' choice of instructional strategy, and the relationship that exist between instructional strategies and academic performance of students

4.1 Response Rate

The sample size of teachers was 138 from which 118 filled in and returned the questionnaires making a response rate of 85.5%. This response rate was acceptable to make conclusions for the study. Mulusa (1998) says that 50.0% response rate is adequate, 60.0% is good and 70.0% very good. Therefore, 85.5% response rate was considered very good to provide required information for the purpose of data analysis.

4.2 Demographic Information

Demographic information of the respondents was sought; the researcher deemed it necessary to look into demographic information of teachers because they make a person who he or she is. Personal characteristics such as gender, age, educational level, and the number of years the teachers have been in their current teaching field were ascertained.

4.2.1 Distribution of Teachers' Gender

The study sought information on the gender distribution of teachers in involved in this study. The findings are presented in Figure 4.1.

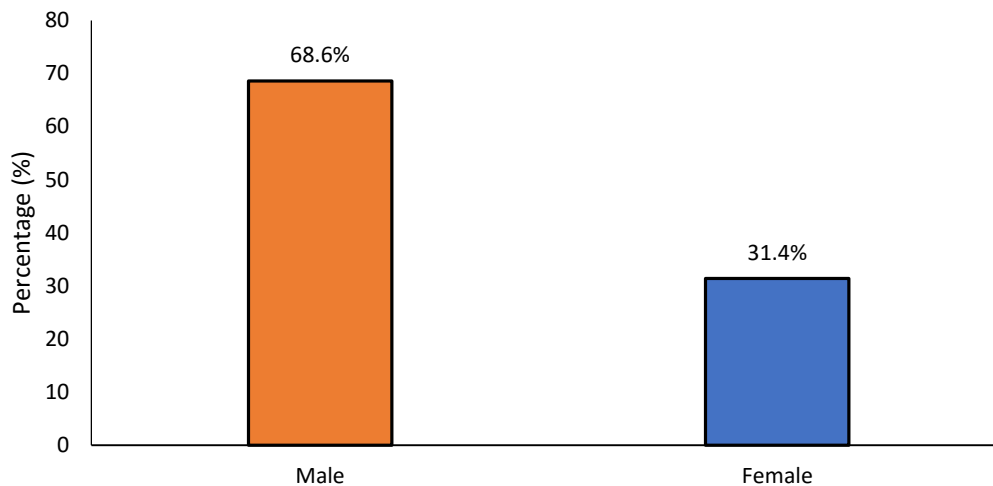


Figure 4. 1: Gender of Respondents
Source: Researcher's Field Work, 2022

From the study findings majority of the respondents were males. In all 81 males, representing 68.6% while the rest were made up of 37 female teachers, representing 31.4%. These finding depicts that male teachers were in representation as compared to their female counterpart at the selected public Junior High Schools in Ejisu Municipality in the Ashanti Region of Ghana.

4.2.2 Distribution of Teacher Age Group

In this section, the researcher was interested to know the age group of teachers and in responding to this, teachers indicated their age group. Figure 4.2 shows the results

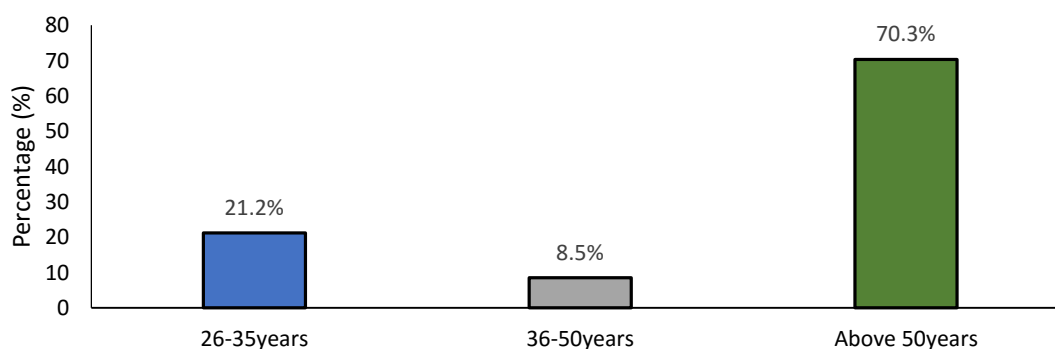


Figure 4. 2: Age Distribution of teachers
Source: Researcher's Field Work, 2022

The findings in Figure 4.2 revealed that, 25 of the teachers, representing 21.2% were aged between 26-30 years of age; while 10 of them, representing 8.5% were between 36-45 years. On the other hand, 83 respondents constituting 70.3% were above 50 years. This indicates that majority of the selected teachers were above 46 years. This implies that majority of the teachers teaching the various junior high schools in New Juaben Municipality are matured.

4.2.3 Distribution of Teachers by Level of Education

The researcher enquired on the teacher's level of education. The findings are presented on the Figure 4.3.

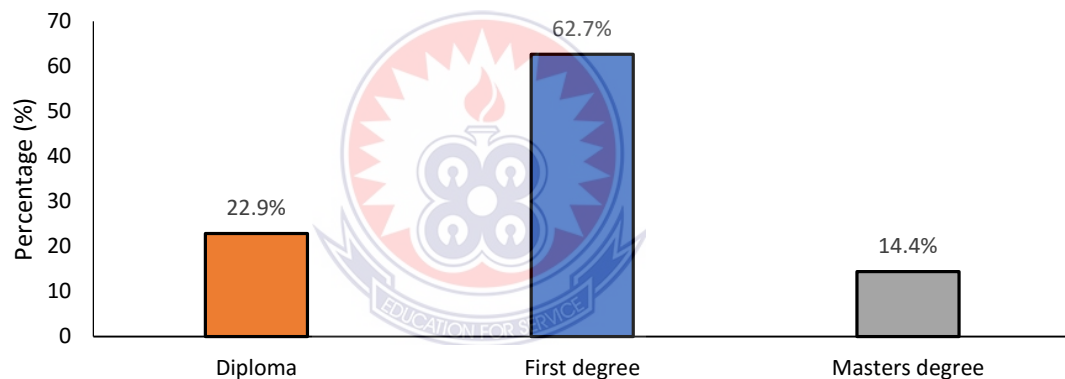


Figure 4. 3: Educational level of teachers

Source: Researcher's Field Work, 2022

According to the study findings more than half ($n=74$) of the respondents constituting 62.7% were first degree holders; and 27 of the respondents, representing 22.9% were Diploma holders. In addition, 17 of the respondents, constituting 14.4% were master's degree holders. This indicates that the teachers have good educational background. High levels of confidence result to high levels of competency, the availability of knowledge requires that teachers possess skills and knowledge appropriate for their responsibilities.

4.2.4 Distribution of Teacher's Number of Years Worked in Current School

The study enquired on the teacher's number of years worked in their current teaching field. The findings are presented on the Figure 4.4

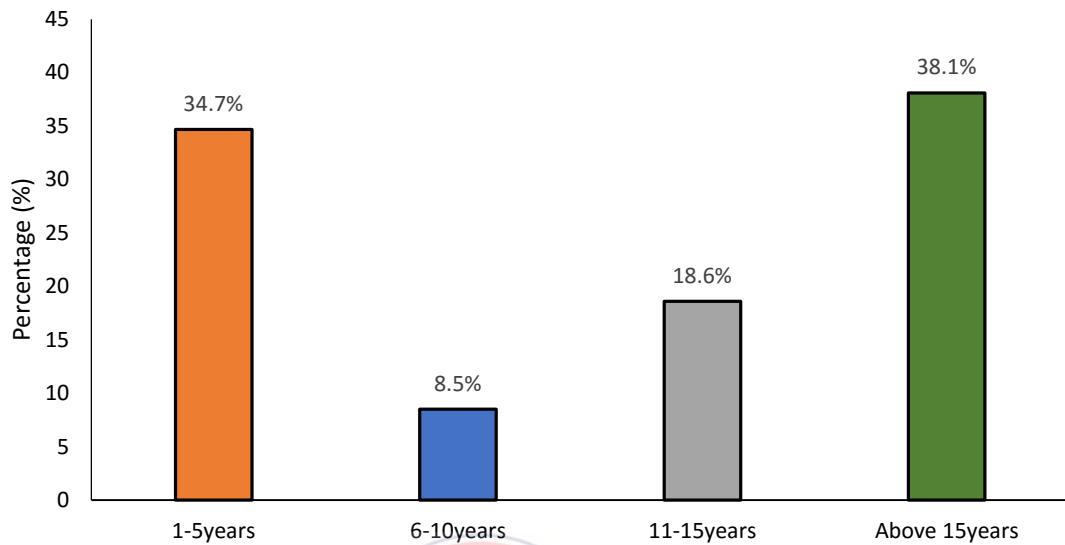


Figure 4. 4: Teachers number of years worked in current institution

Source: Researcher's Field Work, 2022

According to the findings, 41 of the respondents, representing 34.7% had been in their current teaching field from 1 to 5 years, 10 of the teachers, representing 8.5% had been in the current teaching field for 6 to 10 years, while 22 of them, representing 18.6% had been in the current service for period between 11 to 15 years. However, 45 of the respondents, made up of 38.1% had been in the current service for more than 15 years. This implies that majority of the teachers have been in their current teaching post for 5 to 10 years and also have undergone an education system that had enlightened them on need to know when, why and how to use manipulative effectively in the classroom as well as opportunities to observe; first-hand impact of allowing learning through exploration with concrete objects.

4.3 What are the instructional strategies used by teachers in public junior high schools at Ejisu Municipality?

The first research question sought to analyse the instructional strategies used by teachers in public junior high schools at Ejisu Municipality. The study assessed the teachers level of agreement with the various instructional strategies used in public junior high schools. It should be noted that responses for strongly agree and agree were merged in the write-up to represent 'agree' while that of disagree and strongly disagree were also merged to represent "disagree". However, that of Uncertain (U) stood on its own in the write-up. Table 4.1, 4.2, and 4.3 presents the results gathered on instructional strategies used by teachers

Table 4. 1: Responses on student centered instruction strategy used by teachers

S/N	Statements	Responses					Mean	Remarks
		1=SD	2=D	3=U	4=A	5=SA		
		F %	F %	F %	F %	F %		
1.	Providing variety of learning activities to support students	6 5.1	13 11.0	0 0.0	63 53.4	36 30.5	3.93	Agreed
2.	Communicate clear teaching/learning objectives to students	3 2.5	21 17.8	3 2.5	54 45.8	37 31.4	3.86	Agreed
3.	Promote positive teacher-student relationship	5 4.2	24 20.3	3 2.5	47 39.8	39 33.1	3.77	Agreed
4.	Pays close attention to the learning needs of all students in the class	8 6.8	22 18.6	3 2.5	51 43.2	34 28.8	3.69	Agreed
5.	Give students opportunities to develop clear classroom expectations	28 23.7	44 37.3	2 1.7	33 28.0	11 9.3	2.22	Disagreed
6.	Encourage students of mixed abilities to work together	38 32.2	59 50.0	1 0.8	15 12.7	5 4.2	2.19	Disagreed
7.	Put in place counselling sessions to increase students self-awareness	35 29.7	43 36.4	5 4.2	29 24	6 5.1	2.07	Disagreed

Source: Researcher's Field Work, 2022 () Percentages in brackets ; $\bar{x} \geq 3.0$ =agreed
 Key: SD = Strongly Disagree, D = Disagree, U= Uncertain, A = Agree, SA = Strongly Agree

From Table 4.1, it appeared that teachers provide variety of learning activities to support students, 99 of the respondents, representing 83.9% agreed, while 19 of

them, made up of 16.1% disagreed to that effect, with a mean of 3.93. This means that teachers provide variety of learning activities to support students in public junior high schools at Ejisu Municipality. Teachers can use student centered instruction to guide and support students' learning style in the classroom. Tiwari and Panwar (2014) in their study opined that; teachers adopt variety of teaching methods to encourage and motivate students in the classrooms.

Moreover, the respondents agreed that teachers communicate clear teaching/learning objectives to students, 77.2% of the respondents agreed, while few 20.3% of the respondents disagreed, whereas 2.5% of the respondents remained uncertain to the statement. This statement reflected a mean of 3.86 indicating that teachers communicate clear teaching/learning objectives to students. This finding coincides with the findings of Walters et al. (2014) who reiterated the shift in teaching instruction from teacher centered teaching to student centered instruction. They argued that student centered instruction promotes effective communication of teaching objectives to students. It helps students understanding, deep learning, problem solving, critical thinking of subject taught in class.

Again, the respondents revealed that the promote positive teacher-student relationship. As many as 86 (72.9%) of the respondents agreed, while 29 (24.5%) of the respondents disagreed; 3 (2.5%) of the respondents remained uncertain to the statement with a mean score of 3.77. The finding implies that teacher-students relationship is promoted at the public junior high school at Ejisu Municipality. The finding aligns with Freire and Amado (2009) that students centered instruction ensures inter-personal relationships between teacher and student, which translates into positive attitudes, behaviours, values and practices in the school.

The Table further indicates 85 (72.0%) of the respondents agreed of paying

close attention to the learning needs of all students in the class, 30 (25.4%) of the respondents disagreed, while 3 (2.5%) of the respondents remained to that effect with a mean of 3.69. This affirmed that teachers pay close attention to the learning needs of all students in the class. The finding buttresses with Owoyemi and Adesoji's (2012) that effective student centered teaching promotes paying attention to students learning needs which impart in students a sense of responsibility, self-control and realization of optimal learning.

On the contrary the respondents disagreed of giving students opportunities to develop clear classroom expectations (mean=2.22), encouraging students of mixed abilities to work together (mean=2.19), and putting in place counselling sessions to increase student's self-awareness (mean=2.07). These statements failed to meet the predetermined cut-off point of 3.0.

The finding reveals that the teachers encourage students centered instructional strategy by providing variety of learning activities to support students, communicating clear teaching/learning objectives to students, promote positive teacher-student relationship, and paying close attention to the learning needs of all students in the class. The findings concur with the findings of Owoyemi and Adesoji (2012) and Stoop (2011) that that teachers should use student centered strategies which, guide learners to be responsible and to realise optimal learning, employing variety of learning activities to support students and encourage teacher-student relationship.

Table 4. 2: Responses on teacher centered instruction strategy

S/N Statements	Responses					Mean	Remarks
	1=SD	2=D	3=U	4=A	5=SA		
	F %	F %	F %	F %	F %		
1. Students comply with strict and well define expectations, rules and regulation in the classroom	7 5.9	9 7.6	2 1.7	49 41.5	51 43.2	4.08	Agreed
2. Class assignments are undertaken independently and silently by students	5 4.2	9 7.6	3 2.5	78 66.1	23 19.5	3.89	Agreed
3. Students are actively involved in undertaking the tasks while listening to teachers' instruction	5 4.2	13 11.0	3 2.5	75 63.6	22 18.6	3.81	Agreed
4. Dominates the teaching of the students in the classroom	14 11.9	21 17.8	1 0.8	57 48.3	25 21.2	3.49	Agreed
5. Remains the central person who gives several demonstrations of a complete operation	17 14.4	50 42.4	1 0.8	19 16.1	31 26.3	2.97	Disagreed
6. There is more emphasis on mastery of learning and recall of information in the learning process	37 31.4	52 44.1	3 2.5	19 16.1	7 5.9	2.21	Disagreed
7. Used lecture method during lesson	34 28.8	62 52.5	4 3.4	11 9.3	7 5.9	2.11	Disagreed

Source: *Researcher's Field Work, 2022* () Percentages in brackets ; $\bar{x} \geq 3.0$ =agreed
 Key: SD = Strongly Disagree, D = Disagree, U= Uncertain, A = Agree, SA = Strongly Agree

From Table 4.2, it is observed that students comply with strict and well define expectations, rules and regulation in the classroom. As many as 49 (41.5%) of the respondents agreed, 9(7.5%) of the respondents disagreed to that effect. However, 2 (1.7%) of the respondents were uncertain with a mean score of 4.08 indicating that students comply with strict and well define expectations, rules and regulation in the classroom by adopting teacher centered instruction strategy. Garrett (2008) revealed that teacher centered instruction involves teacher-exerting control through identification of well-designed routines, rules and regulations to be followed and punishments.

Moreover, with a mean score of 3.89 the respondents agreed that class assignments are undertaken independently and silently by students. Statistically, 78 (66.1%) of the respondents agreed, 9 (7.6%) of the respondents disagreed to the statement. However, 3 (2.5%) of the respondents remained uncertain to the statement. Again, the respondents revealed that students are actively involved in undertaking the tasks while listening to teacher's instruction, 75 (63.6%) of the respondents agreed to that effect, whereas 13 (11.0%) disagreed to that effect. Meanwhile 3 (2.5%) of the respondents were uncertain with a mean of 3.81. This implies that with teacher centered approach, the teacher is respected as holder of information and learners as receiver of information and are not provided opportunity to develop own knowledge. The finding concurs with Wilson and Mulcahy's (2010) study that teacher remains the central person who gives several demonstrations of a complete operation and uses explanations that must be applied correctly.

In addition, on the issue that teachers dominate the teaching of the students in the classroom, 57 (48.3%) of the respondents agreed, while 21 (17.8%) of the respondents disagreed and 1 (0.8%) remained uncertain to the statement. The statement reflected a mean of 3.56. The finding is in agreement with Marzano and Toth (2014) indicated that in teacher centered instruction, teacher dominates teaching and seem to focus on own learning than the student does. Additionally, the report shows that 42.4% of lessons observed concentrated on helping students interact with the content; 16.1% on helping students practice and deepen new knowledge; and less than 2.5% of the lessons observed were dedicated to the highest level of cognitive complex tasks. This means that learners acquire more when the lesson uses practical learning activities.

On the contrary, the respondents disagreed to the statement that teachers remain the central person who gives several demonstrations of a complete operation

(mean=2.97), there is more emphasis on mastery of learning and recall of information in the learning process (mean=2.21), and lecture method is used during lesson (mean=2.11). These statements failed to meet the predetermined cut-off point of 3.0.

The findings indicate that through teacher-centered approaches, students comply with strict and well define expectations, rules and regulation in the classroom, class assignments are undertaken independently and silently, students are actively involved in undertaking the tasks while listening to teachers' instruction, and teachers dominates the teaching of the students in the classroom. The finding concurs with Navaz (2013) that teacher centered approach is characterized by teacher directed learning, memorization of facts, talking, students being passive during the discussion and depending on the teacher for learning. The finding agrees with the finding of Schraw and Robinson (2011) which indicated that teacher centered instruction encouraged limited acquisition of high cognitive skills, problem solving, critical thinking skills, analysis and interpretation, decision-making and self-regulation.

Table 4. 3: Responses on assessment instructional strategy used

S/N	Statements	Responses					Mean	Remarks
		1=SD	2=D	3=U	4=A	5=SA		
		F %	F %	F %	F %	F %		
1.	Provide timely feedback of student's performance	6 5.1	11 9.3	1 0.8	37 31.4	63 53.4	4.19	Agreed
2.	Organises quizzes and test after each topic taught	2 1.7	6 5.1	0 0.0	75 63.6	35 29.7	4.14	Agreed
3.	Encourages peer assessment during lessons	11 9.3	12 10.2	2 1.7	70 59.3	23 19.5	3.69	Agreed
4.	Integrate assessments with teaching and learning	25 21.2	29 24.6	4 3.4	41 34.7	19 16.1	3.00	Agreed
5.	Always evaluate student's learning, academic achievement and skill acquisition	24 20.3	60 50.8	2 1.7	21 17.8	11 9.3	2.45	Disagreed

Source: Researcher's Field Work, 2022 () Percentages in brackets ; $\bar{x} \geq 3.0$ =agreed
 Key: SD = Strongly Disagree, D = Disagree, U= Uncertain, A = Agree, SA = Strongly Agree

As displayed in Table 4.3, teachers provide timely feedback of students performance. As many as 37 (31.4%) of the respondents agreed, while 11 (9.3%) of the respondents disagreed to that effect. Meanwhile 1(0.8%) of the respondents were uncertain with a mean score of 4.19. The finding is in line with Jabbarifar (2009) study who noted that assessment strategy is an ongoing process involving developing, administering and analyzing the questions, providing feedback on the effectiveness of instruction and giving a measure on the learner's progress.

Moreover, with a mean score of 4.14 the respondents agreed that teachers organises quizzes and test after each topic taught. Statistically, 75 (63.6%) of the respondents agreed, while 6 (5.1%) disagreed to the statement. Again, the respondents revealed that teachers encourage peer assessment during lessons, 70 (59.3%) of the respondents agreed to that effect, whereas 12(10.2%) disagreed. However, 2 (1.7%) of the respondents were uncertain to the statement with a mean of 3.69. The result agrees with Gholami and Morady (2013) study that through assessments teachers organise quizzes at Iranian high school to improve students' performance on final achievement tests. They noted that achievement tests arouse practice and review, and provide opportunities for feedback.

In addition, on the issue that teachers integrate assessments with teaching and learning, 41 (34.7%) of the respondents agreed, while 29 (24.6%) of the respondents disagreed to the statement. Conversely, 4 (3.4%) of the respondents were uncertain with a mean score of 3.00. The study by William (2011) contend that assessment strategy is central to effective instruction and serves to show whether particular sequence of instructional activities have resulted in the intended learning outcomes. Accordingly, instruction used has to be adaptive to the learners needs and effective to the majority of the students. Table 4.3 further revealed that teachers do not evaluate

student's learning, academic achievement and skill acquisition. It had a mean score of 2.45 with 41 (34.7%) of the respondents agreeing to the statement. However, 60 (50.8%) of the respondents disagreeing, while 2 (1.7%) of the respondents were uncertain to the statement.

From the findings, assessment is critical in improving teaching and learning. The findings have revealed that through assessments teachers provide timely feedback of student's performance, organises quizzes and test after each topic taught, encourages peer assessment during lessons, and integrate assessments with teaching and learning. The results concur with the findings of Jabbarifar (2009) who discussed that assessment and evaluation involves collecting, analysing and interpreting information about teaching. In addition, teachers are actively involved in developing, administering and analysing questions that will more likely to improve their own teaching. The findings further concur with, Regier (2012) who posited that instruction and assessment are inseparable and teachers are required to use different strategies for student assessment taking into account student learning needs. The result in Table 4.4, shows ranking of instructional strategy used by teachers in public junior high schools at Ejisu Municipality.

Table 4. 4: Rank of instructional strategy used by teachers

Instructional strategy	No. of items	Mean	Std. deviation
Student centered instruction	7	3.019	1.2087
Teacher Centered Instruction	7	3.223	1.1764
Assessment instructional	5	3.494	1.1682
Total	19	9.736	3.5533

Source: Field work, 2022

The finding showed that assessment instructional strategy is mostly used by the teacher with the highest mean of 3.494 and a standard deviation of 1.1682, followed by Teacher centered instructional strategy with a mean score of 3.223 and a standard

deviation of 1.1764, and lastly student centered instructional strategy had least strategy used by heads of department (mean = 3.019, standard deviation = 1.2087). All the strategies adopted by the teachers had a mean score more than 3.0. The results showed that the teachers at the public junior high schools in Ejisu Municipality used varieties of instructional strategies through teaching and learning. The findings in Table 4.4 agrees with the findings of Gardner and Jeon (2009) who documented that using variety of teaching strategies through guiding students to learn and giving opportunities to demonstrate what they have learnt and the acquisition of the relevant skills influences their performance.

4.4 What factors determine teachers' choice of instructional strategy in public junior high schools at Ejisu Municipality?

This section sought to assess the factors determine teachers' choice of instructional strategy in public junior high schools at Ejisu Municipality. The study evaluated the teachers level of agreement with the factors influencing the choice of instructional strategy in public junior high schools. It should be noted that responses for strongly agree and agree were merged in the write-up to represent 'agree' while that of disagree and strongly disagree were also merged to represent "disagree". However, that of Uncertain (U) stood on its own in the write-up. The results are presented on the Table 4.5.

Table 4. 5: Responses on the factors influencing the choice of instructional strategy

S/N Statements	Responses					Mean	Remarks
	1=SD	2=D	3=U	4=A	5=SA		
	F %	F %	F %	F %	F %		
1. Number of students in the classroom	14 11.9	18 15.3	0 0.0	23 19.5	63 53.4	4.04	Agreed
2. Facilities and resources (materials) available	10 8.5	23 19.5	3 2.5	44 37.3	38 32.2	3.99	Agreed
3. Effectiveness of instructional materials	13 11.0	18 15.3	0 0.0	37 31.4	50 42.4	3.79	Agreed
4. Teacher's beliefs and values about a particular instructional strategy	23 19.5	12 10.2	0 0.0	51 43.2	32 27.1	3.78	Agreed
5. The space of time available	14 11.9	18 15.3	0 0.0	40 33.9	46 39.0	3.73	Agreed
6. Effective support from the headteacher	13 11.0	39 33.1	1 0.8	23 19.5	42 35.6	3.64	Agreed
7. Requirement of the school curriculum	15 12.7	20 16.9	1 0.8	48 40.7	34 28.8	3.59	Agreed
8. Nature of the subject matter and the objectives to be attained	13 11.0	19 16.1	3 2.5	65 55.1	18 15.3	3.54	Agreed
9. Interest and ability of teacher	33 28.0	35 29.7	5 4.2	22 18.6	23 19.5	2.72	Disagreed
10. Teachers self-efficacy and motivation	36 30.5	37 31.4	0 0.0	39 33.1	6 5.1	2.51	Disagreed
11. School context and internal policy	25 21.2	61 51.7	0 0.0	22 18.6	10 8.5	2.42	Disagreed
12. Flexible of a particular instructional strategy	39 33.1	40 33.9	0 0.0	33 28.0	6 5.1	2.38	Disagreed
13. Adequate knowledge about individual student's style preferences	34 28.8	51 43.2	0 0.0	31 26.3	2 1.7	2.29	Disagreed
14. Teaching and professional experience	48 40.7	41 34.7	1 0.8	20 16.9	8 6.8	2.14	Disagreed

Source: *Researcher's Field Work, 2022, () Percentages in brackets ; $\bar{x} \geq 3.0$ = great extent*
Key: SD = Strongly Disagree, D = Disagree, U = Uncertain, A = Agree, SA = Strongly Agree

As indicated in Table 4.4, it is observed that the number of students in the classroom determine the choice of instructional strategy. As many as 63 (53.4%) of the respondents agreed, while 18 (15.3%) of the respondents disagreed to that effect, with a mean score of 4.04. This showed that if the number of learners to be taught are full in the classroom, it would be more logical and efficient to use lecture teacher centered

approach. The result is in agreement with the study by Howe et al. (2000) that the adoption of a particular instruction strategy is subjective to class size and the arrangement of groups in the setting of the classroom.

Moreover, with a mean score of 3.99, the respondents agreed that facilities and resources (materials) available determines the choice of instructional strategy. Statistically, 44 (37.3%) of the respondents agreed, while 23 (19.5%) disagreed to the statement, and 3 (2.5%) remained uncertain with a mean score 3.99. The finding is in line with Abdulhareem (2002) that the kind and extent of physical facilities and the instructional material available, including community resources, affect the choice of instructional material that can be used.

Again, the respondents revealed that effectiveness of instructional materials determines the choice of instructional strategy, 50 (42.4%) of the respondents agreed to that effect, whereas 18 (15.3%) disagreed to that, with a mean of 3.79. Teachers evaluating instructional materials in terms of its effectiveness in accomplishing objectives, and the situation at hand helps in choosing the instructional strategy that will best meet the goals of the programme. Balogun (2006) explained that school environment as in physical and material resources effectiveness determines teachers adoption of instructional. In addition, on the issue that teacher's beliefs and values about a particular instructional strategy, 51 (43.2%) of the respondents agreed, while 12 (102%) of the respondents disagreed to the statement with a mean score of 3.78. Again, teachers emphasized that the space of time available influence the choice of a particular instructional strategy. Interestingly, while 40 (33.9%) of the respondents agreed, 18 (15.3%) of the respondents disagreed to the statement with a mean score of 3.73. This indicates that time is always limited and has its effect upon the kind of instructional materials used. If there is ample time, the teacher is more likely to use the

chalkboard and other techniques that encourage maximum participation. But when time becomes a limiting factor, the chalk and talk would be preferred.

Table 4.5 further revealed that effective support from the head teacher influence the adoption of a particular instructional strategy. It had a mean score of 3.64 with 42 (35.1%) of the respondents agreeing to the statement. However, 52 (44.1%) of the respondent disagreed, while, 1 (0.8%) of the respondents remained uncertain to the statement. Furthermore, on the issue that requirement of the school curriculum determines the choice of instructional strategy, 48 (40.7%) of the respondents agreed to the statement. Conversely, 20 (16.9%) of the respondent disagreed, while 1(0.8%) disagreed to the statement. A mean score of 3.59 showed that requirement of the school curriculum influence teachers choice of particular instructional strategy.

On the other hand, the teachers agreed that the nature of the subject matter and the objectives to be attained influence the choice of a particular instructional strategy. As many as 65 (55.1%) of the respondents agreed, 19 (16.1%) of the respondents disagreed, whereas 3(2.5%) remained uncertain with a mean score of 3.73. The finding agrees with Balogun (2006) that the nature of the subject matter and the objectives to be attained influence the adoption of instructional strategy. Balogun mentioned that if the subject matter is such that is diversified, it may involve the use of more than one type of instructional material to achieve its objective.

Conversely, the teachers disagreed that interest and ability of teacher (mean=2.72), teachers self-efficacy and motivation (mean=2.51), school context and internal policy (mean=2.42), flexible of a particular instructional strategy (mean=2.38), adequate knowledge about individual student's style preferences (mean=2.29), and teaching and professional experience (mean=2.14) determines the choice of instructional strategy. These statements failed to meet the predetermined cut off point

of 3.0.

It appeared from the study that number of students in the classroom, facilities and resources (materials) available, effectiveness of instructional materials, teacher's beliefs and values about a particular instructional strategy, space of time available determine teachers' choice of instructional strategy in public junior high schools. Furthermore, the study showed that effective support from the headteacher, requirement of the school curriculum, and nature of the subject matter and the objectives to be attained influence the choice of instructional strategy in public junior high schools at Ejisu Municipality. The finding concurs with Marx et al. (1997) study who reported that factors influencing the implementation of instructional strategy including time allocation, finance to acquire or improvise needed TLMs, number of students in the classroom, availability of teaching and learning resources, and opportunities for in-service training/refresher course for teachers to update their knowledge periodically in the light of new curriculum. Bakare (2006) mentioned that factors such as little or non-availability of equipped library, laboratories, requirement of the school curriculum, workshops affects the use of instructional materials.

4.5 To what extent do instructional strategy affect academic performance of students?

In order to investigate the extent to which instructional strategy affect the academic performance of students, students' academic performance was determined. This was calculated by analyzing the mean scores in for the 10 public schools basing on end term and mid-term results. Table 4.6 gives a summary of the findings.

Table 4. 6: Descriptive analysis of students' academic performance

Term	Type of Exams	Minimum	Maximum	Mean	Std. Dev.	Average Mean
First term	Mid – term	50.40	75.00	61.0381	8.40607	60.722
	End of term	45.60	85.00	60.4059	10.22131	
Second term	Mid – term	48.00	72.50	59.5415	8.60957	58.973
	End of term	47.50	70.00	58.4042	7.93164	
Third term	Mid – term	46.50	68.00	57.8085	8.17795	56.914
	End of term	45.00	65.50	56.0195	7.57110	

It is revealed in Table 4.6 that the academic performance of the students was above average. The results showed that majority of the students had a mean score of 61% in first term examinations. Correspondingly, majority of the students scored a mean grade of 59% in second term examinations. However, the students scored a mean grade of 57% in third term examinations. It can be viewed that the third term results were lower than the first and the second term examination showing deterioration of students' academic performance. Therefore, effective strategies should be employed to maintain a stable trend in performance of students.

4.5.1 Correlation Analysis on the Influence of Instructional strategy on students' academic Performance

The correlation was done to measure the relationship between instructional strategies on students' performance. The findings and presentation of results of the correlation analysis are arranged according to responses from the teachers. The findings of the study are summarized in Table 4.7.

Table 4. 7: Correlation Analysis

S/N Construct	1	2	3	4	5	6
1. Student centered instruction	1	.048	.086	.179	.205*	.256**
2. Teacher Centered Instruction		1	.012	.241**	.309**	.207*
3. Assessment instructional			1	.244**	.293**	.129
4. First term academic performance				1	.969**	.949**
5. Second term academic performance					1	.890**
6. Third term academic performance						1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 4.7, the results show that all the correlation coefficients for all the variables from the respondent categories were positive. The results indicated that the more student-centered instruction strategies are used, the more the students' performance improves. The r-values is significant for the second term academic performance ($r=0.205$, $p<0.05$), and third term academic performance ($r=0.256$, $p<0.01$).

The correlation analysis further showed a positive significant association between teacher centered instruction strategies and students first term academic performance ($r=0.241$, $p<0.01$), second term academic performance ($r=0.309$, $p<0.01$), and third term academic performance ($r=0.207$, $p<0.05$). From the results showed that the more the improvement of teacher centered instruction strategies, the more it contributes to the positive influence on students' performance. The correlation analysis results indicate that the relationship between assessment strategies and students' first term performance was positive and significant ($r=0.244$, $p<0.01$). A significant and positive relationship was also found between assessment strategies and students'

second term performance ($r=0.293$, $p<0.01$). The results mean that an improvement in assessment strategy results in positive influence on students' performance.

4.5.2 Regression Analysis Results on the Influence of Instructional Strategy and Students' Academic Performance

The regression analysis shows the output of coefficients of determination on assessment strategy and students' performance. The summary of the results are presented in Table 4.8

Table 4. 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.385 ^a	.148	.126	7.64625	.148	6.613	3	114	.000

a. *Dependent Variable: students' performance (P1)*

b. *Predictor variables: (Constant) Student centered Instruction Strategy (Sci); Teacher Centered Instruction Strategy (Tci); Assessment Strategy (Is); Resource-based Instruction strategy (Rbi).*

According to the model summary output, the variables were significantly correlated where R (coefficient of correlation) was a positive correlation of 0.385 indicating that the instructional strategies were highly related to students' academic performance. The identified independent variables (students centered, teachers centered, and assessment instructional strategy), explains only 14.8% variation in the dependent variable (students' academic performance).

The relationship was significant at critical value (0.000) since the reported p-value ($0.000<0.01$) was less than the critical value. This implies that instructional strategies had a direct impact on students' academic performance ($F=6.613$, $P=000<0.01$). The findings concur with Regier (2012) who discusses that teachers are expected to use different strategies to assess students' readiness in studying and meet their learning needs. The findings agree with Wong and Wong (2011) who explained that quality of instructional strategies adds between 15 to 20 times improvement in

students' performance. Walters et al (2014) discusses the need to use different instructional strategy, because it promotes deep students learning and improved on their performance. Colombi and Osher (2015) explained the need for effective instructional strategy to enhance active student participation in teaching and learning. Osodo et. al (2016) study found a positive relationship between instructional strategies and learners' academic achievement. On the study conducted by Akinfe et. al (2012) effective instructional strategy correlates positive with students' academic performance in Biology in senior secondary schools in Ondo State, results revealed that teachers' use of appropriate instructional strategies is paramount to students' improvement in academic performance.

Table 4. 9: Regression Coefficient

Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	64.162	4.894		13.112	.000
	Student centered instruction	1.141	.578	.172	1.975	.051
	Teacher Centered Instruction	2.052	.705	.252	2.910	.004
	Assessment instructional	2.383	.889	.233	2.681	.008

c. Dependent Variable: students' performance (PI)

The results indicated that a unit increase in average used of student-centered instruction increases the student's academic performance by 1.141 ($\beta=1.141$, $p=0.051$). This implies that student centered instructional strategy is a significant predictor of student's academic performance ($p\text{-value}<0.05$). The finding agrees with Chang (2014) that learner-centered strategies are more effective in influencing the perception of students towards science subjects. Students placed more value on active participation in-group discussions than attendance of lectures. Learner-centered strategies foster greater flexibility in teaching and stimulate intellectual engagement with teachers and

among students (Chang, 2014). Furthermore, Muraya and Kimano (2013) found that cooperative learning (learner-centered) approach resulted in significantly higher mean achievement scores compared to regular teaching (teacher-centered) method. The study concluded that learner-centered strategy was an effective teaching approach, which should be adopted by biology teachers

The findings as shown on the table show that a unit increase in average application of teacher centered instructional strategy increases the average academic performance of students by 2.052 ($\beta=2.052$, $p=0.004$). This implies that teacher centered instructional strategy have a positive influence on students academic performance ($p\text{-value}<0.005$). This is in line with the Daso (2013) who found a significant relationship between teachers centered instructional strategy and students' achievement. According to Al-Hebaishi (2012), to teach and learn more effectively, instructors and learners need to better understand and appreciate these individual differences and how they affect the learning process. It assists them in planning their learning and developing strategies that cope with different learning situations in order to make learning more meaningful and effective. The finding agrees with the finding of Schraw and Robinson (2011) which indicated that teacher centered instruction encouraged limited acquisition of high cognitive skills, problem solving, critical thinking skills, analysis and interpretation, decision-making and self-regulation.

The findings also reveal that a unit increase in average use of assessment instructional strategy increases the average academic performance of students by 2.383 ($\beta=2.383$, $p=0.008$). This implies that assessment instructional strategy could influence students' academic performance as informed by the findings of this research ($p\text{-value} < 0.05$). This is supported by a study by Mikre (2010) who found a positive and significant relationship between assessment instruction and students' academic

performance. Mikre (2010) explained that assessment remains an indispensable part of the curriculum, which ensures that student abilities can be demonstrated as part of the outcomes of learning.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This section focuses on the findings of the study, conclusions drawn from the main findings and finally proffer recommendations.

5.1 Summary of the Study

The purpose of the study was to investigate the effects of instructional strategies on academic performance of students in public junior high schools at Ejisu Municipality in Ghana. The specific objectives of the study were to; identify the instructional strategies used by teachers in public junior high schools, factors that determine teachers' choice of instructional strategy in public junior high schools, and investigate the relationship that exist between instructional strategies and academic performance of students.

Descriptive survey research design was employed using the quantitative approach for the study. The target population of the study comprised 689 teachers at the 51 public Junior high schools in Ejisu Municipality. From the target population, a sample of 138 teachers were selected for the study using simple random sampling method. The main instrument for this study was questionnaire. The questionnaire was mostly Likert scale type. Data collected were edited and computed using SPSS. Percentages, frequencies and means were used to analyse the data. Correlation and regression analysis were used to ascertain the relationship between instructional strategies and students' academic performance. The results were presented using bar charts and tables.

5.2 Summary of Key Findings

On the research question one, the study revealed that teachers used varieties of instructional strategies through teaching and learning.

On the research question two the study found that the number of students in the classroom, facilities and resources available, effectiveness of instructional materials, teacher's beliefs and values about a particular instructional strategy, space of time available determine teachers' choice of instructional strategy in public junior high schools.

On the research question three, the results indicated that a unit increase in average used of student-centered instruction increases the student's academic performance. Also, the findings as showed that application of teacher centered instructional strategy increases the academic performance of students. The finding further revealed that the use of assessment instructional strategy increases the average academic performance of students. However, the study found that instructional strategies had a direct influence on students' academic performance.

5.3 Conclusions

Effective instructional strategy has the potential to facilitate effective teaching and learning for students. Different instructional strategies fit different learning settings and elicit various anticipated outcomes. It emanated from the present study that teachers at the public junior high schools in Ejisu Municipality used varieties of instructional strategies through teaching and learning. The teachers adopt strategies that make their work easier based on their perceptions and attitude, personal subjective preferences, and institutional and disciplinary cultures.

According to the study, number of students in the classroom, facilities and resources available, effectiveness of instructional materials, teacher's beliefs and values about a particular instructional strategy, space of time available determine teachers' choice of instructional strategy in public junior high schools. The study showed that a unit increase in average used of student-centered instruction, teacher centered instruction and assessment instructional strategy increases the average academic performance of students. However, the study discovered that instructional strategies had a direct influence on students' academic performance.

5.4 Recommendations

The following recommendations were made for the study

1. It is recommended that Municipal Education Directorate need to focus on policies or guidelines that advances active students' learning, better students behavior management, high learning expectations and student's social emotional development.
2. It is recommended that Municipal Director to retrain teachers to be competent and meet high standards in instructional strategies to promote teaching and learning.
3. It is recommended that the Ghana Education Service (GES) should continuously review educational policies to support teachers in their teaching by underscoring the importance of administering assessments that gauge students' learning progress and performance. To ensure accuracy, reliability and validity, assessments should be subjected to constant quality checks.

5.5 Suggestion further research

The researcher suggests that the study was conducted in Ejisu Municipality in Ashanti Region of Ghana, a similar study should be done in other Region to establish the use of instructional strategies vis a vis performance, and study also extended to private junior high schools.



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APPENDIX A

**AKENTEN APPIAH-MENKAH UNIVERSITY OF SKILLS TRAINING AND
ENTREPRENEURIAL DEVELOPMENT**

QUESTIONNAIRE FOR TEACHERS

PREAMBLE: The researcher, a student of the Akenten Appiah-Menkah University of Skills Training and Entrepreneurial Development (AMUSTED) is seeking information relating to the topic “**Influence of instructional strategies on students’ academic performance. A case study of public junior high school in Ejisu Municipality**”. The information that you are to provide is purely for an academic exercise and would be treated with necessary confidentiality. Please offer answers to all the questions in all frankness as much as possible and to the best of your knowledge. You may tick (✓) where applicable or give a brief explanation where necessary.

Section A: Background Information

1. Age: 18-25 () 26-35 () 36-45 () 46 and above ()
2. Gender: Male () Female ()
3. Educational Level: Diploma () First Degree () Masters ()
Others (specify):
4. How long have you worked in this institution? 1-5years () 6-10years ()
11-15years () 15years and above ()
5. What is your marital status? Single () Married () Divorced ()
Separated () Widowed ()

Section B: Instructional strategies used by teachers in public junior high schools

6. Please indicate the extent to which you agree or disagree on the following statements about the instructional strategies used in public junior high schools. Please rate using a scale of 1 to 5 where 1 represents strongly disagree, 2 represents disagree, 3 uncertain, 4 represents agree and 5 represents strongly agree. *Please tick [✓] the appropriate box below.*

S/N	Statement	Rating				
		1	2	3	4	5
	Student Centered Instruction Strategy					
1.	Encourage students of mixed abilities to work together					

2.	Promote positive teacher-student relationship					
3.	Pays close attention to the learning needs of all students in the class					
4.	Communicate clear teaching/learning objectives to students					
5.	Give students opportunities to develop clear classroom expectations					
6.	Providing variety of learning activities to support students					
7.	Put in place counselling sessions to increase students self-awareness					
	Teacher Centered Instruction Strategy					
1.	Dominates the teaching of the students in the classroom					
2.	Students are actively involved in undertaking the tasks while listening to teachers instruction					
3.	Remains the central person who gives several demonstrations of a complete operation					
4.	Used lecture method during lesson					
5.	Class assignments are undertaken independently and silently by students					
6.	Students comply with strict and well define expectations, rules and regulation in the classroom					
7.	There is more emphasis on mastery of learning and recall of information in the learning process					
	Assessment Instructional Strategy					
1.	Provide timely feedback of students' performance					
2.	Organises quizzes and test after each topic taught					
3.	Encourages peer assessment during lessons					
4.	Always evaluate student's learning, academic achievement and skill acquisition					
5.	Integrate assessments with teaching and learning					
	Resource-based Instruction Strategy					
1.	Utilise resources effectively					
2.	Provide high quality multiple learning materials both in print and non-print					
3.	Provide class based learning facilities					
4.	Provide physical learning environment to ensure students active participation in their learning					
5.	Make appropriate selection and use of ICT resources					
6.	Establish library resources to enhance access of learning materials and research skills					

Section C: Factors that determine the choice of instructional strategies

7. Please indicate the extent to which you agree or disagree on the following statements about the factors that determine the choice of instructional strategies in teaching at public junior high schools. Please rate using a scale of 1 to 5 where 1 represents strongly disagree, 2 represents disagree, 3 uncertain, 4 represents agree and 5 represents strongly agree. *Please tick [] the appropriate box below.*

S/N	Statement	Rating				
		1	2	3	4	5
1.	Interest and ability of teacher					
2.	Adequate knowledge about individual student's style preferences					
3.	Effectiveness of instructional materials					
4.	The space of time available					
5.	Number of students in the classroom					
6.	Nature of the subject matter and the objectives to be attained					
7.	Facilities and resources (materials) available					
8.	Teacher's beliefs and values about a particular instructional strategy					
9.	Teaching and professional experience					
10.	Effective support from the head teacher					
11.	School context and internal policy					
12.	Requirement of the school curriculum					
13.	Teachers self-efficacy and motivation					
14.	Flexible of a particular instructional strategy					