UNIVERSITY OF CAPE COAST

A STUDY OF PERFORMANCE-BASED ASSESSMENT PRACTICES OF TEACHERS IN SECOND CYCLE INSTITUTIONS IN THE CAPE COAST METROPOLIS

EBENEZER TAKYI-WADIEH

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BY

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Thesis submitted to the Department of Education and Psychology of the Faculty of Educational Foundations, College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy degree in Measurement and Evaluation

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DECLARATION

Candidate's Declaration

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

Candidate's Signature: …….. Date: …….

Name: ……..

Supervisors' Declaration

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

Supervisor's Signature: ……..…… Date: ……..…….

Name: …….

ABSTRACT

The study assessed PBA practices of teachers in second cycle institutions in the Cape Coast Metropolis. The study was guided three research questions and three hypotheses. The study was carried out employing the descriptive survey design. A total of 426 public second-cycle teachers (Out of 1299) were proportionately sampled for the study. Questionnaires were adapted for the study. Reliability was ascertained using the internal consistency method. Pilot testing revealed that the Cronbach's alpha of all the four scales were; knowledge (.733), Beliefs (.727), Practices (.747) and challenges (.839). The data collected were analysed using means, standard deviations, frequency and percentages; and inferential statistics (Structural equation modelling, moderation, and mediation analysis). Teachers used in the study had a moderate level of knowledge, often practised PBA but faced several challenges such as large class sizes, inadequate time, resources, and too much workload. Teachers' knowledge of PBA predicted their PBA practices. PBA Beliefs significantly mediated the relationship between knowledge of teachers and PBA practices of teachers. The study concluded that current teachers' knowledge and practice of PBA may be inadequate since the current market trends call for practical application of knowledge learnt in the classroom to help solve real life problems. The Ministry of Education and Ghana Education Service as well as heads of the various institutions should encourage teachers to practice PBA regularly to help students gain the necessary skills to function and contribute to development.

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KEYWORDS

Alternate Assessment

Authentic Assessment

Beliefs

Constructivism

Knowledge

Performance-Based Assessment

Practices

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DEDICATION

Dedicated to my parents, James Kofi Wadieh and Agnes Cobbinah.

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LIST OF ACRONYMS

JHS-	Junior high school
PBA-	Performance based assessment
PBAM-	Performance based assessment methodologies
SHS-	Senior high school

CHAPTER ONE

INTRODUCTION

The current educational system in Ghana places a strong emphasis on traditional assessments. Written examinations receive significant attention in this assessment (Bai, Xu & Ikem, 2013; Sumardi, 2017). Because the focus is solely on formal assessment and the attainment of high test scores under test conditions, there is limited opportunity to identify the students' practical abilities in these situations (Sumardi, 2017). Recent studies have demonstrated the efficiency of performance-based assessments where students are taught how to put theory into practice in a classroom setting (Tejeda & Gallardo, 2017). However, Sundeme (2019) indicates that most Ghanaian basic school teachers do not practice performance-based assessment. Therefore, the current study seeks to assess the performance-based assessment practices teachers within second-cycle institutions.

Background to the Study

Assessment refers to actions carried out by both teachers and students with the goals of collecting data that can be used to improve teaching and learning (Amua-Sekyi, 2016). Assessment is a central part of education because it allows teachers to measure their students' learning and the efficacy of their methods of instruction (Huba & Freed, 2000). Assessment is utilized not only in the process of selecting students but also in the process of inspiring students. Due to the presence of assessment, class attendance remains consistently high. Furthermore, it focuses on providing formal evidence of a learner's capability (Awoniyi & Fletcher, 2014). This entails the teacher providing feedback on student work based on their observations. Teachers usually take students data

using numerous techniques. Some of these include homework, tests, and essays. Others also include reports, practical procedures and classroom discussion of issues. Gathering information about what a student does or does not know is necessary for all of these activities.

Teachers are able to gather information about what their pupils have achieved through the process of assessment, which enables them to select which educational approaches or techniques are most appropriate. As a result, educators can enhance their pedagogical practices by measuring the progress of their students. Additionally, the assessment enables the students to become aware of their respective positives and weaknesses. These are usually areas that have been evaluated, thereby assisting them in determining which aspects of their performance should be maintained and which should be improved in order for them to be able to attain the desired learning outcomes (Latipah & Purnawarman, 2019). In addition, assessment serves the purpose of meeting public expectations on standards and accountability; however, the two most important purposes for assessing students are to provide formative feedback and to assign summative grades (Biggs & Tang, 2011, p. 195). As a direct result of this, assessment has been classified in two main categories. One is that it can either summative or formative, contingent on how the outcomes are implemented (Dunn & Mulvenon, 2009).

At the completion of a course or program, students are given a grade based on the results of a summative assessment, or they are accredited based on the results of a summative assessment. When the teaching and learning experience has come to a close that is the time when summative assessments are carried out. Its objective is to assess how well pupils have learnt the material

that they were expected to learn (Biggs & Tang, 2011). Generally speaking, the purpose of summative assessment is to aid in making a (final) judgement regarding a learner's accomplishment in a programme and their potential for future achievement. Its secondary purpose is to validate learning and confer a credential. In addition, it's useful for selecting appropriate courses of study, informing others about the applicant, and establishing the learner's competency in a formal setting. Summative assessment activities are typically designed to: certify achievement and award a qualification; help make decisions about entry to other learning programs; provide information that will help others (Awoniyi & Fletcher, 2014).

During the learning process, the outcomes of the formative assessment are utilized as feedback. Both the students and the teachers need to be aware of how far along the learning process they are. The use of formative feedback has been shown to boost the learning of individual students and the teaching process overall (Biggs & Tang, 2011). A more dialogic type of language is used in formative evaluation and feedback, which is typically a departure from the traditional classroom engagement. In a traditional classroom engagement, the teacher initiates stimulus that demands feedback whiles the pupils answer these stimulus provided. Students are provided with feedback from the teacher, which is similar to a discussion (Pryor & Croussand, 2008).

According to Amua-Sekyi (2016), the import that assessments may on teaching and learning should be given greater recognition. This is because it is arguable that a better knowledge of this influence might help usher in reforms that better foster the kinds of thought processes and reasoning abilities that are sought for in the classroom. Evolving from the traditional viewpoint, in which

the assessment came at the end of the learning process (summative assessment), the assessment process is now seen not as an activity that runs in parallel to the learning process but rather as one that intertwines and creates interactive and circular relations with teaching and learning (formative assessment). This is a shift from the traditional viewpoint, in which the assessment came at the end of the learning process (summative assessment) (Savu-Cristescu, 2014).

Scholars have recently argued for a shift away from relying solely on traditional testing, which typically takes the form of paper-and-pencil tests. Some of these regularly used approaches like multiple-choice, true-false, and matching type tests are now being lowered in favour or toward a more authentic and realistic assessment approach that can accurately reflect students' abilities. The use of these authentic and alternate forms often facilitate possible improvement by providing adequate feedback for students (Mussawy, 2009; Bai, Xu & Ikem, 2013; Sumardi, 2017). This fact stimulates the development of alternative forms of testing that are more successful in evaluating the skills possessed by students, in particular those that are productive.

According to Lynch (2001), traditional assessment places an emphasis on the ranking of pupils, favoured quantitative data for isolated, individual test performances, and generally pushed the concept of unbiased, scientific measurement as the aim of educational assessment. Alternative assessment, on the other hand, is predicated on research into the sequences of student development during learning, and on the selection of authentic performances that indicate the students' underlying thought processes. Alternative assessments consist of things like self and peer assessments, portfolio assessments, conference assessments, task-based and performance assessments,

dynamic assessments, and student-designed projects and assignments (Shorna, 2017).

The use of performance-based assessment (PBA) (referred to as PBA henceforth) is becoming an increasingly common alternative assessment method in published works. In most cases, the purpose of a PBA, is to determine whether or not students are able to apply the information and knowledge that they have gained from a specific topic or unit of study. Typically, students will need to apply higher-level cognitive processes to their work in order to create an artefact or carry out a method (Chun, 2010). The tasks can range from anything as straightforward as a constructed response (for example, a brief answer) to something as intricate as a design concept for a sustainable region. The work that the students are tasked with doing is meant to be representative of the work done by a working artist, engineer, laboratory technician, financial analyst, or consumer advocate. This is the kind of assessment that is considered to be the most authentic. In addition, Chun explains that, in a typical classroom setting, a test is administered at the end of the lesson to evaluate the degree to which pupils have retained the information that was taught to them. On the other hand, a performance activity can both improve students' learning and gauge how well they've displayed their abilities. Therefore, teaching, learning, and assessment take place simultaneously while the student completes the assignment.

At the moment, there are a number of research taking on all around the world that provide evidence of the efficiency of PBA. The results of studies conducted all around the world over the course of the past five years (2017-2022) suggest that PBA plays a vital role in the students' development of

practical skills. These studies have shown that PBA has significant positive effects on Japanese English Language learners (Chinda, Cotter, Ebrey, Hinkelman, Lambert & Miller, 2022), Indonesian English Language learners (Sumardi, 2017; Latipah & Purnawarman, 2019; Widianto, 2021; Lestari & Azizah, 2021; Mauludi, 2022), and Mexican Advanced Algebra learners (Tejeda, & Gallardo, 2017).

These findings shed light on how essential it is for secondary and tertiary educational institutions to have a PBA on staff. The acquisition of knowledge and abilities by students that may be applied in other contexts is the ultimate purpose of education. If students complete enough performance tasks, they will not only learn everything there is to know about the subject matter, but they will also develop the critical-thinking abilities they need to solve issues in completely new contexts. This is an argument that can be made. In addition to learning what they need to know to succeed in a given subject, students will hone the critical-thinking abilities that will serve them well in the real world.

In addition, Bawakyillenuo, Akoto, Ahiadeke, Aryeetey, and Agbe (2013) found that there is a mismatch between the skills that are taught in tertiary education and the skills that are required by businesses. This mismatch has three key implications on the economy of Ghana: effects on the labour market, effects on productivity, and effects on the country's overall development. It is therefore a matter of concern as to whether or not teachers in institutions of the second cycle use PBA, and it is also a matter of concern as to the effectiveness of the traditional assessments used in Ghana in terms of preparing students to apply fundamental classroom theories to the solution of practical, real-world problems, particularly at the secondary school level.

Researchers asserts that teachers are tasked with the responsibility of developing classroom assessments that are in line with the concepts supported by educational assessment professionals (Al.kharusi, Aldhafri, Alnabhani, & Alkalbani 2012). Furthermore, researchers found that there are some inconsistencies between the behaviours of teachers and the proposals made by educational assessment specialists about performance-based assessment (Zhang & Burry-Stock, 2003). Both historical and up-to-date investigations of methods for evaluating students' work in the classroom have shown that there is a persistent cause for concern over the PBA practices of educators (McMillan, 2001).

The kinds of activities that teachers choose to use are a clear indicator of whether or not they have adequate knowledge of a certain assessment strategy. For instance, Sundeme (2019) discovered that the majority of teachers at basic schools are unable to apply PBAs because they lacked awareness of this method of evaluating students' abilities. Therefore, instructors who are not well-versed in PBA may have difficulty using this strategy successfully in their classrooms.

The beliefs that teachers hold could be a contributing element to the fact that there is a gap between what they know and what they really do in their classrooms. When it comes to the education of students, a teacher's beliefs about what it means to educate and how it should be done, as well as how pupils should be evaluated, have a significant impact on not only what should be taught and how it should be done, but also what should be taught (Munif, Fauziati, & Marmanto, 2019).

Beliefs held by educators are directly connected to the methods they use to deal with the pressures they face in their professional lives on a daily basis (Karim, 2015). They have an impact on the overall learning environment of the students as well as on the students' levels of motivation and achievement (Karim, 2015). The methodologies and resources that teachers choose to use, as well as their procedures, decisions, and behaviours during the instruction and learning process, all reveal the teachers' underlying beliefs (Munif et al, 2019). It has therefore been established that teachers' beliefs may influence their decision to practice or not practice recommended assessment strategies even when they are knowledgeable in these areas. This is the case even though it has been established that teachers' beliefs may influence their decision to practice recommended assessment strategies. Therefore, it is vital to consider the knowledge, attitudes, practices, and obstacles faced by teachers in order to provide a comprehensive picture of assessment techniques.

Teachers' prior classroom experience is also crucial because it shapes their convictions about how best to run a class, instruct students, address issues that arise, and select appropriate assessment tools for tracking each student's progress toward mastery of course objectives. This is really important because students' abilities can be assessed more accurately when teachers have more experience (Munif et al, 2019). The available research indicates that it can take a person anywhere from four to seven years of classroom experience before they can be considered an effective educator (Varrella, 2000; Unal & Unal, 2012). Unal and Unal (2019) find that more seasoned educators have a preference for student assessment methods such self-designed quizzes, objective tests, and

performance assessments, as well as self-designed projects, comprehensive exams, real tests, group presentations, and oral defences.

Learners are better prepared for the challenges they will face in the real world when they are actively involved in the performance assessment process (Tejeda & Gallardo, 2017), which is one of the most important advantages of this type of assessment. Through the use of performance activities, students are required to exhibit that they have assimilated knowledge and abilities in one or more subject areas of the curriculum (Tejeda & Gallardo, 2017). However, the methodologies that teachers use for PBA can be influenced by a variety of factors, including their knowledge, views, difficulties, and experiences.

In 2007, the Senior High School was introduced, adding another year to the educational system without changing the curriculum. However, after three years, this policy was reversed, resulting in no graduates in 2010 and two graduating cohorts in 2013. In public national schools, all students are required to take a Core curriculum, which includes English Language, Integrated Science, Mathematics, and Social Studies. In addition to the Core curriculum, students must also select three or four Elective subjects from seven groups, including Sciences, Arts, Vocational studies, Technical studies, Business, and Agriculture. Ghana's public second-cycle institutions comprise of senior high schools, senior high technical schools and technical and vocational institutions. In the Cape Coast Metropolis, there are 11 public second-cycle institutions providing education to the general public. It boasts of the first second cycle institution in Ghana (Mfantsipim senior high school) and is considered a centre of excellence in relation to second cycle institutions (Quist, 2003).

Goal 4.1 of the Sustainable Development Goals aims to ensure that by the year 2030, all girls and boys will have finished a primary and secondary education that is free, egalitarian, and of high quality, resulting in learning outcomes that are both relevant and effective (United Nations Ghana, 2022). As a direct result of this, the Ministry of Education in Ghana have made it a priority to make education free from the primary level all the way through the secondary level in order to increase the number of students who have access to quality education. September 2017 marked the beginning of the ministry's implementation of the Free Senior High School project. That year, enrolment climbed by 11%, which was more than any previous record (Ministry of Education, [MoE], 2021). Nearly 470,000 students were enrolled in senior high school (MoE) during the 2017–2018 academic year. Public conversation focused mostly on three main issues: the programme's viability in light of current education sector constraints; funding; and strategies for ensuring and maintaining high-quality learning results (Awal & Oduro, 2017). Nevertheless, the provision of educational outcomes of a high standard need to be the primary focus of this debate.

Statement of the Problem

Two major problems plague the traditional approach to assessment (Sumardi, 2017). Due to its exclusive emphasis on formal assessment, it offers limited opportunity to identify students' factual skills. Furthermore, it places an emphasis on succeeding during exam settings to the exclusion of all else. This approach may be deceptive about the nature of education itself. Abedi (2010) also adds that students are unable to provide a full picture of their knowledge and abilities in content areas when assessed using traditional means. Also, one

of the challenges affecting Ghana's education system identified by Armah (2017) in recent times is the fragmented and overloaded curriculum. Armah argues that the goals and outputs of the Ghanaian education system are unrelated to the changing trends and demands of the modern labour market, hence the JHS and SHS examinations and curricula are not labour market friendly. The timeframe allocated to completing this curriculum is inadequate as well. This gives little room for PBA but instead promotes focusing on tests that assess lower-order thinking and encourage the cramming of subject content to pass examinations in what is informally known as the chew, pour, pass and forget system. This, therefore, highlights some of the challenges in the assessment of students in the current educational system.

This challenge in the Ghanaian educational context became evident when the winners of the 2018 Senior High School National Science and Maths Quiz (NSMQ), the most prestigious science and maths competition among second cycle institutions in Ghana failed to partake in a global competition held in Portugal the same year because they could not recognise and understand the equipment they had been presented with (Ghanaweb.com, 2018). Dr Elsie Kaufmann, the host of the NSMQ, in an interview as a guest on a popular television show in Ghana, the Kweku Sintim Misa (KSM) show, lamented about how many of our students are unable to translate all the theories taught within their schools into practices that are useful (Ghanaweb.com, 2018). Thus, although there is a clear conceptual comprehension among students at second cycle institutions, they fail to turn this into practice.

Several studies have been conducted outside of Ghana on PBA. Most of them were conducted with a focus on second cycle institutions (Sumardi, 2017; Tejeda & Gallardo, 2017; Latipah & Purnawarman, 2019; Widianto, 2021), with a few focused on tertiary education (Lestari & Azizah, 2021; Chinda et al., 2022; Mauludi, 2022). However, Sumardi's (2017) qualitative study focused on the effect of PBA on SHS students in Indonesian, Tejeda and Gallardo, (2017) in a mixed-methods focused on students' perceptions after a performance assessment in Mexico, and Latipah and Purnawarman, (2019) in a qualitative study also focused on English as a foreign language (EFL) teachers' beliefs and experiences in implementing PBA in Indonesia. Furthermore, Chinda et al., (2022) focused on the washback effect of PBA on students in Japan in a qualitative study, while Mauludi, (2022) in a qualitative study also focused on attitudes toward performance-based assessment among college students in Indonesia. This shows that several of these studies were qualitative in nature employing interviews, observations and document analysis. Also, most of these studies worldwide have focused on students rather than teachers. Latipah and Purnawarman, (2019) although focusing on teachers, their study was limited to only teachers' beliefs.

Further studies are required to understand teachers' practices of PBA in Ghana. However, very little current research on PBA in Ghana has been conducted. For example, At Ghana National College in Cape Coast, students' motivation and performance in mathematics have been studied in relation to the introduction of a performance assessment-driven curriculum (Arhin, 2015). Performance assessment-driven instruction has been shown to improve students' attitudes and academic performance in Ghanaian high schools, according to a

study conducted by Arhin (2015). However, Arhin's (2015) study was a quasi-experimental study that was carefully implemented to highlight the potential benefits of PBA. Sundeme, (2019) also focused on teachers' knowledge and practice of PBA in the Berekum Municipality. Sundeme (2019) found that instructors at the junior high school level (JHS) were not actually implementing the PBA due to a lack of training and expertise. As such, these studies provide very little information on the PBA practices of teachers in second cycle institutions. Also, whiles research has revealed that teachers' belief influences their assessment (Munif et al, 2019), the mediating role belief of PBA plays in the relationship between knowledge and practices has been underexplored. Exploring the role of teachers' beliefs in the association that exists between knowledge and practice will provide more insight into the factors affecting PBA practices and pave the way for the effective use of PBA in the Ghanaian education system.

Purpose of the Study

The purpose of the study was to assess PBA practices of teachers in second cycle institutions in the Metropolis (CCMA). Specifically, the study seeks to assess:

1. Knowledge of PBA practices of teachers in second cycle institutions
2. PBA practices of teachers in second cycle institutions
3. Challenges affecting PBA practices of teachers in second cycle institutions
4. Influence of teachers PBA knowledge on PBA practices

5. Moderating role of school type and teaching experience in the relationship between knowledge in PBA and PBA practices of teachers in second cycle institutions
6. Mediating role of teachers' PBA beliefs in the relationship between knowledge in PBA and PBA practices of teachers in second cycle institutions

Research Questions and Hypotheses

The study was guided by 3 research questions and 3 hypotheses

Research Questions

1. What knowledge do teachers in second cycle institutions in the Cape Coast Metropolis have on PBA?
2. What are the PBA practices of teachers in second cycle institutions in the Cape Coast Metropolis?
3. What challenges affect the use of PBA among teachers in second cycle institutions in the Cape Coast Metropolis?

Research Hypotheses

The following research hypotheses guided the study:

1. H_0: There is no statistically significant influence of PBA knowledge on PBA practices.
   H_1: There is a statistically significant influence of PBA knowledge on PBA practices.
2. H_0: School type and teaching experience will not moderate the relationship between knowledge in PBA and PBA practices.
   H_1: School type and teaching experience will moderate the relationship between knowledge in PBA and PBA practices.

3. H_0: Teachers' beliefs will mediate the relationship between knowledge in PBA and PBA practices.

   H_1: Teachers' beliefs will not mediate the relationship between knowledge in PBA and PBA practices.

Significance of the Study

As a direct consequence of the results of the study, the Ghana Education Service (GES) would be better able to offer training for employees (teachers) in the Cape Coast Metropolis to help them strengthen both their understanding and their practises about PBA. The findings of this study would assist policymakers in placing much emphasis on PBA as part of the curricula in the various universities. This would guarantee that the graduates of these institutions are prepared to teach effectively. The outcomes of the current study would also assist educators working in second-cycle colleges in comprehending and appreciating the fundamentals of PBA, in addition to providing them with the knowledge of strategies they would employ while evaluating their pupils. The current research would also help policymakers such as GES and Ministry of Education address or encourage teachers to have positive beliefs toward PBA practices. In the end, but certainly not least, the research would provide a contribution to the existing literature on PBA practises.

Delimitations

The scope of the study is restricted to the Cape Coast Metropolis. The study focuses only on PBA practices of teachers in public second cycle institutions. Again, the study focuses on PBA practices, challenges, beliefs, and the influence of school type and teaching experience in the relationship between PBA knowledge and practices of teachers in public second cycle institutions in

the Cape Coast Metropolis of Ghana. The study is quantitative in nature and hence employed quantitative data analysis techniques. Stratified proportionate sampling technique and convenient sampling techniques were used.

Limitations

The use of questionnaires could potentially encourage dishonesty among teachers, which is one of the study's limitations. Because the questionnaires were given to the respondents, and the respondents were given the opportunity to fill them out at their own leisure, it is possible that some of the respondents' answers were affected by the responses of their fellow workers. Results from self-report measures are only as good as the information the participants honestly report. This is because the validity of the measures is dependent on the accuracy of the responses. To get around this constraint, the respondents were given a thorough explanation of the goal of the study, which cleared up any questions they could have had regarding that purpose.

Definition of Terms

Words that appear in the current study on PBA are provided with operational definitions in accordance with how those words function:

Performance-based assessment: A performance-based measure indicates a student's capacity to apply the skills and knowledge acquired throughout a unit or units of study to the completion of a specific task. Typically, the activity requires students to create a product or perform a procedure using higher-order thinking skills.

Second cycle institutions: Senior high schools, technical schools and senior high technical schools.

Beliefs: convictions that a set of propositions held about PBA in the mind are true.

Organisation of the Study

The research was broken down into five different segments for easy reading. In the first chapter, you will find an overview of the study, a problem statement, a declaration of the objectives of the study, research questions and hypotheses, a delimitation of the study, a limitation of the study, a definition of terminology, and an organisation of the study. In addition, significant theoretical, conceptual, and empirical literatures are discussed in Chapter Two. These are the kinds of literature that have informed the design and execution of the study. The approach that was utilised for the study is broken down and discussed in Chapter Three. This chapter details the research design, population, sample, and the procedure for sampling. The chapter also includes the research instrument, the validity and reliability of the instrument. Furthermore, the chapter includes the pretesting of the instrument for data collection, as well as the procedure for data analysis; Chapter Four of the study focuses on the analyses and discussion of the findings. This chapter examines the respondents' background characteristics. The research questions and hypotheses served as guides for the analyses that were carried out. The findings, interpretation, and recommendations derived from the research are presented in the fifth chapter. This chapter also made a suggestion for a potential area for additional research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

The purpose of the study was to assess performance-based assessment practices (PBA) of teachers in second-cycle institutions in the Cape Coast Metropolis of Ghana. This chapter discusses the theoretical review, the conceptual review, and the empirical review. The theoretical review explored theories such as social constructivism (Lev Vygotsky, 1968) and social cognitive theory (Albert Bandura, 1999). The conceptual review explored the various concepts related to the study, such as educational assessment, alternative assessments, and PBAs. The empirical review was carried out in relation to the study's objectives.

Theoretical Review

Social Constructivism (Lev Vygotsky)

Numerous contemporary ideas, most notably those of Vygotsky, Bruner, and Bandura, are inextricably intertwined with this perspective (Shunk, 2000). In 1968, Lev Vygotsky was credited with creating the social constructivism school of thought in education (Akpan, Igwe, Blessing, Mpamah, & Okoro, 2020). When it comes to education, social constructivism is a branch of the wider category of constructivism that prioritizes interaction with others, whether it is done individually or in a group, with or without the help of a facilitator. The common ground between the two approaches lies in the constructivist's view that students acquire knowledge through their own efforts and reflection on their experiences in the world. Alternatively, social constructivists think that children/students learn best when they work together

with teachers and classmates to solve problems and explore new ideas. According to Vygotsky, education takes place mostly outside of the classroom, in the context of a person's family, community, and culture (Schreiber & Valle, 2013). Dyads are given special treatment in the social constructivist theory (Johnson & Bradbury, 2015). As well as more intimate gatherings.

In school, for instance, students learn mostly through social interactions with adults such as instructors and parents. On the other hand, educators encourage and promote conversation by capitalizing on the organic flow of classroom chatter. A child's education is greatly impacted by the involvement of his or her parents (Powell & Kalina, 2009). As the proponents of social constructivism see it, education and learning benefit greatly from student-teacher dialogue, with a focus on making sure that students fully understand what is being discussed (Prawat, 1992). Vygotsky's social constructivism theory relies heavily on the concept of the "zone of proximal development" (ZPD). Under this theory, the instructor is seen as a central figure in each student's educational journey (Davis, Witcraft, Baird, & Smits, 2017). The Zone of Proximal Development (ZPD) specifies the range of tasks that a student can handle without guidance from an educator, as well as those that they can't. ZPD maintains that with the right guidance from an educator, students can learn and develop skills they couldn't acquire on their own (Schreiber & Valle, 2013).

Knowledge cannot simply be transmitted from teacher to student by speaking to the pupils seated at the back of the classroom from the front, which is the premise of the constructivist approach to education. However, it is the responsibility of the students to develop their own knowledge. Students construct meaning and acquire expertise through a dynamic mental process

(Bautista, 2013). We each have our own unique understanding of the world around us because of the way in which our own experiences have shaped us. Culture and context are emphasized as crucial to understanding social phenomena and developing expertise in the field (Derry, 1999; McMahon, 1997).

Once students have learned a skill, they can do it independently of the classroom instructor. From this vantage point, the educator is not a bystander to the classroom learning process but rather an integral part of it (Schreiber & Valle, 2013). Hein (1991) argues that a student's "potential development" otherwise often referred to as academic success is the highest level of growth that he or she is capable of achieving with the help of his/her teachers and classmates. Learners can attain this stage of development with the help of instructors and classroom discussions. Hein believes that learning is most effective when done in a group. Everyone you meet, from your contemporaries to your ancestors, is a potential friend. Kapur (2018) pointed out that there are numerous sites and methods for the social production of knowledge. This could be accomplished through participation in a group activity, such as conversation or teamwork that is designed to educate, inform, or inspire its members in a formal or informal setting, such as a religious or market forum, social media site, school, or training facility. The educational philosophy known as social constructivism places a premium on student-teacher interaction and mutual learning. Learning that requires engagement with people and the utilization of acquired information in practical contexts. According to social constructivism, learning takes place not just as a result of a student's receptive interactions with the material world but through cultural, substantial, and meaningful exchanges

between individuals with regard to a reality that transcends the purely physical and perceptible. Therefore, learners' experiences are greatly shaped by their interactions with other people, and learning is enriched as a result.

Teaching by utilizing examples and stimuli from the real world is more effective than using hypothetical situations. Vygotsky argued that social interaction is crucial to the development process throughout life and that learning takes place in a social context. That is to say, with adult supervision or in conjunction with other students, students may do any learning job. This idea provides support for creating learning environments in which students work in teams to develop knowledge and understanding with their instructors and classmates. Students learn and develop the skills they'll need to lead full and productive lives through their experiences with other people and with the material and immaterial world.

Benefits of Constructivism

Bada and Olusegun, (2015) identified a few benefits of constructivism. These are presented below.

1. When students are actively involved in their education, as opposed to being passive listeners, they learn more and have a greater level of satisfaction while studying.
2. Instead of focusing on rote memory, education is most effective when it emphasises critical thinking and understanding of material. Learning how to think and comprehend is at the centre of the constructivist approach.
3. Learning through the constructivist approach is transferrable. Students in constructivist classrooms develop their own organising principles,

which they are then able to use in different types of educational environments.

4. The constructivist approach empowers students by letting them shape their own educational experience since learning is based on the questions and inquiries of students, and because students typically participate in the process of designing assessments. The efforts and personal investments made by the students in their journals, research reports, physical models, and creative representations are taken into consideration during constructivist assessment. Encouragement of students' creative tendencies results in an increase in the latter's capacity to express the material they have learned in a variety of ways. In addition to this, there is a greater possibility that the students will retain the new material and put it to good use.
5. Students benefit from the stimulation and interest that constructivism provides. This is accomplished by situating the educational activities in a real-world environment as much as possible. Constructivist classrooms teach students to question preconceived notions and encourage them to use their natural inquisitiveness to learn more about the world around them.

The social constructivist perspective on education, which is relevant to this investigation, stresses the importance of students and teachers working together. Thus, students are meant to be active participants in the learning process. By developing an environment in the classroom that emphasises group work and the free flow of ideas, constructivism aids in the development of students' social and communication skills. Through the completion of group

projects, students are needed to learn the skills of successful collaboration on tasks and clear, concise expression of their ideas. Students are obliged to engage in the exchange of ideas, learn how to negotiate with one another, and evaluate the social acceptability of their classmates' contributions. This is vitally crucial for their success in the actual world, as they will always be exposed to a multiplicity of situations requiring them to work with others and navigate among the ideas provided by those around them.

It discourages students from learning by rote and from being passive in their educational pursuits, and it promotes the growth of students' skills as well as the development and utilisation of the students' own initiatives. This theory therefore advocates for PBA strategies where students actively demonstrate or applies hypothetical/theoretical/abstract knowledge to problems that are most of the time encountered in the real world. Thus, there is an emphasis on higher order learning. There are multiple implications. The inferences of social constructivism that should be made on student's learning according to Akpan et al., (2020) are that:

1. Students no longer passively receive information from the instructor but actively participate in the learning process by answering questions, completing projects, and other forms of teacher-initiated discovery.
2. It is increasingly common practise for teachers to have students work in cooperative learning groups.
3. They develop into a shared resource for information as they build on one another's experiences and insights.
4. They take initiative in their education by engaging in meaningful discussion and working together to solve problems.

5. Fifth, through appreciating and exploring novel ideas and lessons learned from colleagues, students may develop the habit of considering the viewpoints of others.
6. To maintain a high level of cognitive performance, they must cherish each new experience, take the time to learn from it, and be willing to share what they've discovered with their peers.

Albert Bandura's Social Cognitive theory

Due to its consideration of attention, memory, and motivation, the Social Cognitive Theory is sometimes viewed as a bridge between cognitive learning theories and behaviourist learning theories. This is because the theory takes these three elements into consideration (Muro & Jeffrey, 2008). Learning is described as a change that is either permanent or temporary process by which a person's skills and capacities improve as a result of interaction with their surroundings (Driscoll, 1994, pp. 8-9). According to Albert Bandura's social cognitive theory, motivation and behaviour are determined by a complex interplay of cognitive, behavioural, psychological, and environmental factors (Crothers, Hughes, & Morine, 2008). According to Bandura's Triadic Reciprocal Determinism model, all three of these elements work together to produce human functioning (Crothers et al., 2008). This idea is incorporated in the model (Wood & Bandura, 1989). One distinguishing characteristic of SCT is its emphasis on both external and internal forms of social reinforcement. The concept provides a lens through which to see the reciprocal influences that affect and are shaped by people and their surroundings. The theory explicitly examines how self-efficacy contributes to the development of behaviour through observational learning and modelling.

The theory proposes that humans acquire knowledge by observation, or learning based on what is observed. According to social cognitive theory, an individual's level of knowledge can be attributed in part to the amount of time spent studying other people's behaviours. This typically occurs in the context of one's relationships with others, one's life experiences, and one's exposure to various forms of media. That is to say, the continuation of humanity is dependent on its members repeating the actions of others to ensure its continuous existence, rather than people merely acquiring new behaviours by attempting them and either succeeding or failing at them. Therefore, people are not simply onlookers whose internal mechanisms are governed by external events. They are agents of experiences as opposed to mere recipients of experiences (Bandura, 2001). Whether or not this behaviour is modelled depends on whether or not individuals are rewarded for their actions and what those actions lead to. In addition, the media serve as models for a large assortment of individuals in a variety of environments.

Cognitive Features of SCT

The five cognitive characteristics listed below were provided by Nabavi (2012) as potential factors in determining behaviour in SCT.

1. Predictions of future outcomes and responses, depending on the existing condition or situations
2. Living through the repercussions of the actions of others (Vicarious experiences)
3. The way in which we cognitively process new information is impacted by our anticipations regarding the outcomes of future events.

4. Expectations play a role in determining how one chooses to behave; and
5. The absence of anticipated repercussions can have an impact.

Theoretical Foundations of Bandura's Social Cognitive theory

A. Human agency

The agentic socio-cognitive perspective sees humans not as passive beings that are moulded and guided by their environment, but as active actors who are capable of self-organization, initiative, reflection, and regulation (Bandura, 1999). That people can shape their circumstances through their own efforts is undeniable. The agentic approach to social cognitive theory posits that individuals actively engage in their own growth, regulation, reflection, and action, rather than being passive recipients of the influences of their environments or their own selves. In particular, there are three states that human agency can take on:

1. **Individual Agency**: The impact that one individual can have on their surroundings.
2. **Proxy Agency**: The actions taken by another person with the intention of protecting the party's wellbeing.
3. **Collective Agency**: A collection of individuals who have a common goal and cooperate in order to attain that goal.

Human agency has four core properties:

1. **Intentionality**: person volitional decision-making to engage in particular pursuits;
2. **Forethought:** the capacity of individuals to envision the results of their actions in the future;

3. **Self-reactiveness:** Entities' capacities to establish and maintain socially acceptable behaviours;
4. **Self-reflectiveness:** The capacity of individuals to engage in self-reflection and to critically assess the validity of their own thoughts and actions.

B. Human capability

As a result of evolution, human beings now possess highly developed neurological networks, which make it possible for individuals to acquire knowledge and abilities in a symbolic as well as a direct sense. There are four key competencies that are recognised as crucial pillars supporting the social cognitive perspective. These four processes include the **symbolizing capability, self-regulation capability, self-reflective capability, and vicarious capability**

1. **The first one to be considered is the symbolizing capability**: People typically use their thoughts to test out potential solutions to problems, rather than attempting to solve them purely through the performance of actions and enduring the repercussions of mistakes (Bandura, 1999). They come up with different ways to solve problems, evaluate those ways, and decide whether to keep or throw them out based on an assessment of how well those solutions will work without having to go through a tiresome search of behavioural options.
2. **Self-regulation capability**: People are more than just knowers and doers whose activities are guided by their expectations of their acts' consequences. On top of that, they may guide themselves in their own ways because they are self-reactors (Bandura, 1999). If not for their own

self-imposed restrictions and standards, people would be like weather vanes, constantly shifting direction to accommodate whatever fleeting influence happened to touch them.

3. **Self-reflective capability**: People not only take initiative but also reflect on their own mental processes and actions (Bandura, 1999). Accurately discriminating between correct and incorrect thinking is crucial for proper performance.
4. **Vicarious capability**: Humans have developed a sophisticated aptitude for observational learning, which enables them to swiftly increase their knowledge and skills through the information communicated by a vast array of models. Almost all behavioural, cognitive, and affective learning from direct experience can be acquired by seeing the activities of others and their results. (Bandura, 1986).

Key concepts in the Social Cognitive Theory

1. **Triadic Reciprocal Determinism**- This is the fundamental idea of SCT. Behaviour (responses to stimuli in order to attain goals) is a product of the interplay between the person (a unique learner) and the environment (the larger social setting in which the individual finds themselves) (Bandura, 1999).
2. **Observational Learning** - A person can learn to imitate a behaviour by watching it being performed by others, as this theory suggests. This is typically displayed through the modelling of other people's actions. When people observe a model performing a behaviour effectively, they are more likely to be able to attain the same results. Attention, retention,

reproduction, and motivation were the four main factors that determined the success of the process of observational learning.

A. **Attention:** Humans pay attention when they consciously choose to focus their awareness on a certain aspect of their surroundings rather than on the many other details (Wood & Bandura, 1989). Focused attention is a prerequisite for successful learning.

B. **Retention:** Information is retained by being reorganised and reshaped into rules and concepts before being stored in memory.

C. **Reproduction:** To reproduce means to act out or mimic the behaviour that was observed. Once you have observed the model and internalised the information, you may put it into practise. Putting what one has learnt into practise allows one to grow and develop in that area.

D. **Motivation:** Finally, motivation to reproduce the modelled behaviour is essential for effective observational learning. Both positive reinforcement and negative consequences can be powerful motivators. Students may be more inclined to participate in classroom activities if they observe their peers receiving positive reinforcement, such as additional credit, for doing so.

3. **Self-efficacy** - This refers to the degree to which a person is self-assured in his or her ability to successfully perform a behaviour. Self-efficacy is unique to SCT. Self-efficacy is influenced by a person's specific capabilities and other individual factors, as well as by environmental factors (barriers and facilitators). Self-Efficacy can be increased by

mastery experience, social modelling, improving physical and emotional states, and verbal persuasion.

The theory is relevant because it is based on the ideas that (1) humans learn primarily via observation of others and (2) human mental processes are fundamental to learning. A significant amount of emphasis is placed, throughout SCT, on cognitive ideas. The way in which students operate cognitively on their social experiences and the way in which these cognitions then influence the learning process is another focal point of this approach. The learning that is taking place now builds upon the learning that took place in the past; as a result, teachers need to find out what their students already know before introducing new ideas to them, and they also need to make sure their students have plenty of opportunities to exercise and practise what they are learning. This is due to the fact that students learn most effectively through the process of carrying out the exercises. A better understanding of the content can be attained through the completion of exercises. It is important to break down subjects and topics into manageable subparts for students so that they may fully grasp the material. It's important that the individual components be broken down and taught in a way that allows them to build off of one another.

Conceptual Review

Concept of educational assessment

As defined by Lambert and Lines, (2000), assessment is the process by which information regarding students' reactions to educational tasks is gathered, interpreted, recorded, and used. Assessment, as defined by Brown (1990), is a collection of related techniques used to determine a multifaceted characteristic of a person or a group of people. This requires interpreting facts regarding the

student's current levels of achievement in relation to the learning goals. At the level of the individual classroom, the responsibility for deciding which specific information, abilities, attitudes, and beliefs should be assessed rests with the teachers and staff. In addition to this, it is the responsibility of the teachers to choose at what point in the process and for what particular purpose the students should be assessed. Additionally, they choose the instruments that will be able to conduct these classroom-based tests in the most effective manner.

For educators to give specific academic assistance, educational programming, or social services, assessments are also utilised to determine the shortcomings and strengths of each student. In addition, the design of assessments is the responsibility of a wide range of organisations and individuals. These include educators, administrators of school districts and universities. In addition, there are organisations that consist of a mix of for-profit businesses, state education departments, and government agencies. It is more probable that teachers will incorporate the results of classroom assessments into their own lessons because they are the ones who create the questions, present them to students, and analyse the data. Consequently, it provides response on the efficacy of instruction and measures students' progress. According to Brown (1990), there are two fundamental objectives of classroom assessment: demonstrating whether or not the learning has been successful, and elucidating the teachers' expectations of the students. According to Yambi (2018), assessment is a process that consists of the following four fundamental components:

1. Determining how much progress has been made over a certain period of time.

2. Finding ways to get students excited about their academic work.
3. Conducting an analysis of the various instructional approaches.
4. Determine a ranking for the students' overall competencies in relation to the collective group of students who participated assessment.

Relevance of assessment

1. Since the goal of assessment is to serve as a driver for students' learning, the practise of administering it is obligatory (Brown 1990). Whether we like it or not, the majority of students have a tendency to concentrate all of their efforts on finding the easiest or quickest way to ensure they pass their 'tests.' Also, on the basis of this information, we are able to employ our assessment strategies in order to modify the many types of learning that take place. For instance, assessment methods that concentrate primarily on students' abilities to recall previously acquired information are likely to result in shallow learning. On the other side, if teachers adopt assessment methodologies that require students to think critically or come up with innovative solutions to problems, hey are likely to witness a higher degree of achievement or performance from our student body.
2. In addition to this, quality assessment can assist students in becoming more successful and efficient in their own self-directed learning (Darling-Hammond 2006).
3. One of the purposes or the reasons that necessitates the need of assessment is to motivate and direct learning, but this is not the only objective. In addition to their significance in guiding instructional choices, well-designed assessment methodologies are a crucial aspect of lesson, course, and curriculum-level quality assurance processes.

Types of Assessment

There is a wide variety of terminology used to describe various forms of students' assessment. Although somewhat arbitrary, the phrases serve to illustrate the two extremes of a spectrum (McAlpine, 2002).

Formative vs Summative Assessment

Throughout the academic year, students are given many opportunities to demonstrate their learning through formative assessment. At the outset, it establishes a standard against which future progress can be measured and accomplishment levels are compared. Formative assessments serve to keep educators abreast of their students' growth and development as the school year advances (Afflerbach, 2008). The goal of formative assessment is to aid learning by giving the student constructive criticism that may be used to strengthen areas of weakness and build proficiency. In order to be most effective, the findings of a formative assessment must be utilised internally by the persons involved in the learning process, as suggested by the name. Several people can be included in this group including such people as students, teachers and other curriculum developers. The majority of grading and promotion decisions are made using summative assessment scores. A learner's total performance is evaluated at the conclusion of a lesson or unit through a process called summative assessment. Summative assessment not only serves as the foundation for grading, but also serves to convey students' talents to audiences outside the classroom, such as school supervisors and potential employers as indicated by Darling-Hammond, (2006).

Informal vs. Formal Assessment

In a formal assessment, the pupils are made aware that the work they are performing for the assessment is being evaluated in some way. Informal assessment involves integrating judgments into other aspects of the process (McAlpine, 2002). In an informal assessment, the decisions taken in reference to supporting students are linked with other tasks, such as the feedback offered by a lecturer on an answer to a question or by a preceptor while the student is executing a bedside operation. For example, the most common method of providing formative feedback is through the use of informal assessment. Because of this, it is typically less threatening and, as a result, causes the pupil to experience less stress. Contrarily, informal remarks are rife with subjectivity and bias. Students participate in a formal assessment when they have been informed that the task they are performing (such as a written examination) will be used for evaluative purposes. Also, since most formal assessments are cumulative, they have a more profound effect on motivation and are linked to higher levels of stress. Due to the importance of the decisions they influence, formal assessments must adhere to stricter criteria. Thus, this stricter criteria, according to McAlpine, (2002) often include the reliability and validity than less formal assessments.

Continuous vs. Final Assessment

Assessment of a learner's progress is ongoing throughout the course of instruction (intermittent is probably a more realistic term). In situations where both students and teachers need to know where they stand in terms of their progress and what comes next, continuous assessment is ideal (McAlpine, 2002). It goes without saying that additional effort is required from both teacher

and student in continuous assessment. The term final is reserved for an assessment that occurs after the completion of a course or unit (or terminal). In situations where the sum of knowledge is more important than its parts, holistic assessment is the most useful. For final decision-making, McAlpine, (2002) posits that summative assessments are typically used.

Process vs Product Assessment

The processes or procedures that lie behind a particular talent or activity are the focus of process assessment. One example of this would be the cognitive stages that are required to accomplish a mathematical operation. When it comes to mastering a new skill, process assessment is crucial because of the greater accuracy it delivers. It is also useful for providing formative feedback, which aids in performance development and helps students learn from their mistakes (McAlpine, 2002). The assessment of a product, or the end result of a process, is the primary emphasis of product assessment. In light of the examples that came before it, our attention would be focused on the answer to the mathematical problem. To document one's mastery or competency in a specific ability-that is, for summative purposes-product assessment is an especially useful tool. In most cases, preparing product assessments is less difficult than preparing process assessments, as all that is required is a description of the traits that are possessed by the ultimate product (McAlpine, 2002).

Divergent vs. Convergent Assessment

These are assessments in which a variety of answers or solutions may be deemed appropriate (McAlpine, 2002). Examples include essay tests. When evaluating higher cognitive skills, diverse tests are typically the most authentic and relevant. However, evaluating these types of assessments is frequently time-

consuming, and the resulting conclusions are frequently unreliable. A convergent assessment has only one right answer (per item). This method's value in measuring knowledge is best demonstrated by objective test questions. It is abundantly clear that convergent assessments are noticeably less complicated to evaluate or score in comparison to their divergent equivalents. Unfortunately, this ease of use frequently results in the broad implementation of this method, even when it is inconsistent with sound assessment principles. Two common assessment errors are caused by the overconfidence that comes from using widely used, well-established assessment methods. The first is the common trap of relying on a single metric to draw conclusions. One definition of this bias is an overemphasis on observable variables. There's also the Fallacy of the Law of the Instrument. This concept refers to matching the method of assessment with the problem being evaluated (McAlpine, 2002).

Authentic and Alternative Assessment

Many different definitions exist for authentic or alternative assessments. For example, one of these definitions is that 'Alternative assessment' is defined as procedures and strategies which can be employed within the context of education and can be easily implemented into the day-to-day operations that schools/classrooms frequently engage in (Hamayan, 1995, p.213). Furthermore, it can be noted that assessment of students' learning development through non-traditional means is an ongoing process known as alternative assessment (Shorna, 2017). To collect evidence regarding how students are approaching, processing, and executing real-world tasks in a particular domain is the primary objective (Huerta-Macias, 1995, p. 9). It is also usual practise to identify alternative assessments in terms of what they are not. Rather than using

traditional, multiple-choice, paper-and-pencil exams (Shorna, 2017). Simply said, this is a continual procedure for assessing students in novel ways. The primary objective is to collect information about how students understand and carry out real-world assignments in the subject area. It emphasises pupils' abilities rather than their knowledge or memory.

Criteria of Alternative Assessment

Generally, alternative assessment meets these criteria (Tannebaum, 1996)

i. The emphasis is on tracking individual pupils' development over time, rather than making broad group comparisons.

ii. Instead of focusing on the negative, teachers and administrators highlight the positive qualities of their students.

iii. Students' individual needs, such as their preferred techniques of instruction, linguistic abilities, cultural backgrounds, and grade levels, are taken into account.

Its authenticity stems from its foundation in real-world tasks and classroom exercises that advance learners toward their intended outcomes. Shorna (2017) identifies several alternative assessment techniques. These include self and peer assessment, portfolio assessment, conference assessments, task-based and performance assessment, dynamic assessment and student-designed tasks.

Significance of alternative assessments

Alternative assessments hold significance across various aspects of education. Firstly, these assessments are instrumental in capturing intricate outcomes that extend beyond the mere assessment of factual knowledge. Instead, they delve into the realm of nurturing lifelong skills such as creative

thinking, problem-solving, synthesis, and introspection. Authentic assessment, in this context, accords equal importance to both the final results and the processes leading to them.

Secondly, the utility of alternative assessments lies in their ability to simulate real-world scenarios. Through methods like authentic assessments and Performance-Based Assessments (PBAs), students engage in tasks, demonstrations, and interviews mirroring everyday situations, grounded in genuine and meaningful contexts.

Thirdly, alternative assessments serve as effective instructional tools. The dynamic interplay between assessment and instruction is acknowledged, enabling the adaptation of teaching techniques based on assessment outcomes. These assessments concentrate on identifying students' strengths, providing teachers with a more precise insight into students' accomplishments, their capabilities, and the endeavours they are pursuing.

Furthermore, these assessments communicate educational values. Alignment between assessment and instruction is crucial. When oral proficiency is valued but solely evaluated through written tests, students infer that only written language holds importance, neglecting other dimensions of learning.

Another advantage of alternative assessments is their capacity to accommodate diverse learning styles. They present a wide array of assessment avenues that cater to different preferences. While some students might opt to articulate their comprehension through written expression, others may lean towards performance, visual representation, or even the creation of timelines.

Lastly, alternative assessments foster collaboration and interaction between educators and students. This engagement can lead to more profound insights into students' progress and challenges, facilitating tailored educational approaches.

In essence, alternative assessments contribute substantively by gauging intricate skills, mirroring reality, adapting instruction, expressing educational values, accommodating diverse learning styles, and fostering meaningful teacher-student collaboration.

Performance-Based Assessment

Labelling and defining the work that students complete to exhibit their knowledge and abilities can be done in a number of different ways. In a significant portion of the research that pertains to assessment, the words performance assessment and performance-based assessment (PBA) are used simultaneously (Bland & Gareis, 2018). It is therefore not surprising that these two phrases may be used interchangeably in this current research. Tests of performance, say Frey and Schmitt (2010), are useful for putting a numerical value on knowledge or ability. This is actually the basic idea that is associated with these tests. They are also sometimes referred to in literature as alternative assessments or other times referred to as authentic assessments; and scoring typically entails the use of subjective judgement (p. 109).

According to Oberg, performance assessments are the pinnacle of bridging the gap between teaching and testing (2010). In addition, PBA may be used as a kind of assessment alongside other methods for assessing students' learning outcomes. Performance assessments, as defined by Oberg, are a method or methods used to evaluate students' learning, competence, and success

(p. 5). Adding the word "genuine" to PBA makes it a viable alternative to traditional measurements, as stated by Oberg (2010). Rather than focusing on classroom-specific problems, authentic performance assessment places the emphasis on having students use their knowledge and abilities in a setting that is grounded in real-world scenarios (Oberg, 2010, p. 5).

PBA, as explained by Koh, Tan, and Ng (2012), are meant to probe students' understanding and proficiency in more useful ways than conventional exams. Furthermore, performance assessments tend to motivate students to address problems that are legitimate or that exist in the real world. According to Newmann et al. (1996), true intellectual activity requires students to participate in a great deal more than the standard classroom activities of compiling information and carrying out steps. Higher-order thinking and the ability to solve problems that occur in the actual world are two essential components that make up the meat and potatoes of genuine assessment (Koh, et al., 2012). According to the ideas presented by Frey, Schmitt, and Allen (2012), performance-based assessment, on some level, must include a relevant, real-world task or challenge. They argue that the assessment job itself should have significance beyond the final result or grade if it is to be regarded credible. Archbald and Newman published a book-length critique of standardised tests in 1988, and they referred to it in their argument (Frey, Schmitt, & Allen, 2012). This provides evidence that traditional forms of assessment, such as multiple-choice standardised examinations, are not reliable.

According to Frey and Schmitt (2010), several teachers have mentioned that writing tasks (such as essays) are one of the most popular forms of PBA that are employed in classrooms. Performance-based criteria could be met by

written examinations if they are designed to evaluate one's skills or capabilities and if they are assessed according to one's own personal preferences (Frey & Schmitt, 2010). It is essential to point out that evaluating student performance using a subjective scoring system necessitates the instructor having subject-specific knowledge in order to do so. The reason is that if it is related to lesson goals, it can show the teacher how much the students have learned and what they think about the material, journal entries are suggested as a meaningful performance assessment by Corcoran, Dershimer, and Tichenor (2004). This occurs because when linked to educational goals and learning objectives, it enables educators to obtain valuable insights into the cognitive advancement of their students.

Assessments of historical writing, for instance, are used to evaluate skills such as analytical and evaluative thinking, which are required to support historical reasoning. The ability to analyse evidence, weigh contradictory accounts, take biases into consideration, and develop arguments anchored in evidence are examples of higher-level thinking skills (Monte-Sano, 2008). In addition, one’s ability to appreciate the intricacies of our social reality, evaluate information responsibly, and ask challenging questions are examples of higher-level thinking skills (Monte-Sano, 2008). Students are provided with yet another opportunity to advance their literacy abilities. They are also given the opportunity to put those skills to use in a manner that is genuine when teachers employ student historical writing as a performance assessment. According to Monte-Sano (2008), however, the majority of educators do not possess the prerequisite abilities essential to teach performance-based activities such as

evidence-based historical thinking and writing, and this highlights the necessity for further professional development.

According to Huertha-Macias (1995), the pressure of the test might cause students to get anxious to the point where they are unable to think rationally. Traditional assessment does not involve any element of personal responsibility on the part of the learner, and it does not reveal the whole scope of the latter's intuitions and knowledge. Furthermore, it does not take into account any aspect of the learner's growth. As a consequence of this, educators have recently placed a greater emphasis on the quest for alternative metrics, with the goal of evaluating pupils not based on how well they can recall information but on what they are able to integrate and generate. According to Wolf (1989), the typical framework of assessment does not stimulate the acquisition of skills that can be used throughout a person's life. Furthermore, a significant portion of the testing inhibits students from thoughtfully reacting to and analysing their own work. Since alternative assessment is built in context and over time, the instructor has the opportunity to measure the student's strengths and shortcomings in a range of subject areas and settings (Law & Eckes, 1995).

In PBAs, students are required to show that they can use what they've learned, perform certain abilities in a complicated setting to solve problems, and make choices or come up with original solutions while working within a prescribed framework. This is done so that the students can demonstrate that they are able to create new alternatives or come up with new ideas. This performance is typically observed in a setting that is only semi-structured or in real-life scenarios that demand collaborative effort. Authentic and PBA have

several benefits. (a) providing deeper context for difficult learning goals; (b) evaluating students' decision-making and problem-solving abilities; (c) incorporating knowledge, skills, and attitudes into assessment and feedback; (d) elevating the learning process over the final product; and (e) conforming to the core tenets of competency-based education's philosophical and pedagogical foundations.

Quality Characteristics of Performance Assessments

The chosen literature provides an in-depth analysis of many different aspects of high-quality performance assessments as well as their applications. According to Corcoran, Dershimer, and Tichenor (2004), one of the defining aspects of performance assessments is the need that students demonstrate their ability to create, produce, or perform an activity. In addition to this, it necessitates the use of higher-level thinking and the ability to solve problems. Essential pedagogical activities are characterised by their emphasis on real-world applications and practicality. These often incorporate human judgement as part of the scoring process are all characteristics of effective performance assessments. These are the features that are typical of performance assessments in general, but other traits are connected with certain kinds of performance assessments.

Conceptual Framework

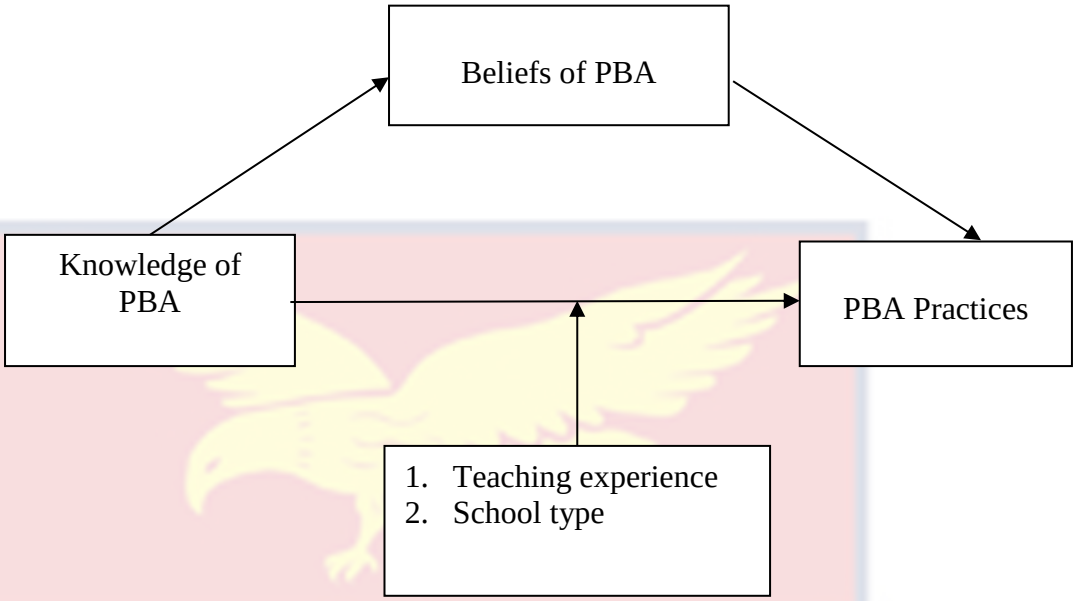

Figure 1: *P*roposed conceptual framework of teachers' knowledge, beliefs and practices and the moderating role of teacher's experience and school type

Source: Author's construct

One of the things that causes concern is the widespread belief that theoretical understanding should directly inform practical application. However, there is a significant body of research to support the contention that the passive distribution of knowledge is not an effective strategy for bringing about changes in practise (Armstrong, & Kendall, 2010). Therefore, the application of scientific findings to real-world problems is still a very difficult task. There is still a significant amount of difficulty involved in putting evidence into practise. While people's behaviours often clearly reflect their beliefs, the connection is not always so direct. People may believe an activity or product is important, yet choose not to engage in it or use it; they may know a given behaviour is detrimental, yet continue to engage in it (Gross, 2012).

It has been found that knowledge is not the only factor that influences people's practices. It has also been hypothesised that an individual's attitude toward a behaviour can be used to make accurate predictions regarding that individual's intention to do the behaviour in question. Furthermore, it is crucial to consider their beliefs on the importance of others' subjective standards as a driver of compliance. In addition, it is crucial to pay attention to people's convictions about the extent to which they can influence the circumstances that may help or hurt the performance of the behaviour in issue (perceived behavioural control) (Ajzen, 1991). The approaches and resources that teachers choose to use, as well as their procedures, decisions, and behaviours during the instruction and learning process, all reveal the teachers' underlying beliefs (Munif et al, 2019). Thus, teachers' beliefs may influence their decision to practise or not practise recommended assessment strategies even when they are knowledgeable in these areas. Therefore, it is vital to consider the knowledge, belief and practises, of teachers. This is necessary of researchers are to provide an all-inclusive picture of assessment techniques. A cost-benefit analysis relies on the individual's subjective assessment of the pros and cons, which could vary widely. The individual considers the usefulness of the acts in relation to their potential drawbacks, which may include the fact that they are costly, risky, unpleasant (for example, painful), time-consuming, or inconvenient. If an individual perceives that there are substantial barriers that prevent her or him from adopting behaviour, they are less likely to do so (Carpenter, 2010).

It is a well-known fact that classroom instruction is largely driven by the instructors themselves. The success of every educational reform is contingent on the degree to which teachers, willing to put the system into action, are

familiar with its needs and able to apply them effectively. As a result of attempts to implement beneficial modifications and enhancements in instructional strategies and assessment procedures, it is essential to investigate how teachers understand and implement the various components of performance assessment. Additionally, it is important to investigate how teachers see their role in it. This will make it possible for initiatives in professional development to transform the epistemologies of teachers so that they are more consistent with the system's updated needs. There is not much that can be done to improve the techniques that teachers take to teaching and assessing students unless their underlying beliefs are addressed and refocused.

Empirical Review

Knowledge of performance-based assessment practices of teachers.

To establish the level of PBA comprehension among JHS teachers in the Berekum Municipality in the Brong-Ahafo Region of Ghana, Sundeme (2019) performed a research. This study used a descriptive survey research design with a quantitative strategy. The research took a representative sample of 588 teachers from JHS in the Berekum Municipality and used the methodologies developed for the census. For the purpose of the research project, a questionnaire and a documentation checklist were utilised. According to the findings of the study, teachers of JHS do not have a good understanding of what is involved in the PBA. The research revealed that the majority of JHS teachers lacked appropriate knowledge of the performance-based assessment method. The Berekum Municipality's JHS teachers were unaware that PBA entails developing assessment processes in the classroom through practical, hands-on work.

In addition, they were unaware that the purpose of PBA is to give students the opportunity to demonstrate that they have mastered a certain set of skills and abilities through the production of a skill or product. They are under the impression that PBA does not involve the planning and execution of experiments or the writing of essays that require students to rethink, integrate, or apply material. They were unaware that PBA involves proving mastery in the use of a certain piece of equipment or skill. They were not aware that PBA is about creating, reading, and using maps. Also, they were are unaware that the project-based approach emphasises the completion of real-world, fact-based assignments that require students to use the knowledge and skills they have acquired.

It was suggested that instructors at JHS in the Berekum Municipality receive additional training on PBA so that they would be aware of what it is and how it may be implemented. This could be accomplished through communication between the Ghana Education Service and measurement and assessment specialists working at the University of Cape Coast (U.C.C).

The study by Abualrob and Al-Saadi (2019) sought to assess the level of familiarity with the PBA Approach held by Palestinian elementary school science teachers. One hundred and nine science instructors from intermediate and secondary schools participated in the research by filling out a questionnaire. Fifteen different science educators were interviewed using semi-structured, one-on-one conversations. It became apparent to the researchers that not all responders had a solid grasp of PBA when they set out to test that comprehension. An instructor has this to say on the subject; I am unsure how the PBA differs from our standard procedures for evaluating performance. This

conclusion explained why the first part of this study's findings showed that instructors seldom employed certain assessment methodologies.

It was noted by a number of teachers that they lacked sufficient expertise regarding this type of test. Only one individual gave the proper answer when we inquired about the significance of what it said. Many people were unclear about the differences between traditional assessment procedures and instruments and PBA. Another teacher explained that PBA places the burden of responsibility on the student while allowing room for the teacher to diversify the questions asked. The instrument that was utilised by the participants is the test. One teacher concluded that this is the case, stating that tests are the only true tool that allows for varied question formats. Because of this, there is a growing need for professional development for teachers in the area of PBA, which includes the theoretical and practical explanation of its techniques and strategies.

Performance-based assessment practices of teachers

Frey and Schmitt (2010) investigated the classroom assessment practises of instructors of grades 3 through 12 in a state located in the Midwest of the United States. In addition to establishing the frequency with which particular assessment item formats were employed, the amount of utilisation of specified best practise procedures for assessment was also taken into consideration. This was done in order to ensure that the highest quality results were obtained (PBA, teacher-made tests, and formative assessment). Utilizing a cluster sampling strategy allowed for the collection of a representative sample of 140 educators from third through twelfth grades, all of whom came from 22 different school districts. Using this strategy, individual school buildings were considered to be

the cluster of teachers. A series of questions that address all six facets of testing in the classroom were used in the study. In order to investigate the frequency with which teachers select particular classroom assessment strategies, descriptive data were compiled for each question. The findings showed that traditional paper-and-pencil testing was still the most common form of assessment used in classrooms, despite the widespread adoption of performance-based exams across all grade levels and subject areas. The use of PBA was far more widespread at higher levels than it was at basic levels, and it was utilised significantly more frequently by teachers of language arts than by those who taught other subjects. Even though they developed their own assessments for use in the classroom, teachers frequently relied on tests and items that had been developed by others.

The assessment practises of Omani educators were examined in a research by A.lkharusi, Aldhafri, Alnabhani, and Alkalbani (2014). Alkharusi's (2010) Teachers' Assessment Practices Questionnaire provided the basis for this survey's 37 questions. Its purpose was to evaluate how often and well educators used different assessment techniques, including standard and non-traditional forms of assessment (Using structured performance assessments). Assessment research, assessment dissemination, assessment criteria, student participation in assessment, and grades based on factors other than mastery were also accounted for. The study revealed that teachers demonstrated that they often practice authentic assessments such as PBAs. Significantly higher correlations were established between the use of alternative assessment methods and the following: assessment analysis, student assessment feedback, the establishment of transparent assessment norms and criteria, and student participation in the

assessment process. Also, lower correlations were found between alternative assessment methods and the use of nonachievement grading factors.

Daghan and Akkoyunlu (2014) conducted a study in which they explored the perspectives and usage instances of PBA methodologies (PBAMs) held by information technology teachers in Turkey. They aimed to find out which of the PBAMs are employed frequently or not at all, the preferred reasons for these approaches, and people's judgements regarding the applicability of them. In order to establish the framework of the study, the phenomenological design, which is a type of qualitative research approach, was utilised. The use of a number of research methods, including interviews, observations, and document analysis, helped to ensure that triangulation had been achieved. Each of Ankara's six information technology teachers earned their degrees from the Department of Computer Education and Instructional Technologies in the Faculty of Education. These educators are currently working in a total of five different schools located all around the city. The teachers were selected through a process that is referred to as purposeful random sampling. It was found that the teachers were not making sufficient use of the PBAMs in their classrooms. It was revealed that portfolios, projects, and performance assignments were utilised, whereas the other approaches were utilised, on average, only very infrequently. The results of the investigation lead the researchers to the conclusion that the information technologies lesson does not make effective use of PBAMs in any way.

The objective of Ogan-Bekiroglu and Suzuk's (2014) study was to examine the assessment literacies of Turkey pre-service physics teachers and their implementation in practise. This study revealed that although pre-service

physics instructors were able to demonstrate a comprehension of essential assessment literacy concepts in theory, they had great difficulties applying these concepts in reality. In other words, the participants learned the constructivist assessment literacy principles, but were unable to adequately internalise them. Therefore, they were in a weaker position in terms of assessment literacy when it comes to their execution.

An investigation into the authentic assessment perceptions and practises of the English teachers who were working in the pilot project schools for the 2013 curriculum was carried out by Aliningsih and Sofwan (2015) in the Grobogan regency of Indonesia. In this investigation, a mixed technique was adopted. Integrating qualitative and quantitative approaches into the research process. A survey was conducted in 2013 in the Grobogan regency, and it included a total of fifteen English teachers as well as participation from six JHS in the area that have English departments. After that, a case study research was carried out in order to acquire additional information that was more in-depth addressing the perceptions and practises of authentic assessment held by the teachers. This information was gathered in order to help inform future research.

In this specific instance, there were three teachers of English who participated in the interviewing process. The methods of reading, memorising, description, and categorization were utilised in the process of doing the data analysis. The results of the research indicated that there were not significant differences between the various teachers in terms of the ways in which they made use of authentic assessment. When it came time to evaluate their students, most teachers preferred to utilise written assessments, assessments based on tasks, assessments based on performance, and assessments based on classroom

observations. However, the research showed that teachers do not implement the assessment principles in a manner that is suitable for the authentic assessment because they do not do it correctly. This is because the authentic assessment requires teachers to demonstrate their understanding of the content being assessed. From the findings, it could be seen that the researchers failed to focus on the role of teachers' beliefs in their assessment practises.

The effects of established markers of teacher quality and conflicting characteristics of quality instruction on students' historical knowledge were investigated by Fitchett and Heafner (2018). This study used data from the National Assessment of Educational Progress (NAEP) U.S. history test taken by a nationally representative sample of eighth-graders and administered by social studies teachers. The eighth grade data allowed them to undertake a study of student performance in connection to the instructor, so they went with that. The history component of the social studies curriculum is the most prominent, so that's why they chose it. Means were compared using t-tests, and a two-tiered hierarchical linear plausible values model was constructed using HLM software for analysis. The results showed that eighth grade social studies instructors who had degrees in history and secondary education were more likely to employ discipline strategies seen as valuable by the field and to use performance-based assessment.

Sundeme (2019) studied the implementation of PBA by middle school educators in Ghana's Berekum Municipality, Brong-Ahafo Region. The study employed a quantitative strategy based on a descriptive survey research design procedure. Data was collected from 588 middle school teachers in the Berekum Municipality using census sampling techniques. A questionnaire and a check

list for keeping track of relevant paperwork were used in the investigation. The study found that JHS teachers in the Berekum Municipality did not understand what was included in PBA. The study found that most teachers were not using PBA because they lacked the expertise to implement it.

The purpose of the research conducted by Abualrob and Al-Saadi (2019) was to determine the degree to which teachers of higher-elementary science make use of the PBA Approach. The information for the study was obtained through the completion of a questionnaire by 109 educators of science who worked in Palestine's 60 higher elementary schools. Individual, semi-structured interviews were carried out with fourteen different science educators. The population for this analysis includes all sixth through eighth grade science teachers in Jenin, Qabatyah, and Toubas for the 2016–2017 school year. These educators taught classes ranging from fifth to tenth grade and belong to various educational directions. A method known as random sampling was utilised in order to select 144 science teachers from 60 different schools to teach science to students in grades 9 and 10.

They were comprised of a total of 130 teachers who had been selected to fill out questionnaires. It was determined that 109 were helpful for the analysis, and personal interviews were conducted with 14 more scientific educators. The findings indicate that the participants are test-oriented teachers because they place a significant amount of importance on exams as a means of evaluating their students. This suggests that grades and degrees are still the most important references that are used when assessing students. This can be linked to the fact that teachers have a heavy workload and have not been given adequate training or practice in using alternative assessment methodologies,

both of which prevent them from devoting enough time to performance-based assessment. Furthermore, alternative assessment procedures are rarely used due to a lack of training and experience in their implementation.

Laboratory reports are by far the most common form of this type of PBA. Collecting objects from the surrounding environment that are relevant to the science lesson, writing research papers, creating a student portfolio (also known as a file of achievements), conducting research, and designing computer programmes are the instructional methods that are utilised the least frequently. It should come as no surprise that such strategies need additional time and work. This additional time is needed from both the students and their teachers. In addition, neither the students nor the teachers are accustomed to performing these activities because the Ministry of Education does not include them in its alternative assessment policies. Participants are considered to be teachers who are test-oriented since they rely significantly on exams or other formal tests to evaluate their students. Teachers rely primarily on instruments of classical assessment rather than PBA because they lack the experience necessary to use PBA tools effectively. PBA is used only infrequently by teachers.

The study by Arhin et al. (2021) set out to learn more about how teachers in Ghana's primary schools view authentic (performance-based) assessment and how they really use it. In their studies, the researchers used a technique known as descriptive design. To accurately represent the population, a sample of 286 teachers was selected at random from the broader group of 1,000 available teachers. It was decided to use a questionnaire to get the necessary data. The study's findings showed that primary school teachers engage in authentic assessment. Both the mean and the standard deviation were computed as part of

the questionnaire analysis. The majority of teachers at elementary schools, according to the study's findings, encourage their pupils to effectively translate problems and circumstances into tasks that have a clear purpose, apply their knowledge to issues they encounter in real life, and reflect on their own learning experiences in order to take charge of their own education. In an effort to give students more control over their education, this is done.

Anjarsari and Febriani's study from 2022 looked on the effectiveness of using authentic assessment to improve students' reading comprehension. The focus of the two researchers was to identify its effectiveness in the context of online learning for English Literature courses. This investigation took a qualitative approach and was conducted in the form of a case study. The research data consisted of online class observations made by non-participants as well as interviews (semi-structured). The participants in this study, all of whom are lecturers in English teaching at a university in West Java, were purposefully chosen for participation in the research. In the English Literature courses that were taken online, the findings of the class observations revealed that the lecturer used authentic (performance based) assessment.

Challenges affecting the implementation of performance-based assessment among teachers

Turkish information technology teachers' opinions and usage examples of PBA methodologies (PBAMs) were explored by Daghan and Akkoyunlu (2014). They wanted to know which PBAMs were frequently utilized or not, why people preferred these approaches, and what people thought about how widely applicable they were. Phenomenological design, a qualitative research method, was used to create the study. Triangulation was made sure of and

procedures including observations, interviews, and document analysis were utilised. All six of the information technology teachers in Ankara's five schools are alumni of the faculty of education's computer education and instructional technologies departments. The teachers were chosen through a deliberate random sampling procedure. Teachers identified the two biggest barriers to the use of PBAMs as being a shortage of time and the difficulty of these techniques. The reasons for not using theme, which was created after the analysis of the interview recordings, states that instructors' levels of competency and willingness, as well as their perceptions of the benefits of the methods, were among the factors that prevented them from using specific PBAMs. The participants' attitudes toward PBAMs were largely favourable. They believed they would be helpful for the classes if used effectively, however due to a lack of time and their perceived difficulty, they did not use them at a suitable level.

The goal of Ogan-Bekiroglu and Suzuk's (2014) study was to find out how well physics teachers-to-be understood assessment and how it was used in the classroom. It was a mixed method convergent approach that used both quantitative and qualitative methods. Almost all of the participants had minor problems with one of the following steps: making a performance assessment, making a portfolio, writing open-ended questions, making sure the assessment was reliable and valid, figuring out what the participants already knew, and making criteria and scoring them. Also, almost half of the physics teachers-to-be said that they might not be able to use alternative assessment methods in the future because of a crowded classroom, the time it takes to prepare and use the assessment method, not being able to finish the curriculum on time, and the time it takes to grade.

Kankam et al. (2014) did a study to find out how teachers in senior high schools (SHSs) in Ghana felt about the authentic assessment techniques used in Social Studies classes. A descriptive case study was used to do the research. Ten SHSs in Ghana's central region were selected for the research. Twenty Social Studies educators from ten secondary schools (SHSs) in Ghana's Central Region participated in the research. The main way that information was gathered was through a semi-structured interview. The descriptive method was used to analyse the data based on the themes that came up during the data collection. The results showed that teachers thought that their schools' policies, time, resources, and assessment methods limited the type of authentic assessment they could use in their classrooms.

Kirmizi and Komec (2016) conducted a study in order to evaluate the opinions of instructors and students regarding the use of PBA in English classes taught in Turkish high schools. The research utilized both qualitative and quantitative methods in its construction. There were a total of 124 high school students and 20 of their teachers who took part in the research for this study. In order to acquire qualitative data, semi-structured interviews were carried out with the instructors, while a questionnaire was given to the students in order to collect quantitative data. According to the qualitative data, in general, teachers grumbled about difficulties in application and a lack of time. In addition, neither the instructors nor the students felt that the PBA was conducted in a fair manner. The instructors were concerned about accurately evaluating the students' performance tasks.

Research conducted by Sundeme (2019) in the Berekum Municipality of Ghana's Brong-Ahafo Region looked into the problems that instructors of JHS face when implementing performance-based assessments of their students. A descriptive survey research design technique with a quantitative approach was utilized for this investigation. In the course of the research, 588 JHS teachers from the Berekum Municipality were selected at random for sampling using the census sample methodology. In the course of the research project, a questionnaire and a documentation check list were utilized. According to the findings of the study, teachers of JHS in the Berekum Municipality do not have a good understanding of what is involved in PBA. Teachers of JHSs face difficulties in terms of time constraints, inadequate knowledge, a lack of attention from policy makers, an excessive amount of work, the teaching of larger classes, and a dearth of practical materials.

The purpose of the research conducted by Abualrob and Al-Saadi (2019) was to determine the variables that prevent science teachers in Palestine from utilizing performance-based assessment. The information for the study was obtained through the completion of a questionnaire by 109 educators of science who worked in higher elementary schools. Individual, semi-structured interviews were carried out with fourteen different science educators. Teachers have said that they rarely have time to update themselves, which is why they have not done so. They are unable to adjust PBA methods due to the volume of responsibilities that have been allocated to them. According to the perspectives of instructors, another barrier that prevents them from implementing PBA is the total number of periods that occur throughout the week.

It was confirmed by six teachers that the quantity of pupils present in a classroom makes it impossible to carry out activities and implement contemporary assessment methods. Teachers claim that they do not have the option to select or utilize any assessment methods that are not specified in the assessment document that is approved by the Ministry of Education. To put it simply, the MoE's new assessment policy, it has been confirmed by all of the educators that it is not possible to use PBA as an alternate form of assessment. There is a midterm, a final, and four daily examinations that the instructor needs to complete on time. According to the opinions of the educators, the system places a strong emphasis on examinations. Only the OE assessment policy, which places an emphasis on the use of exams, can be responded to by the teachers. Every educator acknowledges that the format of school books hindered them from employing a variety of other methods of assessment. There were five teachers who confirmed that they are preparing their students for the examination, and as a result, their primary concern is how to help their pupils improve their scores.

Salma and Prastikawati, (2021) did a study to explore the implementation of a performance-based assessment, specifically with regard to its washback and the difficulties that were experienced by the instructor. The methodology of the study was classified as qualitative research. The participants in the study included both the 10th-grade students and the English teachers at SMA N 2 Pati. Participants included a total of 72 students and two tenth-grade English professors from two separate classrooms. Because the researchers noticed that the English teachers they observed used PBA, they chose to conduct the sample collection for the study using purposive sampling. An open-ended

questionnaire consisting of ten questions on their teaching experience and how they applied PBAs as well as the challenges they experienced was used to collect the data for this study. Concerning the rubric, it was established that the assessment rubric used in PBA is more difficult than the one used in traditional assessment. During the process of assessment, another obstacle that the teachers encountered was the attitude of the students. The teachers reported that some of the students were not cooperative, despite the fact that this method of assessment had a positive influence on the enhancement of the students' motivation.

Influence of teachers' knowledge on their PBA practices

Cimer and Cakir (2010) conducted research into the knowledge and practises of performance assessment among Biology teachers in Turkey. This assessment method was recently implemented as part of a curriculum revision. The researchers conducted a mixed methods study. A questionnaire and in-depth interviews were used to collect data for the study from 22 biology instructors who were employed at secondary schools in Trabzon, Turkey. These teachers were located in both rural and urban sections of the city. According to the findings, the new assessment system that was introduced along with the new curriculum had not yet been implemented into the classrooms. The research findings revealed, on the whole, that performance assessment was not carried out efficiently in the schools that participated in the research.

The teachers continued to assess students using the traditional tests in their classrooms. Portfolio and performance tasks were employed by only a few, and even then, they were not implemented properly. This is mostly because teachers lack the knowledge and skills necessary to implement the changes. The

lack of understanding regarding performance assessment methods among teachers is the primary factor that can be derived from the data. The fact that all of these strategies are new additions thanks to the curriculum overhaul and that all participating teachers had undergone at least one in-service training on the implementation of the new curriculum and assessment techniques makes this result noteworthy. This shows that, although teachers may be knowledgeable on certain fields, they may not implement the ideas. The study however failed to explore the role of teachers' belief in the implementation of these curriculum changes.

The purpose of Ogan-Bekiroglu and Suzuk's (2014) study was to investigate the level of assessment literacy possessed by pre-service physics teachers as well as the degree to which this literacy was put into practise in Turkey. The research showed that there are significant knowledge gaps between assessment theory and practise. The research concluded that teacher preparation courses should give equal weight to theories and types of assessment, highlight the importance of valid and reliable assessment, expose students to both traditional and PBA methods, and provide opportunities for students to reflect on, practice, and alter assessment practices. Thus, teachers may have the knowledge but often fail to put this in to practice. Confirming previous findings by Cimer and Cakir (2010). Although both studies failed to account for the role of teachers' belief.

Moderating role of teachers' experience and school type on the relationship between performance-based assessment knowledge and practices of teachers

Whiles there is limited studies on the moderating role of teachers' experience and school type, a few related studies on other demographics were found. Teachers from third grade through high school in a Midwestern state were studied by Frey and Schmitt (2010) who looked into how they assessed students in the classroom. Several best practice assessment methods were evaluated, in addition to the prevalence with which certain item types were used (PBA, teacher-made tests, and formative assessment). A total of 140 instructors from third through twelfth grades across 22 school districts were sampled using a cluster sampling method. Six categories of classroom assessment are tested on in this battery of questions. They compiled descriptive statistics for each question in order to get a better look at how often educators use each method of student assessment. The findings showed that female educators favoured performance-based assessment over traditional methods more frequently than their male counterparts. The use of formative assessment or performance-based assessments was likewise not related to teacher experience.

Teachers' abilities in-class assessment were the focus of Alkharusi's (2011) research. The goal of this research was to examine teachers' perceptions of their own assessment abilities in connection to demographic variables such gender, teaching specialty, grade level, years of experience, and number of hours spent on in-service assessment training. Over two hundred and thirteen public school educators in Muscat, Oman, took part. A scale of 25 questions designed to measure participants' perceptions of their own assessment abilities

was used in the research. The results showed that teachers' perceptions of their own assessment abilities varied significantly by demographic factors such as gender, teaching specialty, grade level, number of years in the profession, and level of in-service assessment education. Teachers with more than 10 years of experience reported utilizing performance assessment at higher rates than those with 1 to 5 years or 6 to 10 years of experience in the classroom. However, no significant differences were found between the sexes in terms of confidence in one's own abilities to analyse test questions, apply performance assessment, and grade.

Attom's (2017) study set out to learn how public high school instructors conceptualize authentic assessment in the classroom. It also determined the extent to which teachers in public SHSs use authentic assessment in their grading practices. The SHSs were divided into three groups using the stratified sampling method. Five schools (three regarded as Category A and two regarded as Category B) were selected using simple random selection, while two schools from Category C were selected using a selective sampling strategy. There were a total of seven educational institutions involved. Each school's sample size was determined using a proportional stratified random sampling method. Then, using the convenience sample, 226 people were chosen to take part in the research. For this study, we employed a well-crafted survey with 85 questions. The results disclosed difference in authentic assessment techniques between schools in categories B and C, but no difference between schools in categories A and B.

Mediating role of teachers' beliefs in the relationship between knowledge in performance-based assessment and practices of teachers

Liu (2011) investigated the connection between educators' pedagogical ideas and classroom practises, and went on to single out disparities in the beliefs and actions of Taiwanese educators on every issue related to the use of technology in the classroom. A total of 1139 primary school teachers participated by completing surveys regarding their pedagogical ideas, most frequently used teaching strategies, and other aspects related to technology integration. The majority of teachers in Taiwan believe in putting the needs of their students first, according to a chi-square test, yet they don't use constructivist methods in the classroom. This statistical analysis further shown that there is a discrepancy between instructor views and classroom practises.

Thomas (2012) performed a cross-sectional study in Pakistan's secondary and middle schools to compare the views of qualified and untrained educators on assessment in the classroom. The sample of 123 educators was taken from 15 different schools located in different locations throughout Pakistan. Teachers were divided into two groups, those who had received training and those who had not, and then picked using convenience sampling techniques. Sample results were tabulated and examined. Chi-Square was used to test the hypothesis. The research found that, with a few exceptions, qualified and untrained educators have very similar views on teacher knowledge and pedagogical practises. The research found no statistically significant difference between skilled and untrained instructors' attitudes about classroom assessments or their preferences for using such assessments to guide instruction.

Aliningsih and Sofwan (2015) carried a study to determine the views and behaviours of English instructors about genuine assessment in the pilot project schools of the 2013 curriculum in Grobogan regency. They used a combined quantitative-qualitative approach. A survey was administered to 15 English instructors from six JHSs in Grobogan regency that used the 2013 curriculum. A case study was then done to get more detailed information regarding instructors' beliefs and practices of genuine assessment. Three English teachers were interrogated in this instance. Data collected by questionnaire were categorized, sorted, tabulated, and reported. According to the findings of the study, the teachers had positive perceptions toward authentic assessment since they concurred that the assessment strategy is useful for evaluating the progress and accomplishments of the students. The study found that the teachers' perceptions towards authentic assessment had a significant effect in their practices. As a result of this study's findings, it was determined that teachers were attempting to transition from the use of traditional assessment methods to an authentic assessment approach by beginning to implement some contemporary assessment methods.

The purpose of the study by Munif, Fauziati, and Marmanto (2019) was to characterize the attitudes and actions of lecturers on the use PBA in Indonesian public universities affiliated with the Ministry of Industry. Case studies and other qualitative methods were used in this investigation. Data was collected through interviews, participant observation, and content analysis of archival materials. Both of the participating educators were male. In order to analyse the data, the researcher relied on the constructs developed by Ruiz-Primo and Shavelson (1996). These parts all contribute to individuals' beliefs in

their own unique ways. The findings pointed to the fact that their convictions were formulated on the basis of their acquired information and experiences. What they say and do while designing and implementing a performance assessment was also affected.

The research conducted by Ha, Tran, and Tran (2021) looked into the attitudes and behaviours of Vietnamese EFL educators about assessment in the context of curricular reform. The study took a qualitative approach, which allowed for investigation of a modern phenomenon in its natural setting. Six seasoned educators participated in this research. Using a snowball sampling method, two seasoned educators from each grade level were chosen. A total of six educators were interviewed, and test materials were also analysed. A thematic analysis was performed on the interview data. The results showed that the high-stakes tests had a profound effect on educators' testing views, particularly with regard to the importance they placed on linguistic items in the examined subject and forms of assessment. Their methods of testing reflected these values precisely. Teachers' ideas and actions ran counter to sound pedagogy and the goals of the planned curriculum.

Thomas (2012) performed a cross-sectional study to examine the differences in perceptions of classroom assessment between trained and untrained middle and secondary school teachers in Pakistan. The sample of 123 educators was drawn from 15 different schools located in different cities across Pakistan. Teachers were separated into those who had had training and those who had not, and then picked using convenience sampling techniques. The results of the sample data collection and analysis were tabulated. Chi-Square was utilized to examine the hypothesis. The study found that, with a few

exceptions, trained and untrained instructors do not significantly differ in their perceptions of teacher knowledge and instructional methods. The results showed that both the trained and the untrained groups agreed that informal assessments conducted in the classroom were the most effective means of evaluating students' progress; they also disagreed that such assessments were a waste of instructional time.

Kinay (2018) set out to investigate the views of future educators regarding authentic assessment and its associated factors. The study used a survey design, and its sample population included 612 future educators, 368 of whom were female (60.1%), leaving 244 male (39%). The data was gathered using a self-created instrument called the Authentic Assessment Belief Scale (AABS) that had 17 total items and 3 distinct subscales. SPSS 20.0 was chosen as the package program for data analysis. Independent samples t-tests and one-way analysis of variances were used to examine the differences in the future educators' attitudes regarding authentic assessment based on gender. Results showed that future educators had strong attitudes toward real-world testing.

Research by Latipah and Purnawarman (2019) qualitatively examined the attitudes and knowledge of EFL educators about PBA, as well as their understanding of the steps necessary to design and implement an efficient PBA strategy in two secondary schools in Bandung and Cimahi, Indonesia. Questionnaires were filled out by twenty teachers, three instructors were interviewed, and classroom observations were taken. Teachers believe PBA has a beneficial impact on students because it provides opportunities for meaningful learning, accurately portrays students' speaking abilities, and helps them develop their communication skills. Some educators participated in the

development of scaling criteria and used them to evaluate student achievement during implementation. They did, however, point out that the criteria aren't good enough to reduce subjectivity, especially with regards to students' group performance. There were still problems with managing students' feedback on an individual basis.

Teachers' beliefs toward and practices with performance assessment were studied by Munif et al. (2019) at one of the public universities in Indonesia that is under the purview of the Ministry of Industry. This investigation involved both qualitative methods and a case study approach. Two college instructors who employ a performance-based approach to evaluating their students' skills are the subjects of this study. Everyone in the classroom has between five and eight years of experience as a teacher. T1 and T2 served as participants in interviews, and observations and document analyses were used to compile the data. The instruments were developed and the data was analysed using the five components of performance assessment. The outcomes showed inconsistencies between their words and their actions. The disparities surfaced due to the teachers' varying theoretical backgrounds, subject matter expertise, and practical classroom experience. Participants' opinions that performance assessment is the most useful tool for measuring students' progress in applying what they have learned were corroborated by the data. They outlined five indications that should be taken into account while creating performance assessment, including learning objectives, performance task, response-format, prompt, and scoring method. Because they use the students' needs and skill levels as guides in designing and implementing the performance assessment, teachers gain valuable insight into both.

Participants viewed assessment as an integral element of the educational process that shapes students in meaningful ways. The teachers have relied heavily on the participants' perspectives as a key factor in their decision-making. For them, the rubric is the most comprehensive instrument for evaluating student performance because it accounts for the various ways in which students describe the outcomes of their efforts. The participants have already organized the performance assessment according to what was delivered by the specialists. They have modified the grading criteria to suit the learning outcomes, student proficiency, and other factors involved in assigning grades. However, it has not been carried out adequately in terms of performance assessment implementation and student feedback.

Salendab's (2021) research attempted to evaluate the effectiveness of PBATs at STI College Cotabato and their association with student achievement. A quantitative method was used for the investigation. The survey asked questions of two different sets of people. Teachers of Communication Arts 3 classes made up the first group, and their students made up the second. One hundred and five (105) students participated in the study; three (3) teachers functioned as teacher-respondents, and each teacher was accountable for thirty-five (35) pupils. Statistics like the mean, median, mode, and Pearson Product-Moment Correlation Coefficient were employed. Teachers thought the tools were very useful for evaluating student progress, but students only thought they were somewhat useful for measuring teacher performance.

Researchers Salma and Prastikawati (2021) looked into the effects of using a PBA on students and teachers alike. The study opted for a qualitative approach. Those analysed were SMA N 2 Pati's English instructors and their

tenth-graders. Two tenth-grade English teachers and their 72 students took part. Because the English teachers under observation were employing performance-based assessment, a purposeful sample was selected for the study. A questionnaire with 10 free-form questions on teachers' backgrounds, their use of PBAs in the classroom, and the challenges they encountered in doing so, was used to compile the data. English teachers have spoken out about how PBAs have helped them gauge their students' true language abilities. As opposed to more conventional forms of assessment, such as a multiple-choice exam, more in-depth data on student performance was readily available for observation.

Researchers Arhin et al. (2021) looked into primary school educators in Ghana to learn more about their views and experiences with authentic (performance-based) assessment. Researchers opted for a descriptive methodology. From the available pool of 1,000 educators, a random sample of 286 was selected. The information was gathered through a survey. The mean and standard deviation were used to evaluate the survey results. Most elementary school teachers agreed with the statement that authentic (PBA) assessment is a more accurate reflection of students' abilities to apply knowledge and cognitive skills to solve substantive, meaningful tasks; requires students to work together to find solutions to problems; promotes the growth of higher-order thinking; and is amenable to a wide range of construct-oriented activities.

Three English instructors in Hokkaido, Japan, who used their own methods of course assessment, were the focus of a qualitative research by Chinda et al., (2022) that investigated the negative effects of utilising PBA. Using in-depth interviews with 15 students and a self-reflective approach from

three educators, this study drew on qualitative research to draw its conclusions. There was a variety of strategies presented by educators for introducing proficiency-based language testing. They did, however, reach a consensus that using PBA with rubrics was essential for producing reliable results in evaluating students' progress toward learning outcomes. In terms of spill over effects, they found that PBA with thorough feedback gave students a welcoming and demanding learning environment, resulting in self-developed English performances, emotions of achievement, and enhanced memory of the English utilised in the presentations.

Anjarsari and Febriani's (2022) study looked at how using authentic assessment helped students learn more from their English Literature classes online. The qualitative case study methodology was used in this investigation. Class observations conducted online (non-participant observations) and interviews were used to compile this study's results (semi-structured). Everyone who took part in this research is a professor at one of the universities in West Java, and they all teach English there. Reading comprehension was found to be enhanced when teachers used written replies.

Summary

The literature review section of a research study aims to provide a comprehensive overview of the existing literature relevant to the research topic. In this particular study, the literature review section reviewed the relevant concepts, theories, and empirical literature related to the study's objectives. The review began by discussing the concepts related to the research topic. These concepts were identified based on the research questions or hypotheses, and included terms such as assessment, authentic assessment and performance based

assessment, among others. The purpose of reviewing these concepts is to ensure that the reader understands the various terms and their definitions that are used throughout the study.

Next, the literature review delved into the two theories that were deemed relevant to the research: Bandura's social cognitive theory and Vygotsky's social constructivism theory. Bandura's theory emphasizes the importance of observational learning and self-efficacy beliefs, while Vygotsky's theory emphasizes the role of social interaction and cultural context in learning and development. By reviewing these theories, the study aimed to establish a theoretical framework to guide the research.

Finally, the literature review examined the empirical literature related to the study's objectives. This literature included studies that explored similar research questions or hypotheses, and may have provided insight into the methods and findings that could be relevant to the current study. By reviewing the empirical literature, the study aimed to identify gaps in the existing research and to justify the need for the current study. The literature review served an important role in providing context and background for the research. It helps to establish the conceptual framework and purpose of the study, and provided a foundation for the methods and findings presented later in the study.

CHAPTER THREE

RESEARCH METHODS

Introduction

The purpose of the study was to assess performance-based assessment (PBA) practices of teachers in second cycle institutions in the Cape Coast Metropolis. This chapter presents the research design, the study area, data collection methods and procedures, the population and its characteristics, the sample size and sampling technique, instruments used for data collection, ethical considerations, and data analyses techniques.

Research Paradigm

A researcher's philosophical orientation is captured by their paradigm. The choices made about research methodology and procedures, among other things, are profoundly affected by this. Therefore, a paradigm outlines how we will create meaning from the data we collect (based on our individual experiences). The four primary research paradigms described by Tashakkori, and Teddlie, (2021) and Kivunja and Kuyini (2017) are positivism (for making predictions), interpretivist (for learning how things work), emancipatory (for challenging existing assumptions), and pragmatism (for solving problems in the real world).

In this study, the researcher embraced positivism. Deductive reasoning, the generation of hypotheses, their testing, the providing of operational definitions and mathematical equations, computations, extrapolations, and expressions are all crucial to the positivist paradigm. Its purpose is to explain phenomena and make predictions based on observable facts. The objectives of this research were to shed light on teachers' PBA-related knowledge, practice,

and difficulties in the classroom. Three hypotheses concerning PBA will were also investigated in this study, exploring the influence of PBA knowledge on PBA practices, how teaching experience and school type influence the relationship between PBA knowledge and PBA practices, and lastly the mediating role of beliefs the relationship between PBA knowledge and PBA practices. This point of view is in line with the tenets of quantitative research, which include the testing of hypotheses, the use of numerical data, the application of unbiased procedures, the identification of broad patterns of association, and the careful manipulation of individual factors (Hammersley, 2013). In order to better display its findings and test hypotheses pertinent to the study's goals, the current investigation makes use of numerical data.

Research Design

A research design is a blueprint for conducting studies in a systematic way that yields reliable results that can be used to answer research questions (Cohen, Manion, & Morrison, 2018). The methodology used in a study can be classified as either quantitative, qualitative, or a hybrid of the two. The study was quantitative in nature. Creswell (2014) states that there are two types of experimental designs for quantitative research: true experiments and quasi-experiments. In order to describe the tendencies, attitudes, or views of a population numerically, survey research analyses a subset of that group (Creswell, 2014).

For this study, the investigator used a descriptive survey strategy. Some studies in the field of education are explanatory or interpretive, while others are more descriptive (Cohen, Manion, & Morrison, 2018). By analysing responses from a representative cross-section of a community, a survey design can

quantify and characterise broader social trends, attitudes, and opinions (Creswell, 2014). Creswell implies that the researcher extrapolates or makes inferences to the population from the sample results. Sometimes the goal of descriptive research is to establish causal relationships between existing conditions and the past events that shaped them. Many different types of people, groups, institutions, methods, and materials are examined in order to provide a better understanding of the things and events that make up their respective fields of study. In order to define the nature of the current conditions, provide benchmarks against which the current conditions may be evaluated, or discover the connections that exist between specific occurrences, surveys frequently collect data at a certain instant in time. This research detailed educator understanding, application, and obstacles in PBA.

Study Area

Only one district among the Central Region's twenty-three (23), Cape Coast, is considered a metropolitan area. Cape Coast is located between longitudes 1° 11' and 1°.41' west of the equator. Abura Asebu Kwamankese District to the east, Komenda Edina Eguafo Abrem to the west, the Gulf of Guinea to the south, and Twifu Heman Lower Denkyira District to the north are the districts that make up the Metropolis. Its largest point, Brabedze, is roughly 17 kilometres from Cape Coast, the capital of the Metropolis and the Central Region, and it covers an area of around 122 square kilometres in total. Originally created as a municipal Assembly under L.I. 1373 in 1987, the Municipal Assembly/Metropolis (CCMA) was granted Metropolitan status under L.I. 1927 in February 2007. Cape Coast's position as Ghana's educational centre and tourist hub, as well as its proximity to the country's three largest cities

(Kumasi, Accra, and Takoradi), present an excellent chance to grow the service sector in the country. This city is often regarded as the epicentre of secondary education in Ghana. Quist (2003) claims that since the colonial era, Cape Coast has been the centre of secondary education in Ghana, boasting some of the country's greatest and most prominent schools, which have drawn the brightest graduates from Ghana's elementary schools.

Literacy

Nine out of ten residents of the Cape Coast Metropolitan Area aged 11 and up can read and write, according to the 2010 Population and Housing Census (Ghana Statistical Service [GSS], 2014). The average for the region is 78.2%, and for the country it's 74.1 %. Young people in the Metropolis have an extremely high rate of literacy. Roughly 97% of people between the ages of 11 and 24 can read and write. The literacy rate in the Metropolis is rather high, with 80% or more of the people able to read and write in at least one language.

The percentage of English-only readers and writers in the Metropolis is also rather high, at 25.6%. Only 2.8% of the population is literate in both English and a Ghanaian language, while 67.2% are bilingual in both languages. One in every 26 people in Ghana can read and write in English, French, and a local Ghanaian language, or 3.9% of the total population. In the Metropolis, male literacy stands at 94.1% while female literacy is at 85.6%. The table also shows that men 65 and up have a greater literacy rate (71%) than women of the same age (38%). There is little variation in the literacy rates of young men and women, but men over the age of 60 are significantly more likely to be listed as literate than women.

Almost a third (34.4%) were college-bound as of 2010, with another 27.2% enrolled in elementary school, 13.1% in junior high, and 11.4% in senior high (GSS, 2014). That most of the migrants in the Metropolis are also students can be deduced from this. More men than women are enrolled in postsecondary institutions in the Metropolis at the moment (40.4% against 28%). On the other hand, the proportion of female students is higher across all levels of education from elementary through high school. Additionally, among those who have attended school in the past, somewhat more women than men have completed at least the first grade. Among those who have completed some form of formal education, nearly half (46.1% to be exact) stopped at the Middle/JSS/JHS level, while only 16% made it to the Secondary/SSS/SHS. The data also shows that whereas 16.5% of girls who went to school in the past had completed elementary school, only 11.7% of males did so. When comparing the sexes, men were 17.3% more likely than women (10.5%) to complete post-secondary education.

Population

The term target population was used by Saunders, Lewis, and Thornhill (2003) to describe the set of individuals who will be polled or other factors that will be considered in the study. Wallen and Fraenkel (2001) offer a different take on the issue, suggesting that the population is the group of people about whom the researcher cares most when making broad generalisations. This population is of particular importance to the researcher since it will be used to draw meaningful findings. The target population for the study consist of all 11 public second cycle institution teachers in the Cape Coast Metropolis. These

schools included are presented below. The target population includes 11 second cycle institutions and 1299 teachers.

Table 1: Target population

School type	Name of School	Number of Teachers
1.Senior High Technical	Oguaa Senior High Technical School	93
	Efutu Senior High Technical School	84
	Mfantsipim School	219
2.Technical	Cape Coast Technical Institute	109
Total		505
3.Senior High schools	St. Augustine's College	118
	Ghana National College	149
	Holy Child School	97
	Adisadel College	98
	Academy of Christ the King SHS	103
	University Practice SHS	110
	Wesley Girls' SHS	119
Total		794
Grand Total		1299

Source: GES, Cape Coast Metropolis (2022).

Sample and Sampling Procedure

Findings that are more accurate may be obtained by the researchers if they were able to conduct their investigation among the complete population of interest (Kang, 2021). However, in the majority of situations, it would be impracticable, if not downright impossible, and ineffective to undertake

research including the entire population. A study that is conducted using appropriately selected samples can yield more accurate results than a study that is conducted using the complete population in some instances (Kang, 2021).

All public senior high schools, senior high technical and technical schools were used in the study. This was to determine if the type of school played a role in the relationship between PBA knowledge and PBA Practices. Thus, the census approach was used to select all public schools in the Metropolis. Out of a total of 1299 teachers in 11 schools in the metropolis, 460 were used as a sample.

The G*Power analysis was utilised in order to arrive at the appropriate sample size for the investigation (Faul, Erdfelder, Lang, & Buchner, 2007). When doing an a priori analysis, the required sample size is determined by computing the required significance level (0.05), the desired statistical power (1- β), and the to-be-detected population effect size. These values are given by the user (Faul, Erdfelder, Buchner, & Lang, 2009). The possibility that the occurrence may have occurred simply by chance is referred to as the significance level of a statistical test (Riffenburgh, 2012). For social science research, a significance level of 0.05 (95% confidence level) is usually deemed appropriate. According to Cohen, Manion and Morrison (2018), the statistical power of a study is the probability that it will identify an effect when there actually is an impact there to be found, distinguishing this from the possibility of finding the effect by random chance. The power level was set at 0.90 for the study. Therefore, for a significance level of 0.05, power of 0.90, a sample of 459 is required to run a two-tailed linear bivariate regression.

The researcher used a stratified proportionate sampling technique to determine the appropriate number of teachers from each school. This was used because there were several schools with different sample sizes, hence the need to determine the sample based on the population of teachers. Convenient sampling was used to select the teachers for the study. Table 2 presents a summary of the sample size.

Table 2: Sample size

Original	Name of School	Gender	Number of Teachers	Sample size
Senior High	Oguaa Senior High	Mixed	93	33
Technical	Technical School			
	Efutu Senior High Technical School	Mixed	84	30
	Mfantsipim School	Boys	219	77
Technical	Cape Coast Technical Institute	Mixed	109	39
Total			505	179
Senior High	St. Augustine's College	Boys	118	42
school	Ghana National College	Mixed	149	53
	Holy Child School	Girls	97	34
	Adisadel College	Boys	98	35
	Academy of Christ the King SHS	Mixed	103	36
	University Practice SHS	Mixed	110	39
	Wesley Girls' SHS	Girls	119	42
Total			794	281
GRAND TOTAL			1299	460

Source: Field data (2022)

Data Collection Instruments

The respondents themselves were used to acquire the primary data. The use of questionnaires has many advantages, including the provision of standardised and open replies to a variety of questions from a broad population or sample. They have the potential to be inexpensive, dependable, legitimate, speedy, and simple to finish (Cohen et al., 2018). The first section covers the demographics of respondents. This includes gender, teaching experience and educational qualification. The second part consists of close ended questions on teachers' knowledge in PBA. The third part focuses on teachers' PBA practices. The next section focuses on teachers' beliefs and the last section consist of challenges teachers face in PBA.

Teachers' knowledge on performance based assessment

A questionnaire on teachers' knowledge on PBA was adapted from Sundeme (2019). Sundeme developed the 13-item instrument based upon existing literature. The instrument is a four (4) point Likert Scale, arranged according to agreement level. These were on a one to four scale. These represented Strongly Agree, Agree, Disagree and Strongly Disagree. It had a reliability of .690 which is considered appropriate. The 13 items of the knowledge of PBA were adapted. In consultation with my supervisor, these items were reworded for clarity and ease of understanding.

Teachers' belief about Performance Based Assessment

A questionnaire on teachers' beliefs about PBA was adapted from Muñoz, Palacio, and Escobar (2012). This included items that generally looked at teachers' beliefs about assessment in an English as a Foreign Language context in Colombia. It consisted of 18 statements, and respondents were asked

to indicate how much they agreed or disagreed with each statement using a 5-point scale (which ranged from totally agree to totally disagree). The statements were crafted with the intention of examining the following four conceptions regarding assessment: (1) the accountability of schools (2 items), (2) the improvement of teaching and learning (8 items), (2) the certification of students' learning (2 items), and (4) the irrelevance to the work of teachers and the learning of students (6 items). These statements were adapted to reflect teachers' beliefs about PBA. The original researcher, however, failed to report on the reliability of the instrument. Also, the adapted scale did not divide the instrument into subscales as was designed by the author.

Teachers' practices of performance based assessment

A questionnaire on teachers' practice of PBA was adapted from Attom (2017). Attom developed the 16-item instrument based upon existing literature. The instrument is a four (4) point Likert Scale, arranged according to agreement level. These were on a one to four scale. These represented Strongly Agree, Agree, Disagree and Strongly Disagree. It had a reliability of 0.86 which is considered appropriate.

Teachers' challenges of performance based assessment

A questionnaire on teachers' challenges in PBA was adapted from Sundeme (2019). Sundeme developed the 10-item instrument based upon existing literature. The instrument is a four (4) point Likert Scale, arranged according to agreement level. These were on a one to four scale. These represented Strongly Agree, Agree, Disagree and Strongly Disagree. It had a reliability of .943 which is considered appropriate.

Pilot testing of instruments

Survey methods are frequently used in quantitative research, which entails deciding what questions to ask, developing and testing a questionnaire, and making any necessary tweaks before administration (Cohen, Manion & Morrison, 2018). Through piloting, you can spot wording that could be interpreted in multiple ways. Like excellent law, an ideal questionnaire has certain qualities, such as being clear, straightforward, practical, limiting the likelihood of error on the side of participants and data analysts, inspiring confidence in respondents, and eliciting truthful answers (Cohen et al., 2018).

According to Connelly's recommendation, the sample size of a pilot study has to be equal to 10 percent (130) of the sample size that would be used in the main study. A pilot test was conducted using SHS teachers at Mfantsiman Girls Senior high in the Mfantsiman Municipal Assembly and Edinaman SHS in the Elmina Municipal Assembly. For the piloting, 154 teachers were used. This is because, it is recommended (Pallant, 2020) that 150 or more sample is needed to run an exploratory factor analysis. Others have suggested that five cases of each item would be sufficient for the majority of circumstances (Tabachnick & Fidell, 2013). The 154 teachers were deemed appropriate for the pilot test. They were selected because of the similarities and proximity between the two municipalities and the Cape Coast Metropolis.

Reliability

One of the preliminary checks or test every researcher conducts before running the actual analysis of the study is reliability. The reliability testing is used to establish whether the items that were employed in the development of the scale can produce reliable results or otherwise for the researcher.

Consequently, the study found it very important to check for the reliability scores of the items used to measure all four variables using the Cronbach Alpha statistical technique. Generally speaking, an alpha between 0.6 and 0.7 suggests a reasonable level of dependability, and an alpha of 0.8 or higher is excellent (Ursachi, Horodnic, & Zait, 2015). However, results above 0.95 should be interpreted with caution, as they may point to unnecessary redundancy (Hulin, Netemeyer, & Cudeck, 2001). Hence, the values presented in the Table 3 below were evaluated against this threshold.

Table 3: Reliability (α) of instruments

Original Instrument	Items	Original	Pilot	Main data
Knowledge of PBA (Sundeme, 2019)	13	.690	.733	.701
Beliefs about PBA (Muñoz et al., 2012)	18	N/A	.727	.787
PBA practices (Attom, 2017)	16	0.86.	.747	.731
Challenges in PBA (Sundeme, 2019)	13	.943	.839	.796
Total	60	N/A	.700	.859

Source: Field Data (2022)

The reliability of the instruments through a pilot test of 154 teachers revealed that with 13 items measuring knowledge, the Cronbach alpha value was 0.733, beliefs which had 18 items also had a Cronbach alpha value of 0.727, PBA practices which had 16 items reported a Cronbach alpha value of 0.747, and challenges with 13 items had an alpha of 0.839. These findings confirmed the reliability of the items in the questionnaire before data collection.

Validity

The validity of the research instrument was determined to check if they measured what they are supposed to measure. To check content validity, the researcher conferred with the supervisor and other measurement experts at the U.C.C's Department of Education and Psychology. Construct validity was ascertained through an exploratory factor analysis using data from the pilot test. Suggestions and ideas were utilized to enhance the instrument in order to increase its validity.

In consideration of both validity and respondent fatigue, the scale length should not be less than six items, and the validity gain from each additional item is likely to be minimal when the scale length exceeds twelve items (Soto & John, 2018). In addition, four items per subscale are sufficient for good internal consistency (Hinkin & Schriesheim, 1989). Also, each factor should be represented by three to five items (MacCallum et al., 1999; Raubenheimer, 2004; Pallant, 2020). In component analysis, several variables are demonstrated to have negative loadings. However, a negative sign of loading has no bearing on the relationship between the variable and the factor (Asnawi, Gravell, & Wills, 2012). However, it indicates that the variable is related to the factor in another manner (De Vaus & de Vaus, 2013).

These items were subjected to principal component analysis (PCA) using SPSS Statistics version 24. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. Some of the items had low correlation coefficients (0.20), but they were included in the final model since simulation studies (Xie, Hui, Luo, Li, Li, & Wang, 2020) recommend not

deleting items on the basis of low correlations when the items in question had enough factor loadings.

The Kaiser-Meyer-Olkin value used to determine sampling adequacy. Values should be 0.6 or above (Kaiser 1970, 1974). Also, Bartlett's (1954) Test of Sphericity should reach statistical significance ($p < 0.05$), supporting the factorability of the correlation matrix. The significance level of 0.05 suggests that a factor analysis could be beneficial for the data set (Shrestha, 2021).

Table 4: Sampling Adequacy and factorability

Variable	Bartlett's Test of sphericity	Kaiser-Meyer-Olkin value
Knowledge	.00	.735
Beliefs	.00	.632
Practices	.00	.701
Challenges	.00	.726

Source: Field data (2022)

Knowledge of PBA

The 13 items of the knowledge of PBA were adapted and, as such, required an exploratory factor analysis (EFA). The results of the principal component analysis (PCA) showed that there were five components with eigenvalues greater than 1. These five components accounted for 24.2%, 11.1%, 10.5%, 8%, and 7.8% of the total variance. Examination of the scatter plot indicated a distinct separation after the third factor. A scree test developed by Catell (1966) was used to narrow the variables down to three that would be pursued. The findings of the Monte Carlo parallel analysis corroborated this, revealing that just three components had eigenvalues that were larger than the

corresponding criteria values for a randomly generated data matrix of the same size (13 variables x 150 respondents).

Component 1 accounted for 24.2% of the variation, component 2 for 11.1%, and component 3 for 10.5%, for a total of 45.8% of the variance explained by the three-component solution. Oblimin rotation was used to help make sense of these three parts. Simple structure was found when the solution was rotated (Thurstone, 1947), with all parts exhibiting multiple strong loadings (above.3). On the other hand, some products are loaded on more than one subscale, thus it's important to focus on the item with the largest loading on the factor. Having three or more items load on each part is recommended by both Raubenheimer (2004) and Pallant (2020). Weak negative correlations (-.170) and (-.227) were found between factors 1 and 2, and between factors 1 and 3, whereas factor 2 and 3 had a weak positive association (.208). According to Pallant (2020), one way to determine what a given component is and what it is called is to look for the item with the largest loading on that component. Most heavily weighted among the items that make up subcomponent 1 (B1, B2, B5, B6, B9, and B10) is subcomponent B5: collaborating with classmates to complete assignments (.758). The item with the greatest loading for subcomponent 2 (B3, B4, and B7) was student performance-based evidence of proficiency in targeted skill sets and knowledge domains (.845). When it comes to component 3 (questions B8, B11, B12, and B13), the highest loading item is one that probes students' higher-order thinking (.822).

Table 5: EFA for knowledge

	Knowledge items	Factor Loading		
		1	2	3
Factor 1: Task accomplishment				
B1	PBA is about hands-on practical work in the classroom	.563	-.165	-.029
B2	PBA is used to assess students' performance based on the execution of projects	.560	.121	-.222
B5	PBA gives opportunity for students to work together to accomplish tasks	.758	.067	.154
B6	PBA is about demonstrating proficiency in using a piece of equipment or a technique	.470	-.250	-.141
B9	PBA is about assessment that require immediate answers that allow students to demonstrate practically what has been learnt.	.457	.037	-.009
B10	PBA requires that students actively develop their approaches to the task under defined conditions, knowing that their work will be evaluated according to agreed-upon standards	.446	-.281	-.037
Factor 2: Demonstrating mastered competencies				
B3	PBA allows students to demonstrate mastered specific skills and competencies through performance	.013	-.845	.133
B4	PBA is about designing and carrying out experiments, writing essays which require students to rethink, integrate, or apply information	.186	-.612	.076
B7	PBA encourages students to develop, interpret, and use diagrams	-.100	-.646	-.314
Factor 3: Delving into higher order thinking				
B8	In using PBA, stimulus materials are presented to an individual, to generate a response that can be rated for quality using explicit standards	-.182	-.349	-.565
B11	PBA is about tangible and reliable tasks that demand students to perform an activity with their knowledge and skills on what they have been taught	.270	.070	-.475
B12	PBA is about delving into students' higher-order thinking skills, such as evaluating the reliability of sources of information, synthesizing information to draw conclusions, or using deductive/inductive reasoning to solve a problem	.000	.117	-.822
B13	PBA encourages students to produce a material or exhibit a performance as in writing or self-expression skills	.079	-.006	-.702

Source: Field data (2022)

Beliefs

A questionnaire on teachers' beliefs about PBA was adapted from Muñoz, Palacio, and Escobar (2012) and as such required an exploratory factor analysis (EFA). Seven components with eigenvalues greater than 1 were identified using PCA; these components accounted for 18.8 percent, 9.4 percent, 9.3 percent, 8.3 percent, 7.7 percent, 6.4 percent, and 6.0 percent of the total variance. Although it was chosen to keep five components using Catell's (1966) scree test, the fifth component had multiple elements loading below.3. Therefore, the original four-factor structure was maintained. Literature (Brown, 2003; Muñoz et al., 2020) on assessment was consulted to determine the four areas that needed further research. Results from a Monte Carlo parallel analysis corroborated this, revealing that the four components with eigenvalues larger than the corresponding criteria values for a randomly generated data matrix of the same size (18 variables X 150 respondents).

Component 1 explained 18.8% of the variation, Component 2 explained 9.4% of the variance, Component 3 explained 9.3% of the variance, and Component 4 explained 8.3% of the variance, for a total of 45.8% of the variance described by the four-component solution. The oblimin rotation was done to help with the understanding of these four parts. Rotating the solution revealed a simple structure; all parts were found to be heavily loaded (Thurstone, 1947) (above .3). While some items did have a loading on more than one subscale, only the highest loading was taken into account. The correlation between factors 1 and 2 was.175 and between factors 1 and 3 was.147, while the correlation between factors 1 and 4 was weak (-.092). Factor 2 correlated positively with factor 3 (.075), whereas factor 2 correlated

negatively with factor 4. (-.083). Finally, there was a marginally significant inverse relationship between factors 3 and 4. (-.070). If you want to find and name a component, Pallant (2020) advises looking for the item with the greatest loading on that component. The highest-loading item for C1 (C2, C8, C9, C10, C14, C15) was C9, eliminate subjectivity in assessments (.761). The item with the greatest loading for subcomponent 2 (C5, C6, C7, C11, C12) was C5, which entails giving students comments on their performance (.668). C17, which holds educators accountable for erroneous assessments (due to a lack of consistency, bad prompts, etc.), had the greatest loading among the three items making up component 3 (C16, C17, C18) (.790). C4 has the greatest loading of the items in component 4 (C1, C3, C4, C13), which is how PBA decides whether students are meeting course criteria (.636).

Table 6: EFA for beliefs

	Belief items	Component			
		1	2	3	4
Rule out subjectivity in assessment					
C2	Oral assessment systems enhance the efficiency of the assessment.	.423	.205	-.061	-.014
C8	Standardization of PBA scores helps teachers understand scoring methods better	.462	.403	-.021	.056
C9	PBA helps to rule out subjectivity in assessment	.761	-.024	-.181	.230
C10	PBA is well accepted by students	.595	-.048	.163	-.198
C14	PBA is fair to students	.617	.028	.014	-.028
C15	PBA systems do not force teachers to teach in a way that goes against their beliefs.	.612	-.214	.211	-.098
Providing feedback					
C5	PBA provides feedback to students about their performance	.034	.668	.019	-.225
C6	PBA results modify teaching practices	.123	.628	.028	.049
C7	PBA helps students improve their learning	-.067	.492	-.085	-.072
C11	PBA gives a better option of assigning a grade to student work.	.041	.363	.359	-.325
C12	PBA helps place students into proficiency levels (A1, A2, B1, B2, etc.).	-.115	.561	.373	.282

Table 6: Cont'D

Holding teachers responsible					
C16	PBA does not interfere with the way teachers teach.	.278	-.190	.563	-.016
C17	PBA helps to hold teachers responsible for inaccurate assessments (lack of standardization, poor prompts, etc.)	-.162	.037	.790	-.028
C18	Teachers conduct PBA and they make good use of the results.	.035	.043	.732	.032
Meeting course standards					
C1	PBA is an accurate indicator of a lesson's quality.	.146	.380	-.163	-.475
C3	PBA tools provide more precision in feedback sessions	.277	.024	.103	-.540
C4	PBA determines if students meet course standards	-.068	.148	.043	-.636
C13	PBA has a major impact on teaching	.242	.403	.069	.586

Source: Field data (2022)

PBA Practices

A questionnaire on teachers' practice of PBA was adapted from Attom (2017). Attom developed the 16-item instrument based upon existing literature. Six components with eigenvalues greater than 1 were found using principal component analysis; these components accounted for a total of 22.1%, 11.2%, 9.1%, 8.6%, 7.1%, and 6.8% of the total variance. Two parts were kept after being put through Catell's (1966) scree test. Two components with eigenvalues larger than the corresponding criteria values for a randomly generated data matrix of the same size were also found in the results of a Monte Carlo parallel analysis, lending more credence to this finding (16 variables X 150 respondents).

Component 1 accounted for 22.1% of the total variation explained, whereas Component 2 accounted for 11.2%. Oblimin rotation was used to help make sense of these four pieces of data. The rotation of the solution proved the existence of a straightforward architecture (Thurstone, 1947), with each component exhibiting several substantial loadings (above .3). Some goods,

however, loaded on many subscales; hence, only the highest loading was taken into account. The relationship between factors 1 and 2 was marginally favourable (.194). According to Pallant (2020), one way to determine what a given component is and what it is called is to look for the item with the largest loading on that component. The item with the greatest loading in component 1 (D1, D2, D5, D6, D9, D10, D13, D14, D15, D16) is D15, in which I help students show and deepen their comprehension of sensory meaning (.666). When it comes to subcomponent 2 (items D11, D12, D3, D4, D7, and D8), the highest loading item is D3, in which I have students generate and arrange ideas for a specific goal (.653).

Table 7: EFA Practices

	PBA Practice items	Component	
		1	2
Demonstrating understanding			
D1	I guide students to effectively translate issues and situations into meaningful tasks that have a clear purpose	.493	.025
D2	I ask students to write simple sentences expressing a complete thought	.468	.091
D5	I assist students to collaborate to create editorials, reports, recipes	.639	-.010
D6	I assist students to prepare criteria for assessing their own project	.464	.089
D9	I guide students to use hands-on tasks to conduct several investigations	.654	.033
D10	I ask students to provide explanations for their responses	.431	-.128
D13	I ask students to reflect on their learning process to take control of their learning	.474	.197

Table 7: Cont'D

D14	I assist students to communicate meaning through pictures	.654	-.248
D15	I assist students to demonstrate and extend their understanding about stimulus meaning	.666	-.013
D16	I make informal observation about how students are responding to instruction	.504	.107
Create and organise ideas with a purpose			
D3	I ask students to create and organise ideas with a purpose	-.175	.653
D4	I ask students to use symbols and words to show meaning	.129	.477
D7	I guide students to apply their knowledge to real life problems	-.047	.607
D8	I ask students to demonstrate their ability to organize ideas effectively	.276	.552
D11	I assist students to add supportive details to stories	-.025	.455
D12	I ask students to co-operate with peers and school personnel on projects	.117	.627

Source: Field data (2022)

Challenges in PBA

A questionnaire on teachers' challenges in PBA was adapted from Sundeme (2019). Sundeme developed the 13-item instrument based upon existing literature. Four components with eigenvalues greater than 1 were found using PCA. These components accounted for 34.7%, 11%, 10.6%, and 8.3% of the total variance. Based on the results of Catell's (1966) scree test, it was chosen to keep just two of the original parts. Thus, the researcher decided to keep studying a factor with two components. The findings of a Monte Carlo parallel analysis corroborated this, showing that the two components with eigenvalues larger than the corresponding criteria values for a randomly generated data matrix of the same size (10 variables X 150 respondents).

Component 1 accounted for 34.7% of the variation explained, whereas component 2 accounted for 11%. Oblimin rotation was carried out to help with the understanding of these two parts. There was a basic structure present, as shown by the rotating solution (Thurstone, 1947), with all components displaying multiple strong loadings (above .3). While some items did have a loading on more than one subscale, only the highest loading was taken into account. Between the first and second factors, there was a moderate positive association (.409). If you want to find and name a component, Pallant (2022) advises looking for the item with the greatest loading on that component. The highest-weighted item in subcomponent 1 (E3, E4, E7, E8, E11, E12, and E13) was "I find it difficult to practise PBA owing to a lack of resources" (.775). I have a hard time deciding what the right PBA should be for students on component 2 (E1, E2, E5, E6, E9, and E10), when the highest loading item is E2 (.724).

Table 8: EFA Challenges

	Challenges items	Component	
		1	2
	Lack of resources		
E3	It is difficult for me to score projects of students	.643	.070
E4	I find it difficult to give PBA because practical materials are lacking	.435	.199
E7	Due to the lack of attention from policymakers I find it difficult to practice PBA	.666	-.055
E8	I find it difficult to practice PBA due to lack of resources in developing the assessment process	.775	-.232
E11	I find it difficult to use PBA because of insufficient knowledge about how scoring rubric on performance can be prepared and cannot find rubric related to task topics	.659	.169

Table 8: Cont'D

E12	I find it difficult practicing PBA because I become indecisive in terms of the subject and areas to concentrate on	.709	.123
E13	I find it difficult to practice PBA because the time for me is not enough to engage in that tedious assessment practice Deciding on appropriate PBA	.717	.096
E1	It is difficult to supervise projects of students	-.134	.682
E2	I find it difficult to ascertain the appropriate PBA for students	.133	.724
E5	Too much academic workload prevents me from giving practical work to students	.053	.608
E6	I find it difficult to give out hands-on PBA because the class I teach is very large which poses a challenge for supervision	.059	.523
E9	Because of lack/insufficient of knowledge I find it difficult to use PBA	.253	.457
E10	I find it difficult to assess problem-solving skills	-.025	.673

Source: Field data (2022)

Confirmatory Factor Analysis

A confirmatory factor analysis (CFA) was conducted using the final data. This included 426 participants. CFA is a statistical method for validating the factor structure of a set of observed data. The observed structure from the EFA was confirmed through the CFA for all variables.

Knowledge of PBA

The EFA revealed three components. For component 1 (B1, B2, B5, B6, B9, B10), the item with the highest loading was B5, working with other students to accomplish tasks (.758). For component 2 (B3, B4, B7), the item with the highest loading was allowing students to demonstrate mastered specific skills and competencies by performance (.845). Finally, for component 3 (B8, B11, B12, B13), the item with the highest loading was delving into students' higher-

order thinking skills (.822). These were subjected to CFA. The results are presented in Table 9.

Table 9: Item Loading, Internal Consistency, and AVE for knowledge

Knowledge item	Loading	Alpha	CR	AVE
Factor 1: Teamwork		0.622	0.751	0.339
B1	0.565			
B2	0.520			
B5	0.729			
B6	0.610			
B9	0.557			
B10	0.482			
Factor 2: Demonstrating mastery		0.539	0.763	0.517
B3	0.694			
B4	0.707			
B7	0.756			
Factor 3: Higher-order thinking		0.413	0.634	0.324
B8	0.840			
B11	0.496			
B12	0.425			
B13	0.404			

CR – Composite Reliability; AVE – Average Variance Extracted

As shown in Table 9, the factor loadings for all items ranged from 0.404 to 0.840. Items with factor loadings which is lower than the 0.32 recommended by Tabachnick and Fidell (2013) are to be discarded. The implication is that, these items could not account for 32% of the variances in the particular

construct. However, an inspection of the loadings revealed that no item had loading less than 0.32. Therefore, no item was discarded. The internal consistency for the constructs should be 0.7 or above as suggested by Pallant, (2010). Pallant, however, noted that coefficients of 0.50 are appropriate when scale has less than 10 items. Therefore, the internal consistencies are for all constructs are deemed appropriate except for higher-order thinking which was 0.413. Finally, the AVEs for all the scales were less than 0.50 except for demonstrating mastery (Fornell & Larcker, 1981; Hair, Ringle, & Sarstedt, 2011). An indication of partial convergent validity was drawn from these results. Table 10 presents the discriminant validity.

Table 10*:* Heterotrait-Monotrait Ratio of Correlations (HTMT) for Knowledge Discriminant Validity

S/N	Construct	1	2	3
1	Demonstrating mastery			
2	Higher order thinking	0.563		
3	Team work	0.762	0.588	

Source: Field data (2022)

There was not a single number in Table 9 that was more than .90 (Gold, Malhotra, & Segars, 2001). Therefore, high levels of discriminant validity may be inferred as a result. However, since the data could not meet the convergent validity, the scale was considered as a unidimensional scale. The measurement model is shown in Figure 2.

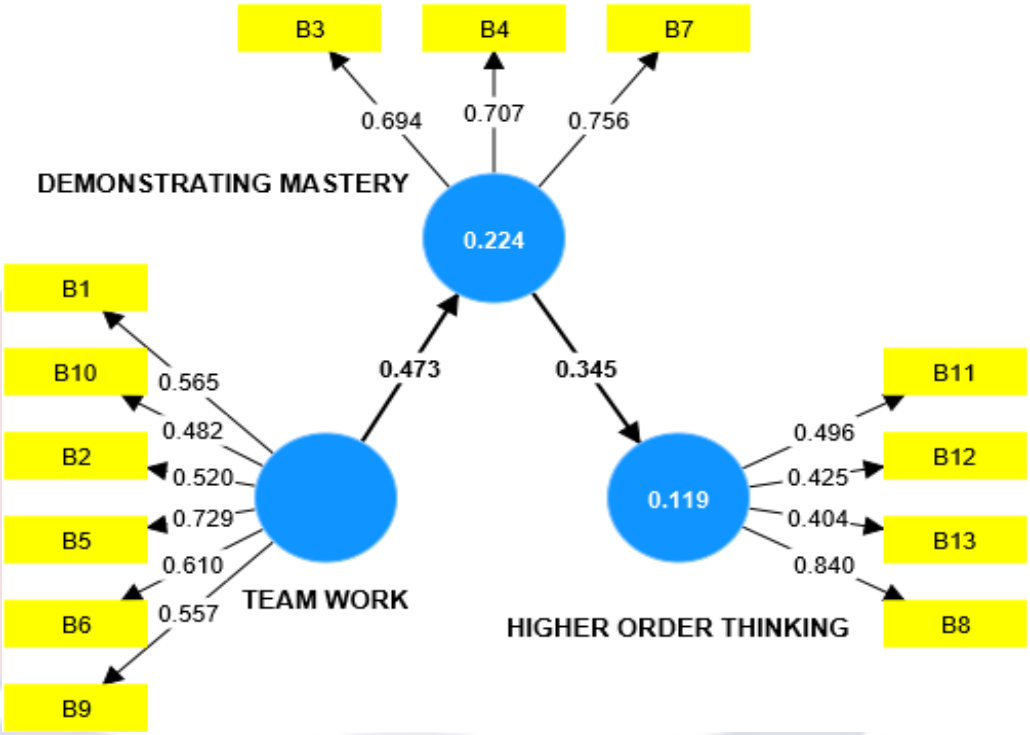

Figure 2: CFA for knowledge of PBA

Beliefs of PBA

For component 1 (C2, C8, C9, C10, C14, C15), the item with the highest loading was C9, rule out subjectivity in assessment (.761). For component 2 (C5, C6, C7, C11, C12) the item with the highest loading was C5, providing feedback to students about their performance (.668). For component 3 (C16, C17, C18), the item with the highest loading was C17, holding teachers responsible for inaccurate assessments (lack of standardization, poor prompts, etc.) (.790). Finally, for component 4 (C1, C3, C4, C13), the item with the highest loading was C4, PBA determines if students meet course standards (.636).

Table 11: Item Loading, Internal Consistency, and AVE for Beliefs

	Loading	Alpha	CR	AVE
Rule out subjectivity in assessment		0.656	0.760	0.354
C2	0.562			
C8	0.722			
C9	0.640			
C10	0.685			
C14	0.505			
C15	0.392			
Providing feedback		0.568	0.736	0.359
C5	0.575			
C6	0.557			
C7	0.577			
C11	0.669			
C12	0.613			
Holding teachers responsible		0.662	0.813	0.593
C16	0.684			
C17	0.786			
C18	0.834			
Meeting course standards		0.467	0.710	0.384
C1	0.549			
C3	0.714			
C4	0.668			
C13	0.527			

Source: Field data (2022)

As shown in Table 11, the factor loadings for all items ranged from 0.505 to 0.834. Items with factor loadings which is lower than the 0.32 recommended by Tabachnick and Fidell (2013) are to be discarded. The implication is that, these items could not account for 32% of the variances in the particular construct. However, an inspection of the loadings revealed that no item had loading less than 0.32. Therefore, no item was discarded. The internal

consistency for the constructs should be 0.7 or above as suggested by Pallant, (2010). Pallant, however, noted that coefficients of 0.50 are appropriate when scale has less than 10 items. Therefore, the internal consistencies are for all constructs are deemed appropriate. Finally, the AVEs for all the scales were less than 0.50 except for holding teachers responsible (Fornell & Larcker, 1981; Hair, Ringle, & Sarstedt, 2011). Based on this, it was concluded that limited evidence of convergent validity was established. Table 12 presents the discriminant validity.

Table 12: Heterotrait-Monotrait Ratio of Correlations (HTMT) for Beliefs Discriminant Validity

S/N	Construct	1	2	3	4
1	Determine if students meet course standards				
2	Hold teachers responsible	0.363			
3	Provide feedback to students	0.969	0.358		
4	Rule out subjectivity	0.795	0.547	0.712	

Source: Field data (2022)

Taking into consideration Table 12, every value was lower than .90 excluding the last but one line, which says provide feedback to students (Gold, Malhotra, & Segars, 2001). Therefore, one might get the conclusion that there was some success in establishing the discriminant validity of the test. Limited evidence of discriminant validity was found. Since the data could not meet the convergent and discriminant validity, the scale was considered as a unidimensional scale. Figure 2 shows the final measurement model.

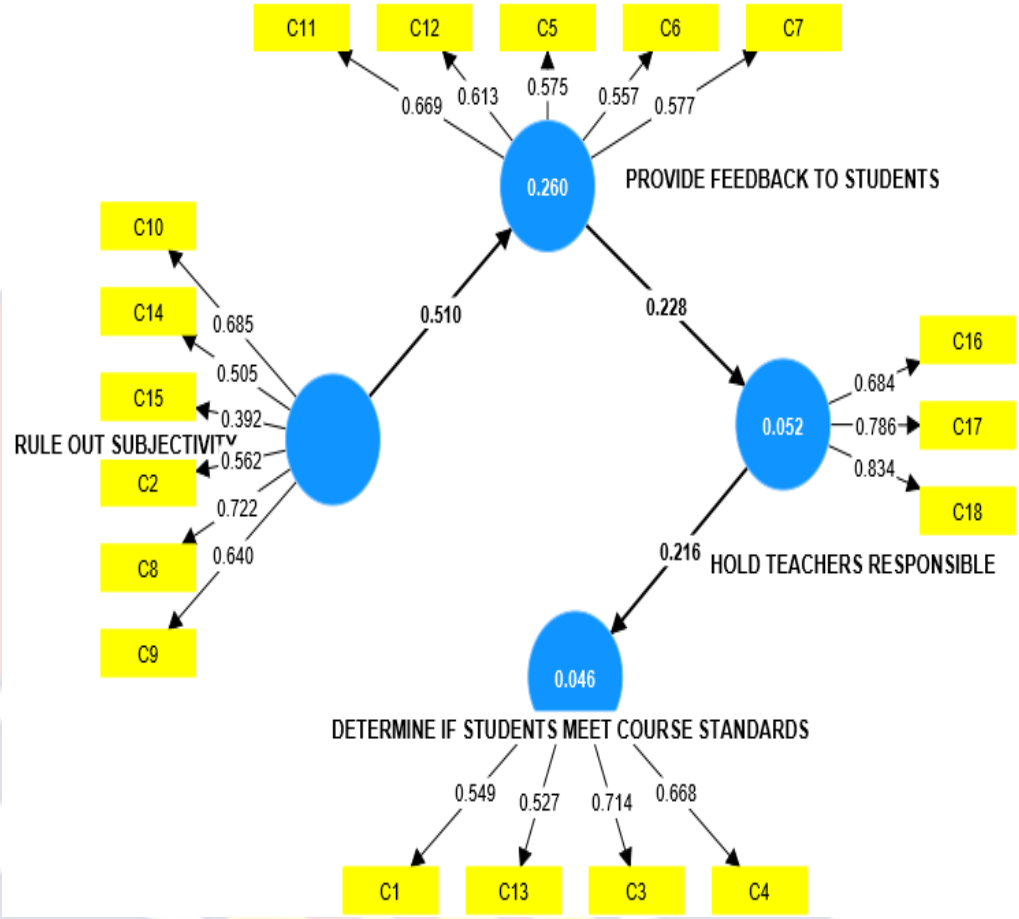

Figure 3: CFA for Beliefs

PBA Practices

EFA revealed two components. For component 1 (D1, D2, D5, D6, D9, D10, D13, D14, D15, D16), the item with the highest loading was "D15, I assist students to demonstrate and extend their understanding about stimulus meaning" (.666). For component 2 (D11, D12, D3, D4, D7, D8), the item with the highest loading was "D3, I ask students to create and organise ideas with a purpose" (.653).

Table 13: Item Loading, Internal Consistency, and AVE for Beliefs

	Loading	Alpha	CR	AVE
Demonstrating understanding		0.611	0.736	0.221
D1	0.503			
D2	0.546			
D5	0.478			
D6	0.439			
D9	0.597			
D10	0.468			
D13	0.358			
D14	0.464			
D15	0.423			
D16	0.378			
Create and organise ideas with a purpose		0.622	0.752	0.341
D3	0.636			
D4	0.614			
D7	0.383			
D8	0.634			
D11	0.563			
D12	0.629			

Source: Field data (2022)

As shown in Table 13, the factor loadings for all items ranged from 0.358 to 0.636. Items with factor loadings which is lower than the 0.32 recommended by Tabachnick and Fidell (2013) are to be discarded. The implication is that, these items could not account for 32% of the variances in the particular construct. However, an inspection of the loadings revealed that no item had loading less than 0.32. Therefore, no item was discarded. The internal consistency for the constructs should be 0.7 or above as suggested by Pallant, (2010). Pallant, however, noted that coefficients of 0.50 are appropriate when scale has less than 10 items. Therefore, the internal consistencies are for all

constructs are deemed appropriate. Finally, the AVEs for all the scales were less than 0.50 (Fornell & Larcker, 1981; Hair, Ringle, & Sarstedt, 2011). It was determined that this evidence did not prove convergent validity. Table 14 presents the discriminant validity.

Table 14: Heterotrait-Monotrait Ratio of Correlations (HTMT) for practices Discriminant Validity

S/N	Construct	1	2
1	Create and organise ideas with a purpose		
2	Demonstrating understanding	0.809	

Source: Field data (2022)

It is consequently possible to draw the conclusion that discriminant validity has been demonstrated based on Table 14 (Gold, Malhotra, & Segars, 2001) since the value was less than .90. Since the data could not meet the convergent validity, the scale was considered as a unidimensional scale. The measurement model can be seen in Figure 4.

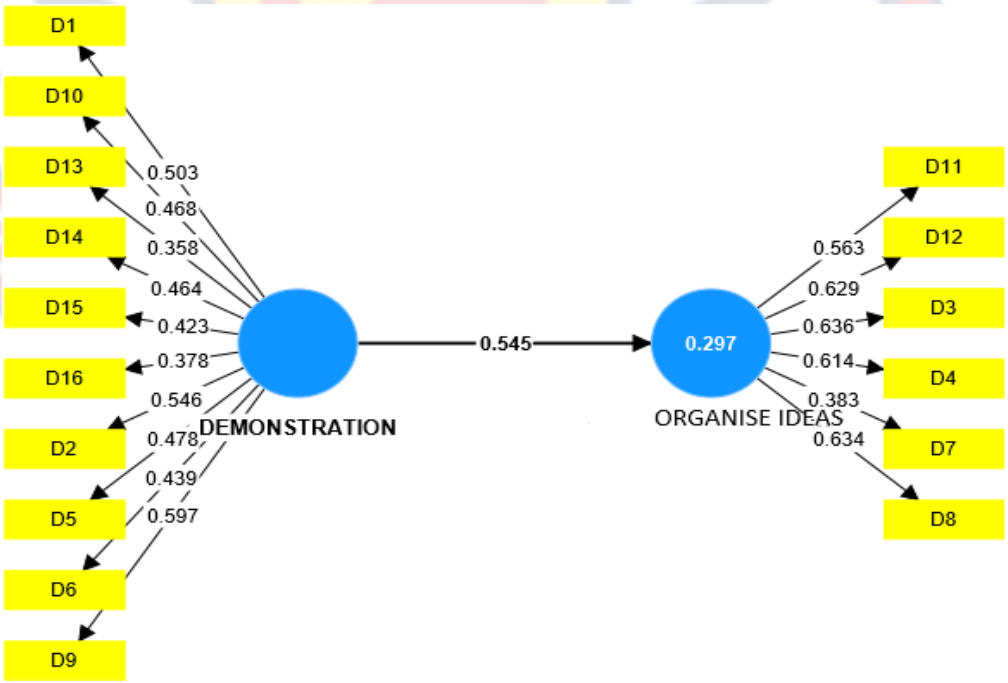

Figure 4: CFA for practices

Challenges PBA

For component 1 (E3, E4, E7, E8, E11, E12, E13), the item with the highest loading was "I find it difficult to practice PBA due to lack of resources" (.775). For component 2 (E1, E2, E5, E6, E9, E10), the item with the highest loading was "E2, I find it difficult to ascertain the appropriate PBA for students" (.724).

Table 15: Item Loading, Internal Consistency, and AVE for Challenges

	Loading	Alpha	CR	AVE
Lack of resources		0.676	0.779	0.344
E3	0.703			
E4	0.370			
E7	0.558			
E8	0.491			
E11	0.656			
E12	0.715			
E13	0.533			
Deciding on appropriate PBA		0.659	0.771	0.344
E1	0.598			
E2	0.766			
E5	0.418			
E6	0.334			
E9	0.677			
E10	0.754			

Source: Field data (2022)

As shown in Table 15, the factor loadings for all items ranged from 0.334 to 0.766. Items with factor loadings lower than the 0.32 recommended by Tabachnick and Fidell (2013) are to be discarded. The implication is that, these items could not account for 32% of the variances in the particular construct. However, an inspection of the loadings revealed that no item had loading less than 0.32. Therefore, no item was discarded. The internal consistency for the constructs should be 0.7 or above as suggested by Pallant, (2010). Pallant, however, noted that coefficients of 0.50 are appropriate when scale has less than 10 items. Therefore, the internal consistencies are for all constructs are deemed appropriate. Finally, the AVEs for all the scales were less than 0.50 (Fornell & Larcker, 1981; Hair, Ringle, & Sarstedt, 2011). It was determined that this evidence did not prove convergent validity. Table 16 presents the discriminant validity.

Table 16*:* Heterotrait-Monotrait Ratio of Correlations (HTMT) for challenges discriminant validity

S/N	Construct	1	2
1	Deciding on appropriate PBA		
2	Lack of resources	0.973	

Source: Field data (2022)

It is possible to draw the conclusion that discriminant validity was not proved after looking at Table 16 since the value was greater than 0.90. Since the data could not meet the convergent and discriminant validity, the scale was considered as a unidimensional scale. The measurement model can be seen in Figure 5.

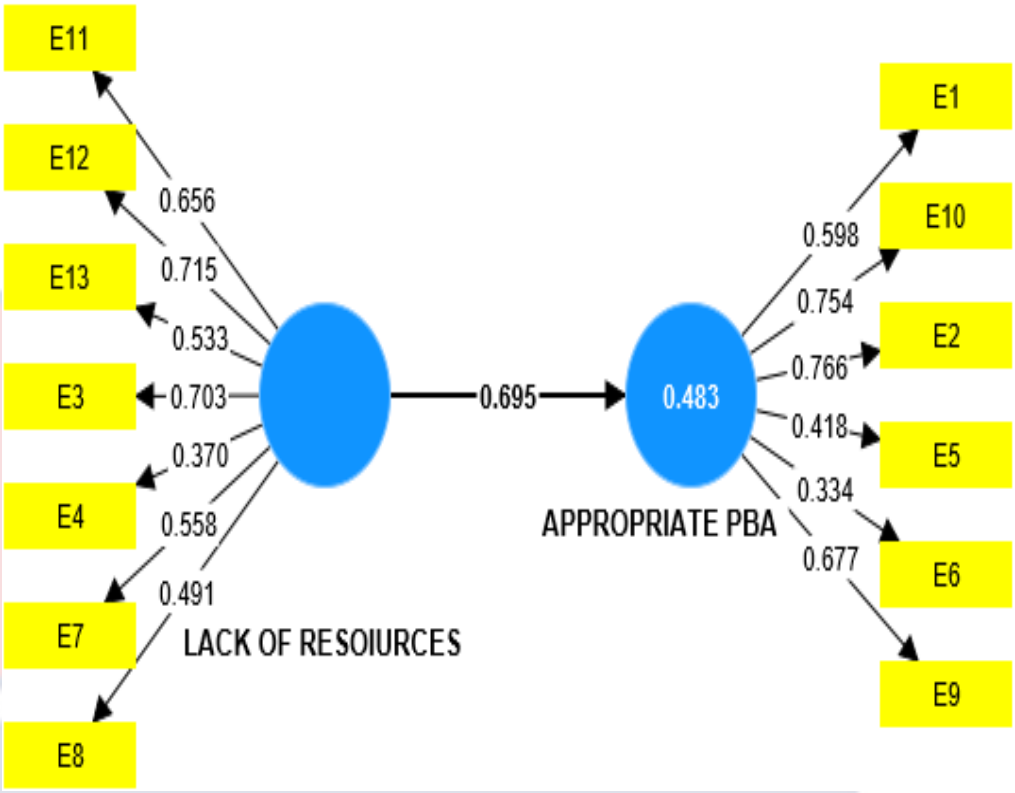

Figure 5: CFA challenges

Data Collection Procedure

Ethical clearance was obtained from the Institutional Review Board, U.C.C. The researcher applied for an introductory letter from the Department of Education and Psychology, U.C.C. All schools were visited personally to deliver the introduction letter. Upon meeting the heads of each school, an appropriate date was set for data collection to begin. The researcher visited the schools on the set date. The researcher briefly explained the purpose of the research and the importance of the research to the participants. Confidentiality was assured. Furthermore, the researcher provided clarity on ethical, confidentiality and anonymity issues to the respondents. The researcher personally delivered the questionnaires and explained ambiguous items to respondents. The researcher used approximately 6 weeks to collect data from

participants. A total of 460 questionnaires were administered. However, 426 were deemed valid for the study. This gave a return rate of 92.6%.

Data Processing and Analysis

Numerical analysis may be performed with the use of programmes like SPSS (the Statistical Package for the Social Sciences), Minitab, or Excel. A computer programme may compute and conduct statistical calculations automatically. Data from the survey were entered into SPSS version 24 for analysis and classification. Checks were performed on the data to exclude the possibility of human errors caused by missing values or unfinished surveys. According to Amedahe (2008), the goal of data editing is to identify mistakes comprehensively and decrease errors in the obtained data to a minimal level. He went on to say that editing comprises making any necessary corrections to the data and deciding which parts of the obtained data should be discarded and which maintained for further future research. Following cleansing and editing, the demographic data were analysed using frequencies and percentages.

Research question one, and two were analysed using means and standard deviations and frequencies and percentages. Research question three was analysed using means and standard deviations.

Individual tests of Hypotheses 1 and 3 were conducted using SEM path analysis and 5000 bootstrap samples. Individual testing of Hypothesis 2 utilising the Hayes Process and 5000 bootstrap samples was conducted. Confidence intervals were used to interpret the bootstrap results. For a particular result to be considered significant, the bootstrap upper and lower confidence intervals must not contain the value '0'; therefore, the upper and lower confidence intervals must have the same sign (+ + or - -). This indicates that the

confidence interval does not contain 0, so the regression coefficient cannot be 0 (Tan & Tan, 2010).

Summary

The study employed a descriptive research design and collected data from 426 teachers within second cycle institutions. The data analysis involved using measures like means, standard deviations, frequencies, and percentages to provide insights into the sample characteristics. Notably, the investigation employed regression analysis to delve into the impact of Performance-Based Assessment (PBA) knowledge on the actual application of PBA practices. In addition, moderation analysis was conducted to assess if the connection between two variables differed based on factors like teachers' experience or school type. The study also utilized mediation analysis to uncover the role of beliefs in connecting PBA knowledge to its practical implementation. The significance threshold for the study was set at $p = 0.05$ (two-tailed), signifying that outcomes were deemed statistically significant if the likelihood of their occurrence by random chance was less than 5%.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

The study assessed PBA practices of teachers in second-cycle institutions in the Cape Coast Metropolis. This chapter presents the outcomes of analyses conducted on field data. The findings are then discussed alongside the reviewed literature.

Section A: Demographic Characteristics of Respondents

The demographic breakdown of the respondents is presented here. The demographic information include gender, school type, and years of teaching experience.

Gender distribution of respondents

This study's respondents were broken down by gender and their responses are presented in Table 17.

Table 17: Gender distribution of respondents

Gender	Frequency	Percentage (%)
Male	298	70.0
Female	128	30.0
Total	426	100.0

Field data (2022)

Table 17 shows that males made up 70% of the responders, or slightly more than two-thirds of the total sample.

School type

The distribution of respondents according to the school type in the study is shown in Table 18 below.

Table 18: Distribution of respondents by school type

School Type	Frequency	Percentage (%)
Senior High School	259	60.8
Senior High Technical/Technical	129	30.3
Technical	38	8.9
Total	426	100.0

Field data (2022)

The data in Table 18 revealed that there were more teachers in the Senior High Schools (60.8%) than in Senior High Technical and Technical schools.

Teaching experience

Respondents indicated the number of years they had taught for. Table 19 presents the results.

Table 19: Teaching experience of respondents

Years	Frequency	Percentage (%)
0-5	179	42.0
6-10	136	31.9
11-15	60	14.1
16 and above	51	12.0
Total	426	100.0

Field data (2022)

From the responses, 42% had taught for 5 years or less. Whiles a few (12%) had taught for 16 years and above. It can be inferred that the majority of

respondents are experienced and competent instructors, which is consistent with the claims of Varrella (2000) and Unal and Unal, (2012) that it takes between four and seven years of experience for an individual to develop into a qualified teacher.

Section B: Analysis of Data on Research Questions

This section contains the findings from the study's examination of data pertaining to the three research questions that served as the study's overarching framework.

Research Question One

What knowledge do teachers in second-cycle institutions in the Cape Coast Metropolis have on performance-based assessment practices?

Research question one aimed at assessing respondents' knowledge of PBA. Thirteen items were used to solicit data on this research question. These were on a scale of 1-4, with 1 representing strongly disagree, 2 for disagree, 3 for agree and 4 for strongly agree. All 13 items were positively worded. Therefore, higher scores indicate higher knowledge, and lower scores indicate lower knowledge. Data were analysed using means and standard deviations. A criterion mean of 2.5 from a 4-point Likert scale was set (1+2+3+4/4=2.5). A mean score above 2.5 indicates agreement and, therefore, higher knowledge, while a mean score below 2.5 indicates disagreement and, therefore, a lower level of knowledge. This is presented in Table 20.

Table 20: Knowledge of performance-based assessment

	Statements	M	SD
	PBA is about		
1.	hands-on practical work in the classroom	3.01	.592
2.	students' performance based on the execution of projects	3.13	.593
3.	allowing students to demonstrate mastered specific skills and competencies through performance	3.12	.611
4.	designing, carrying out experiments and writing essays which require students to rethink, integrate, or apply information	3.10	.687
5.	working with other students to accomplish tasks	3.09	.686
6.	demonstrating proficiency in using a piece of equipment or a technique	3.08	.710
7.	developing, interpreting, and using diagrams	3.03	.668
8.	stimulus materials are presented to an individual to generate a response that can be rated for quality using explicit standards	3.06	.650
9.	assessments that require immediate answers that allow students to demonstrate practically what has been learnt	3.05	.658
10.	assessment that requires that students actively develop their approaches to the task under defined conditions, knowing that their work will be evaluated according to agreed-upon standards	3.07	.694
11.	tangible and reliable tasks that demand students to perform an activity with their knowledge and skills on what they have been taught	3.14	.648
12.	delving into students' higher-order thinking skills (such as evaluating the reliability of sources of information, synthesising information to draw conclusions, or using deductive/inductive reasoning to solve a problem)	3.11	.645
13.	PBA expect students to produce a material or exhibit a performance in writing or self-expression skills	3.12	.629
	Mean of means	3.09	.652

Source: Field data (2022)

Considering the mean of means, the study revealed that teachers had high knowledge about PBA. Comparing the means of all items to a criterion mean of 2.5, it was noted that no item had a mean below 2.5. This implies that teachers agreed to all 13 items measuring knowledge of PBA. From the table, the item with the highest mean score was "tangible and reliable tasks that demand students to perform an activity with their knowledge and skills on what they have been taught" (M=3.14, SD=.648). This was followed by the item "students' performance based on the execution of projects" (M=3.13, SD=.593). The study also revealed respondents agreed that "PBA expect students to produce a material or exhibit a performance in writing or self-expression skills" (M=3.12, SD=.629). Also, respondents affirmed that PBA involved allowing students to demonstrate mastered specific skills and competencies through performance (M=3.12, SD=.611) and delving into students' higher-order thinking skills (M=3.11, SD=.645). These were the top five items with high means.

Respondents' knowledge levels were determined by computing their raw scores from a 13-item scale using a 4-point Likert scale. Scores ranged between 13 and 52, encompassing the entire scale range. A score of 41.6 to 52, representing 80% or more of the total, indicated a high level of knowledge. Scores falling between 26 and 41.5, corresponding to 50% to 79.9% of the total, denoted a moderate level of knowledge. Meanwhile, scores of 25.9 or below were categorized as low knowledge levels, indicating less than 50% comprehension of the scale items.

Table 21: Knowledge level on PBA

Knowledge level	Score (out of 52)	Frequency	Percentage (%)
Low	13-25.9	0	0
Moderate	26-41.5	264	62
High	41.6-52	162	38
Total		426	100

Source: Field data (2022)

` From Table 21, majority 62% of the respondents had moderate level of knowledge. These respondents scored between 26 and 41.5 out of 52. This confirms that participants had good knowledge of PBA. This can be attributed to the fact that majority of the respondents had taught for more than 6 years and were experienced teachers.

Research Question Two

What are the performance-based assessment practices of teachers in second cycle institutions in the Cape Coast Metropolis?

Research question two aimed at assessing respondents' PBA practices. Sixteen items were used to solicit data on this research question. These were on a scale of 1-4, with 1= Never (N), 2 = Rarely (R), 3 = Often (O), and 4 = Always (A). All 16 items were positively worded. Therefore, higher scores indicate teachers practice it often, and lower scores indicate teachers do no practice it often. Data were analysed using means and standard deviations. A criterion mean of 2.5 from a 4-point Likert scale was set (1+2+3+4/4=2.5) was set. A mean score above 2.5 indicates teachers practice it often and while a mean score below 2.5 indicates teachers do not practice it often. This is presented in Table 22.

Table 22*:* Performance-based assessment practices

	Descriptive Statistics	M	SD
1.	I guide students to effectively translate issues and situations into meaningful tasks that have a clear purpose	3.11	.658
2.	I ask students to write simple sentences expressing a complete thought	3.13	.698
3.	I ask students to create and organise ideas with a purpose	3.12	.654
4.	I ask students to use symbols and words to show meaning	3.04	.738
5.	I assist students in collaborating to create editorials, reports, recipes	2.92	.786
6.	I assist students in preparing criteria for assessing their own project	2.95	.803
7.	I guide students to apply their knowledge to real life problems	3.11	.714
8.	I ask students to demonstrate their ability to organize ideas effectively	3.07	.684
9.	I guide students to use hands-on tasks to conduct several investigations	3.13	.640
10.	I ask students to provide explanations for their responses	3.26	.670
11.	I assist students in adding supportive details to stories	3.11	.706
12.	I ask students to cooperate with peers and school personnel on projects	3.22	.677
13.	I ask students to reflect on their learning process to take control of their learning	3.21	.654
14.	I assist students in communicating meaning through pictures	2.97	.725
15.	I assist students in demonstrating and extending their understanding of stimulus meaning	3.09	.706
16.	I make informal observations about how students respond to instruction	3.21	.706
	Mean of means	3.10	.70

Source: Field data (2022)

The study found that respondents frequently practised all items on the questionnaire considering the mean of means (M=3.10, SD= .70). It was noted that no item had a mean below 2.5. Respondents frequently ask students to explain their responses (M=3.26, SD=.670). This had the highest mean score. Respondents also ask students to cooperate with peers and school personnel on projects (M=3.22, SD=.677), ask students to reflect on their learning process to take control of their learning (M=3.21, SD=.65416), and they also make informal observations about how students are responding to instruction (M=3.21, SD=.706). Teachers also guide students to apply their knowledge to real-life problems (M=3.11, SD=.714)

Respondents' practices of Performance-Based Assessment (PBA) were evaluated by calculating their raw scores based on a 16-item scale using a 4-point Likert scale. The scores spanned from 16 to 64, encompassing the full range of the scale. A score falling between 51.2 and 64, representing 80% or more of the total, indicated a classification of "always practicing" PBA. Scores ranging from 32 to 51.1 out of 64, corresponding to 50% to 79.9% of the total, were categorized as "often practicing" PBA. Conversely, scores of 25.9 or below were labelled as "rarely practicing" PBA, signifying less than 50% engagement with PBA activities.

Table 23: Frequency of PBA practice

Frequency of PBA practice	Score (out of 64)	Frequency	Percentage (%)
Rarely	16-31.9	0	
Often	32-51.1	267	62.7
Always	51.2-64	159	37.3
Total		426	100

Source: Field data (2022)

` From Table 23, majority (62.7%) of the respondents often engage in PBA. These respondents scored between 32 and 51.1 out of 64. This confirms that participants often practiced PBA. This can be attributed to the fact that majority of the respondents had taught for more than 6 years and were competent teachers.

Research Question Three

What challenges affect the use of performance-based assessment among teachers in second cycle institutions in the Cape Coast Metropolis?

Research question three aimed at assessing challenges affect the use of PBA. Thirteen items were used to solicit data on this research question. These were on a scale of 1-4, with 1 representing strongly disagree, 2 for disagree, 3 for agree and 4 for strongly agree. All 13 items were negatively worded. Therefore, higher scores indicate the statement is a challenge and lower scores indicate the statement is not a challenge. Data were analysed using means and standard deviations. A criterion mean of 2.5 from a 4-point Likert scale was set (1+2+3+4/4=2.5). A mean score above 2.5 indicates the statement is a challenge while a mean score below 2.5 indicates the statement is not a challenge. This is presented in Table 24.

Table 24: Challenges in PBA

	Statement	M	SD
1.	It is difficult to supervise projects of students	2.62	.729
2.	I find it difficult to ascertain the appropriate PBA for students	2.65	.771
3.	It is difficult for me to score projects of students	2.53	.820
4.	I find it difficult to give PBA because practical materials are lacking	2.85	.779
5.	Too much academic workload prevents me from giving practical work to students	2.79	.825
6.	I find it difficult to give out hands-on PBA because the class I teach is very large which poses a challenge for supervision	2.97	.838
7.	Due to the lack of attention from policymakers I find it difficult to practice PBA	2.69	.748
8.	I find it difficult to practice PBA due to lack of resources in developing the assessment process	2.83	.786
9.	Because of lack/insufficient of knowledge I find it difficult to use PBA	2.62	.821
10.	I find it difficult to assess problem-solving skills	2.58	.791
11.	I find it difficult to use PBA because of insufficient knowledge about how scoring rubric on performance can be prepared and cannot find rubric related to task topics	2.65	.812
12.	I find it difficult practicing PBA because I become indecisive in terms of the subject and areas to concentrate on	2.61	.842
13.	I find it difficult to practice PBA because the time for me is not enough to engage in that tedious assessment practice	2.91	.737

Source: Field data (2022)

Respondents agreed to 12 out of 13 items on their challenges in PBA. Respondents neither agreed nor disagreed to one item. Respondents neither agreed nor disagreed on whether it was difficult for them to score projects of students (M=2.53, SD=.820). Respondents' challenges were grouped under

three headings, structural challenges, school-related challenges and teacher-related challenges.

Structural challenges

These are challenges inherent in the design or organization of a system, institution, or society such as the Ghana Education Service. Respondents revealed that due to the lack of attention from policymakers, they find it difficult to practice PBA (M=2.69, SD=.748). Also, the participants revealed that they find it difficult to give PBA because practical materials are lacking (M=2.85, SD=.779). Furthermore, participants encountered challenges in implementing Performance-Based Assessment (PBA) due to insufficient resources for crafting the assessment process (M = 2.83, SD = 0.786). Additionally, an excessive academic workload hindered their ability to assign practical assignments to students (Mean = 2.79, Standard Deviation = 0.825).

School-related challenges

Regarding challenges within the school context, participants indicated struggles in implementing hands-on Performance-Based Assessment (PBA) due to the significant size of their classes, posing difficulties in supervision (M = 2.97, SD = 0.838). Respondents also expressed challenges in practicing PBA, as they perceived insufficient time for engaging in the intricate assessment process (M = 2.91, SD = 0.737).

Teacher-related challenges

These are challenges related to the teacher. For instance, the participants revealed that it is difficult to supervise projects of students (M=2.62, SD=.729) and they find it difficult to ascertain the appropriate PBA for students (M=2.65, SD=.771). Furthermore, because of lack/insufficient of knowledge, respondents

find it difficult to use PBA (M=2.62, SD=.821). Furthermore, participants expressed challenges in evaluating problem-solving abilities (M = 2.58, SD = 0.791). Additionally, they encountered difficulties in utilizing Performance-Based Assessment (PBA) due to a lack of adequate understanding regarding the creation of scoring rubrics for performance assessment and the unavailability of rubrics aligned with task topics (M = 2.65, SD = 0.812). Lastly, respondents found it challenging to implement PBA because they experienced uncertainty when deciding which subjects and areas to prioritize (M = 2.61, SD = 0.842).

Section C: Hypotheses Testing

In total, three hypotheses were investigated. The most basic of all parametric assumptions, normality, was verified before these hypotheses were examined. Statistics including the mean, median, 5% trimmed mean, skewness, and the normal Q-Q plot were used to verify the results. The mean, median, and 5% trimmed mean of teachers' PBA knowledge, beliefs, practices, and challenges were approximately equal. This implies that the scores of the aforementioned variables were normally distributed. Further examination of the coefficients of Zskewness revealed that they were within the ranges +3.29 and -3.29, as suggested by Tabachnick and Fidell, (2007). Hence they are normally distributed. Each variable's normal Q-Q plot was also analysed. Q-Q plots for each variable showed that the distribution of scores was most similar to a straight line (see Appendix B). Tests underwent a bootstrap procedure to further increase their accuracy. Any irregularity in the distribution of grades would be eliminated by this method.

Hypothesis one

H_0: *There is no statistically significant influence of knowledge of PBA assessment on PBA practices.*

H_1: *There is a statistically significant influence of knowledge of PBA assessment on PBA practices.*

This hypothesis sought to determine whether or not teachers' knowledge in PBA would predict their PBA practices. The independent variable (knowledge of PBA) was measured on scale. The dependent variable (PBA practices) was also measured on a scale. The hypothesis was tested using SEM path analysis with 5000 bootstrap samples. The test was made possible through SMART PLS. Confidence intervals were used to interpret of the bootstrap results. Both the bootstrap's upper and lower confidence intervals must not contain '0' for a result to be considered statistically significant. Consequently, the sign of the upper and lower confidence intervals should be the same (+ + or - -). For this reason, we can rule out a value of 0 for the regression coefficient, as its associated confidence interval does not contain that value (Tan & Tan, 2010). Figure 6 presents the path model for influence of knowledge on PBA practices while Table 25 presents the regression coefficient for influence of knowledge on practices.

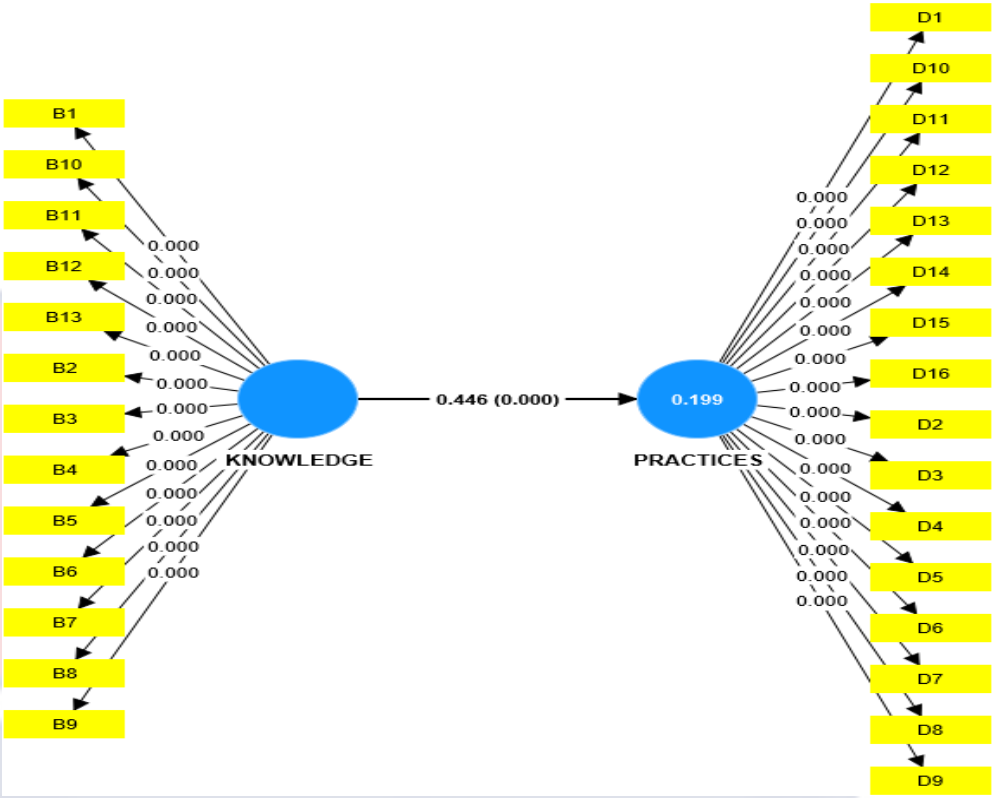

Figure 6: Path model for influence of knowledge on PBA practices

Table 25*:* Regression coefficient for influence of knowledge on practices

				95% confidence interval	
Model	B	T	P	Lower	Upper
Knowledge	0.446*	12.427	0.00	0.403	0.545

Source: Field data (2022) *Significant, $p < .05$; R= R^2= .199

From Table 25, knowledge of PBA was a significant and positive predictor of teachers' PBA practices accounting for 19.9% of the variance in PBA practices. Knowledge is a significant predictor of practices, B = 0.446, *Boot 95% CI* (0.403, 0.545). The results (B=0.446) indicate that a unit increase in teachers' knowledge would lead to a 0.446 increase in the PBA practices of teachers.

Based on the results, it can be said that higher knowledge of PBA leads to higher PBA practices. In this instance, teachers with higher PBA knowledge often practice PBA than teachers with lower knowledge in PBA. Based on this results, the null hypothesis "*There is no statistically significant influence of knowledge of PBA assessment on PBA practices*" is rejected in favour of the alternate hypothesis.

Hypothesis two

H_0: *Teaching experience and school type will not moderate the relationship between knowledge in performance-based assessment and practices.*

H_1: *Teaching experience and school type will moderate the relationship between knowledge in performance-based assessment and practices.*

This hypothesis sought to determine the moderating role of teaching experience and school type in the relationship between knowledge of PBA and practices of PBA. The predictor variable was knowledge measured on a continuous basis. The moderator variables were school type and teaching experience. Both the moderators were categorical in nature. Teaching experience in four categories while school type was in three categories. SEM path analysis in SMART PLS was used to test the hypothesis using 10,000 bootstrap samples. Since there are two moderator variables in this model, 10,000 bootstrap samples are used. Figure 7 presents the model whiles Table 26 presents the regression coefficients.

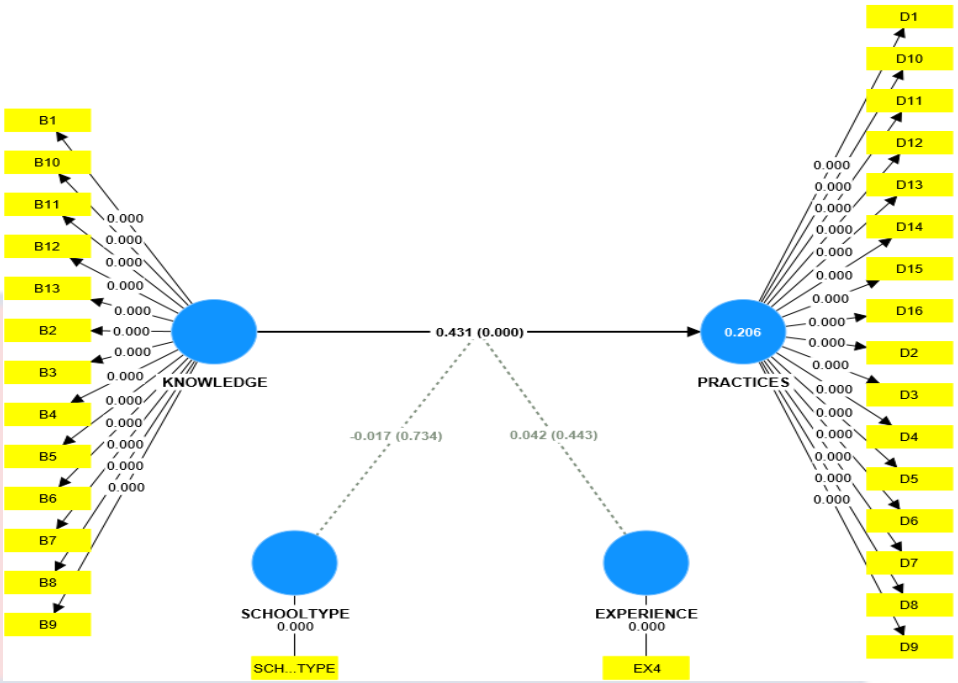

Figure 7: Path model of moderating role of school type and teaching experience

Table 26: Regression coefficient of moderating role of school type and teaching experience

				95% confidence interval	
Model	B	T	*p*	Lower	Upper
Experience → practice	-0.019	0.376	0.707	-0.116	0.079
Knowledge → practice	0.431*	10.490	0.00	0.375	0.537
School type → practice	-0.082	1.601	0.109	-0.182	0.019
School type X knowledge → practice	-0.017	0.339	0.734	-0.111	0.079
Experience X knowledge → practice	0.042	0.766	0.443	-0.065	0.148

Source: Field data (2022) *Significantt, $p < .05$, $R^2 = .199$ $R^2 = 0.206$

The results revealed that the model predicts 20.6% of the variance in PBA practices. However, teachers experience, B= -0.019, *Boot 95% CI* (-0.116, 0.079) and school type B= -0.082, *Boot 95% CI (*-0.182, 0.019), were not significant predictors of PBA practice. When teachers experience and school type are controlled, knowledge B= 0.431, *Boot 95% CI* (0.375, 0.537) was still a significant predictor of teachers PBA practices. Furthermore, school type B= -0.017, *Boot 95% CI* (-0.111, 0.079) and teaching experience B=0.042, *Boot 95% CI (*-0.065, 0.148) were not significant moderators of the relationship between teachers' knowledge of PBA and teachers' practices of PBA.

From the results, the school type that teachers belong to, whether senior high, senior high technical or technical school does not have an influence on their PBA practices. Furthermore, teaching experience does not also predict teachers PBA practices. From the results, knowledge of teachers was still a significant predictor of PBA practices even when teaching experience and school type are controlled. Also, school type and teaching experience do not moderate the relationship between teachers' knowledge and their PBA practices. Based on this results, the researcher failed to reject the null hypothesis *"Teaching experience and school type will not moderate the relationship between knowledge in performance-based assessment and practices"*

Hypothesis three

H_0: *Teachers' beliefs will not mediate the relationship between knowledge in performance-based assessment and practices.*

H_1: *Teachers' beliefs will mediate the relationship between knowledge in performance-based assessment and practices.*

This hypothesis sought to determine the mediating role of teachers' belief in the relationship between knowledge of PBA and practices of PBA. The predictor variable was knowledge measured on a continuous basis. The beliefs of teachers served as a continuing mediator. With SMART PLS's SEM path analysis and 5000 bootstrap samples, we were able to test the hypothesis. More specifically, 5000 samples of the model are used as bootstrap samples.

From Table 27, the model for the effect of knowledge on beliefs was statistically significant, f (1,424) = 184.95, $p < .01$, $R^2 = .30$. Knowledge was therefore a significant predictor of beliefs such that higher knowledge levels are associated with higher beliefs about PBA, B = .80, Boot 95% CI (.69, .92). Similarly, from model two, the model for the effect of knowledge and beliefs on PBA practices was statistically significant, f (2,423) = 46.19, $p < .01$, $R^2 = .18$. Knowledge was a significant predictor of PBA practices, B = .29, Boot 95% CI (.15, .42). Beliefs was also a significant predictor of PBA practices, B = .22, Boot 95% CI (.13, .31) such that teachers with high levels of PBA beliefs is associated with higher levels of PBA performance. Similarly, in table three, knowledge was a significant predictor of PBA practices, B = .46, Boot 95% CI (.35, .58). Table 28 presents the indirect effect (mediation).

Table 27*:* Regression Coefficients for knowledge, belief and PBA practices

Model	Variable	B	BSE	BLLCI	BULCI	Model Summary				
						R^2	*F*	*Df1*	*Df2*	*p*
One	Constant	22.68	2.38	18	27.36	*.30*	*184.95*	*1*	*424*	*.00*
	Knowledge	.80	.06	.69	.92					
Two	Constant	26.04	2.48	21.18	30.91	.18	46.19	2	423	.00
	Knowledge	.29	.07	.15	.42					
	Belief	.22	.05	.13	.31					
Three	Constant	31.06	2.30	26.53	35.59	.13	65.71	1	424	.00
	Knowledge	.46	.06	.35	.58					

Criterion Variable: Model 1- Belief; Model 2- Job performance; Model 3-Job performance *Significantt, p<.05

Table 28: Indirect Effect, Direct Effect, and Total Effect of PBA knowledge

				Confidence Intervals	
	Effect	BSE	*p*	Lower limit	Upper limit
Total effect of X on Y	.46	.06	.00	.35	.58
Direct effect of X on Y	.29	.07	.00	.15	.42
Indirect effect of X on Y	Effect	BSE	BootLLCI	BootULCI	
Belief	.14	.03	.10	.26	
Completely standardised indirect effect	C′cs	BSE	BootLLCI	BootULCI	
Belief	.14	.03	.08	.20	

Completely standardised effect (C'cs): Total effect = .37; Direct effect = .23

As presented in table 28, the direct effect of knowledge on PBA practices was statistically significant, B=.29, Boot95% CI (.15, .42). This implies that teachers with higher levels of knowledge frequently engage in PBA practice. In addition, the effect of knowledge on PBA practices was statistically significant when Beliefs was introduced as a mediator variable in the relationship, as shown in the indirect effect B= .14, Boot95% CI (.10, .26). Comparatively, the completely standardised direct effect (C′cs= .23) was significant and showed a positive effect of knowledge on PBA practices. Similarly, upon the introduction of the mediator variable (Beliefs), the completely standardised indirect effect was also positive (C′cs= .14).

The mediation showed that teachers' beliefs mediate the relationship between their knowledge and their practices. This implies that teachers with higher beliefs are more likely to practice PBA than those with lower beliefs. This demonstrates a complementary mediation, both the direct and indirect effects are significant and point in the same direction. Based on these results, the null hypothesis, "*Teachers' beliefs will not mediate the relationship between knowledge in performance-based assessment and practices*", is rejected in favour of the alternate hypothesis.

Discussion of Findings

The findings of the investigation are discussed here. The following categories served as the basis for the discussion:

Teachers' knowledge of PBA practices

The study revealed that teachers had moderate level of knowledge in PBA. More than half of teachers had moderate level of knowledge, scoring 26-41.5 out of 52. Furthermore, teachers knew that PBA involved tangible and reliable tasks that demand students to perform an activity with their knowledge and skills on what they have been taught. Also, teachers were aware that in using PBA, students' performance is based on the execution of projects, PBA expect students to produce a material or exhibit a performance in writing or self-expression skills. Also, respondents affirmed that PBA involved allowing students to demonstrate mastered specific skills and competencies through performance and delving into students' higher-order thinking skills. From teachers' responses, it could be noticed that majority understood that in using PBA, it is often necessary for students to be given hands-on tasks to perform. This means that teachers know that PBA requires students to perform an activity

using the skills and knowledge they have acquired in their classrooms. Thus, teachers understood that in using PBA, learners are not just passive recipients of information. However, they are given the opportunity to practice what they have learnt.

Also, teachers recognise that PBA allows them to assess students' higher-order thinking skills. This includes allowing students to evaluate the reliability of sources of information, synthesising information to draw conclusions, or using deductive/inductive reasoning to solve a problem. In this instance, students are allowed to design, carry out experiments and write essays which require students to rethink, integrate, or apply information to real-world issues rather than writing on theoretical and far-removed situations from their social context. Teachers understood that students also work with other students to accomplish tasks and demonstrate proficiency in using a piece of equipment or a technique. This is in line with Vygotsky's (1978) social constructivism theory which posits that learning is made significant by teaching students using real-world instances, stimuli that are found within their environment. Vygotsky believed that the development process continues throughout life and is based on social interaction. He also felt that social learning contributed to cognitive abilities development. To put it another way, students can complete any learning task, regardless of how challenging it may be, with the assistance of a teacher or with the assistance of their peers working together.

The current study's findings differ from Sundeme's (2019) and Abualrob and Al-Saadi's (2019) findings. The findings of these studies revealed that teachers had low knowledge concerning PBA. Abualrob and Al-Saadi's (2019) found that majority of teachers' were unclear about the differences

between traditional forms of assessment and PBA. The current study differs from these studies in several ways. First of all, the current study used an adapted questionnaire from Sundeme's study on PBA knowledge; however, Sundeme's study focused on JHS teachers, while the current study focused on teachers in second-cycle institutions. In the Ghanaian education system, JHS teachers require a minimum of a three-year diploma certificate to teach in these schools. In contrast, SHSs require a minimum of four years of an undergraduate degree to teach. The discrepancies in the results of the current study and that of Sundeme could be attributed to the training that the teachers in both studies received. Furthermore, the discrepancy could be attributed to JHS being more generalised, with pupils learning the same subject matter, whereas senior high is more specialised. SHS students are given more work and projects to prepare them for college life. As such, it is not surprising that second-cycle teachers had higher PBA knowledge. Also, Abualrob and Al-Saadi's (2019) study focused only on Science teachers using a small sample size (109). Thus, although their findings present in-depth information because it was conducted using interviews, the study is limited in generalisability due to the sample used.

Performance-based assessment practices of teachers

The study revealed that teachers often practice PBA. Almost two-thirds of the respondents often engage in PBA practices. This means most teachers practice PBA 50 to 79.9% of their interaction with students. From the teachers' responses, it could be inferred that respondents frequently ask students to explain their responses, to cooperate with peers and school personnel on projects, reflect on their learning process to take control of their learning, make informal observations about how students are responding to instruction and also

guide students to apply their knowledge to real-life problems. Students are guided by teachers to use hands on tasks to conduct several investigations. Respondents also encourage students to demonstrate their understanding of course content through simple sentences that gives a complete picture of what they have learnt. Thus, teachers in using PBA encourage the students to demonstrate practically what they have learnt in school, sometimes on their own and in other instances work collaboratively with others. It can be inferred that these strategies seek to ensure that students are capable of applying what they have learnt theoretically to real life problems. This is so because in the real world, there are very few instances where people will be asked to recall verbatim things that have been learnt in school. However, in most cases, people are asked to provide solutions to problems. This usually requires cooperating with others, organising ideas meaningfully and using hands on approaches to put into effect solutions that have been designed to fix the encountered problem.

For instance, in reference to the social constructivism theory, the social production of knowledge can take place in a variety of contexts and in a variety of ways, according to Kapur (2018). It could be accomplished by group discussion, teamwork, or any instructive activity. This shows that respondents in this study makes use of PBA which ensures that students can translate what they have learnt to solve real world issues. Furthermore, it could be noted that teachers encourage self-reflection. In relation to the social cognitive theory (Bandura, 2001), effective functioning requires reliable ways of distinguishing between accurate and faulty thinking. Thus, through self-reflection, students can engage in higher-order thinking that enhances their problem-solving skills.

The current findings align with Alkharusi et al. (2014), Attom (2017) and Arhin (2021)'s study on the PBA practices of teachers. The current study found that teachers in second-cycle institutions often utilise PBA practices, as was found in these studies as well. In line reference with Alkharusi et al. (2014), although using different instruments, both studies were conducted among teachers of second-cycle institutions. As such, it is not surprising that these teachers had above-average performance-based practices. Attom (2017) revealed that teachers in selected SHSs in the *Cape Coast Metropolis* generally practised authentic assessment. Although the current study utilised all SHSs in the *Cape Coast Metropolis*, it found similar results to that of Attom. Similarly, Arhin et al. (2021) confirmed that teachers at the JHS level perform PBA often. Arhin utilised a sample of teachers at a study centre drawn from the entire 16 regions of Ghana. Although the Arhin et al. failed to give the specific characteristics of these teachers, it could be implied that these were purposively selected teachers with a special characteristics, hence the results of their study.

The study, however, found different results from that of Frey and Schmitt (2010), Ogan et al. (2014), Daghan and Akkoyunlu (2014) and Aliningsih and Sofwan (2015). This can be attributed to the methodology utilised, the sample used and the sample size. Whiles Frey and Schmitt (2010) and found that PBA is mostly carried out among students at the higher levels of their educational settings (i.e. grade 12) than in grade 3, it is was generally concluded that PBA practices were not frequent among basic school teachers in the United States. Furthermore, Ogan et al. (2014) focused solely on Turkish pre-service physics teachers and their implementation in practice, and Aliningsih and Sofwan (2015) focused on a total of fifteen English teachers. In

Daghan and Akkoyunlu's (2014) study, several methods were used, such as observation, interviews and document analysis; the study focused on information technology teachers in Turkey. Thus, their findings are restricted in that their study sample was only teachers of a specific subject, which may not represent all teachers.

Challenges affecting the implementation of performance-based assessment among teachers

Respondents neither agreed nor disagreed on whether it was difficult for them to score students' projects. One of the challenges of PBA is that they find it difficult to give out hands-on PBA because the class they teach is very large. Also, the time for them is not enough to engage in that tedious assessment practice, practical materials are lacking, lack of resources in developing the assessment process and too much academic workload prevented them from giving practical work to students.

These findings are in line with several studies such as Abualrob, and Al-Saadi, (2019), who revealed that teachers argued that they rarely have time to do so and the amounts of duties assigned to them hinder them from adapting PBA strategies. Salma and Prastikawati, (2021) also revealed that the assessment rubric of performance-based assessment is more complicated rather than the traditional one. Also, interview data from Kirmizi and Komec (2016) revealed that teachers, in general, complained about problems in application, and lack of time. Thus, although teachers may be willing to practice PBA, these are some challenges that they encounter.

Influence of Knowledge on PBA

The results revealed that teachers' knowledge in PBA was a significant predictor of their PBA practices. Teachers' knowledge in PBA accounted for one-fifth of the variation in teachers PBA practices. This led to the rejection of the null hypothesis that "There is no statistically significant influence of knowledge of PBA assessment on PBA practices" is rejected in favour of the alternate hypothesis. The implication of the results is that as teachers' knowledge in PBA improves, their PBA practices also improves. Thus, teachers with higher level of knowledge in PBA are more likely to practice PBA. Conversely, teachers with low level of knowledge in PBA would not practice it. Generally, it is expected that teachers who are knowledgeable in PBA would practice it better than teachers who are not knowledgeable in PBA. The results highlights the relevance of teachers' knowledge in their PBA practices.

The current findings support that of previous research by Cimer and Cakir (2010) that mostly because teachers lack the knowledge and skills necessary to implement the changes required in PBA, they often do not practice it. The lack of understanding regarding performance assessment methods among teachers is the primary factor that accounts for their non-utilisation of PBA. Similarly, Sundeme (2019) found that among JHS teachers, teachers who are more knowledgeable in performance-based assessment are more likely to practice it.

Influence of demographic variables on the relationship between performance-based assessment knowledge and practices of teachers

The results revealed that school type (senior high school, senior high technical, and technical) as well as teaching experience (0-5, 6-10, 11-15, and

16 and above) were not significant predictors of teachers PBA practices when teachers' knowledge in PBA is controlled. This implies that, solely, these variables do not determine teachers' utilisation of PBA practices. Also, when these variables were introduced as moderators in the relationship between teachers knowledge of PBA and teachers practices of PBA, they were not significant moderators. The implication of the results is that the school type one teachers and the teaching experience alone do not determine whether teachers will engage in PBA or not. This is because teachers' knowledge is a necessary variable to determine their PBA practices.

The results of the study differs from the study by Alkharusi (2011) who found that teachers with teaching experience of 10 years or more performed PBA than teachers with lesser teaching experience. The differing results could be due to the instruments used and the sample. For instance, Alkharusi used 6 items in measuring the PBA practices of teachers who teach grade 6 to 10 (primary 6 to SHS 1). Furthermore, Alkarusi focused solely on three subject areas, English, Fine Arts and Science. The results are therefore restricted to these subject areas only.

Mediating role of teachers' beliefs in the relationship between knowledge in performance-based assessment and performance-based assessment practices of teachers

The results revealed that teachers' beliefs was a significant predictor of teachers PBA practices even when knowledge is controlled. The results showed that teachers who are of the conviction that their PBA practices would yield positive results such as improving their teaching and learning as well as providing feedback to students about their performance are more likely to

practice PBA than teachers who do not have the conviction that the use of PBA would yield positive results. Thus, even when knowledge of teachers' is controlled, their beliefs predicts their PBA performance. The implication of the findings is that teachers with higher beliefs in PBA also have higher PBA practices. Furthermore, the study also found that knowledge was a significant predictor of beliefs. Therefore, teachers' with higher levels of knowledge in PBA are more likely to have higher beliefs and consequently have higher PBA practices. This means that beliefs was a significant positive moderator in the relationship between knowledge of teachers and PBA practices of teachers. Teachers with higher knowledge have higher beliefs and teachers with higher beliefs have higher PBA practices, demonstrating complementary mediation where both the direct and indirect effects are significant and positive (Hair, Hult, Ringle, & Sarstedt, 2017).

The findings concur with a study by Aliningsih and Sofwan (2015) who found that the teachers' perceptions towards authentic assessment had a significant effect in their practices although the study focused on only three teachers. Similarly, Munif et al. (2019) indicated that teachers' beliefs were created based on their knowledge and experiences. It also influenced what they say and what they do in creating and directing the performance assessment although this was a qualitative case study.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

The purpose of the study was to assess performance-based assessment (PBA) practices of teachers in second cycle institutions in the Cape Coast Metropolis. This chapter presents a summary of the study, conclusions made and recommendations based on the conclusions.

Summary

Overview of the Study

The study assessed PBA practices of teachers in second cycle institutions in the Cape Coast Metropolis. The study was guided by six objectives which were translated into three research questions and three hypotheses. The study was guided by the Social constructivist theory of Lev Vygotsky and Albert Bandura's Social Cognitive theory. The research was conducted using a cross-sectional descriptive survey design. Those included were all of the public secondary school instructors in the Cape Coast Metropolitan Area. A total of 1299 people were included in the study, and a representative sample size of 426 was used.

Questionnaires which comprised of different scales from other researchers were adapted and utilised for the study. These specifically included knowledge of PBA, PBA beliefs, PBA practices and challenges in PBA utilisation. The scales were validated using exploratory factor analysis and confirmatory factor analysis. SPSS and SMART-PLS were used for these validation tests. The final version of the questionnaires had internal consistencies as follows; Knowledge of PBA (.701), Beliefs about PBA (.787), PBA practices (.731), and Challenges in PBA (.796).

Means, standard deviations, frequency, and percentages were calculated to present data on respondents' demographics and research questions, while structural equation modelling, moderation, and mediation analysis were performed with the help of SMART-PLS and the Hayes Process to answer research hypotheses. The bootstrap approach was used for all inferential analyses.

Key Findings

The following findings emerged from the study;

1. Teachers used in the study had a moderate level of knowledge about PBA.
2. Almost two-thirds of teachers often engage in PBA practices and most teachers practice PBA 50 to 79.9% of their interaction with students
3. Teachers faced several challenges in their practice of PBA. Challenges included large class sizes, inadequate time, resources, and too much workload.
4. Teachers' knowledge of PBA significantly predicted their PBA practices. Teachers' knowledge of PBA accounted for one-fifth of the variation in teachers' PBA practices.
5. School type and the teaching experience alone do not determine whether teachers will engage in PBA or not when knowledge of PBA is controlled. Also, these two variables do not moderate the relationship between teachers' knowledge and their PBA practices.
6. Teachers' beliefs was a significant positive predictor of teachers PBA practices even when knowledge is controlled. Beliefs was a significant positive moderator in the relationship between knowledge of teachers

and PBA practices of teachers. Teachers with higher knowledge have higher beliefs and teachers with higher beliefs have higher PBA practices.

Conclusions

From the findings of the study, it can be concluded that teachers have moderate level of knowledge on PBA. Current teachers' knowledge may be inadequate considering the need for teachers to always engage in PBA. It could also be concluded that teachers often practice PBA about 50% to 79.9% of the time. This may be inadequate since the current market trends call for practical application of knowledge learnt in the classroom to help solve real life problems. Teachers are faced with several challenges that limits them from using PBA. Teachers' knowledge in PBA is important if they are to practice PBA. Without adequate knowledge, teachers may be limited in the use of PBA. How long one has taught and the school one belongs to do not necessarily imply they will practice PBA when knowledge is controlled. Furthermore, it can be concluded that teachers' beliefs is important in their PBA practices. When teachers have the knowledge, and in addition have the conviction that utilizing it will yield positive results, it significantly increases their PBA practices.

Recommendations

Following the findings of the study, the following are recommended

1. The Ministry of Education, Ghana (MoE), Ghana Education Service (GES), and heads of second cycle institutions in the Cape Coast Metropolis as part of their training programmes/workshops for teachers should emphasize on the use of PBA to improve their knowledge of PBA.

2. The MoE and GES as well as heads of the various institutions should encourage teachers to practice PBA regularly to help students gain the necessary skills to function and contribute to development.
3. MoE, GES, and heads of second cycle institutions should provide adequate resources for PBA practices, reduce number of students in classes and employ more teachers to reduce workload of teachers in various schools. The ministry of finance should give clearance to aid GES in employing more teachers to help reduce the workload of teachers. The recommended class size is 35, and as such schools should adhere to this.
4. Teachers are encouraged to make use of their professional development allowance to learn more on the use of PBA in classrooms. This is an allowance meant to help them develop their teaching skills. Teachers should enrol in Measurement and Evaluation and Continuous Professional Development programmes to help them learn more about PBA.
5. Generally, it was expected that school type would have determine the relationship between PBA knowledge and practice. There should be awareness creation throughout all second-cycle institutions in the Cape Coast metropolis on the use of PBA with particular focus on senior high technical/technical schools.
6. Teachers' are encouraged to hold positive convictions about PBA. Beliefs predict practices and as such they should hold the conviction that PBA would yield good results in relation to students' acquisition of necessary skills to function in society.

Suggestions for Further Research

1. Future research should focus on specific subject areas and PBA practices of second cycle institutions.
2. Also, studies should focus on students' perception of PBA to identify students' views on PBA and how to improve on it.
3. Future studies should consider using the qualitative approach to understand the knowledge, practices and challenges that teachers face in PBA practices.
4. It is recommended that this study be replicated in different areas in Ghana, as differences in internal policies and workshops between districts and regions may result in disparate outcomes.

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APPENDICES

APPENDIX A: QUESTIONNAIRE

UNIVERSITY OF CAPE COAST

COLLEGE OF EDUCATION STUDIES

FACULTY OF EDUCATIONAL FOUNDATIONS

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

RESEARCH QUESTIONNAIRE

Dear Respondents,

You are invited to participate in research on Performance-Based Assessment (PBA) practices of teachers in second-cycle institutions in the Cape Coast Metropolis. You are assured that this questionnaire is strictly for academic purposes, and as such, all information obtained through this medium shall be treated as confidential. Please be honest in your responses.

Please fill in the required information below and tick [√] the appropriate box where necessary.

There are no right or wrong answers.

SECTION A: DEMOGRAPHIC INFORMATION

1. Gender
   - I. Male [ ]
   - II. Female [ ]
2. School type
   - I. Senior High School [ ]
   - II. Senior High Technical [ ]
   - III. Technical [ ]
3. Subject taught _____

4. Years of teaching (e.g. 2years) _____

SECTION B: KNOWLEDGE OF PERFORMANCE-BASED ASSESSMENT (PBA)

Some of the following statements represent the concept of PBA. Please answer by ticking (√) the corresponding boxes the extent to which you agree with these statements.

1=Strongly Disagree (SD) 2 = Disagree (D) 3 = Agree (A) 4 = Strongly Agree (SA)

SN	Statements	SD	D	A	SA
1	PBA focuses on hands-on practical work in the classroom				
2	PBA is used to assess students' performance based on the execution of projects				
3	PBA allows students to demonstrate mastered specific skills and competencies through performance				
4	PBA is about designing and carrying out experiments, and writing essays which require students to rethink, integrate, or apply information				
5	PBA gives opportunity for students to work together to accomplish tasks				
6	PBA is about demonstrating proficiency in using a piece of equipment or a technique				
7	PBA encourages students to develop, interpret and use maps				
8	In using PBA, stimulus materials are presented to an individual to generates a response that can be rated for				

	quality using explicit standards				
9	PBA is about assessment that require immediate answers that allow students to demonstrate practically what has been learnt.				
10	PBA requires that students actively develop their approaches to the task under defined conditions, knowing that their work will be evaluated according to agreed-upon standards				
11	PBA is about tangible and reliable tasks that demand students to perform an activity with their knowledge and skills on what they have been taught				
12	PBA is about delving into students' higher-order thinking skills, such as evaluating the reliability of sources of information, synthesising information or using deductive/inductive reasoning to solve a problem				
13	PBA encourages students to produce a material or exhibit a performance as in writing or self-expression skills				

SECTION C: BELIEFS ABOUT PERFORMANCE-BASED ASSESSMENT (PBA)

This section focuses on teachers' beliefs about PBA. Please answer by ticking (√) the corresponding boxes.

1=Strongly Disagree (SD) 2 = Disagree (D) 3 = Agree (A) 4 = Strongly Agree (SA)

SN	Statements	SD	D	A	SA
1.	PBA is an accurate indicator of a lesson's quality.				
2.	Oral assessment systems enhance the efficiency of the assessment.				
3.	PBA tools provide more precision in feedback sessions				
4.	PBA helps determines if students meet course standards				
5.	PBA provides feedback to students about their performance				
6.	PBA results modify teaching practices				
7.	PBA helps students improve their learning				
8.	Standardisation of PBA scores helps teachers understand scoring methods better				
9.	PBA helps to rule out subjectivity in assessment				
10	PBA is well accepted by students				
11	PBA gives a better option of assigning a grade to student work.				
12	PBA helps place students into proficiency levels (A1, A2, B1, B2, etc.).				
13	PBA has a major impact on teaching				

14	PBA is fair to students				
15	PBA systems do not force teachers to teach in a way that goes against their beliefs.				
16	PBA does not interfere with the way teachers teach.				
17	PBA helps to hold teachers responsible for inaccurate assessments (lack of standardisation, poor prompts, etc.)				
18	Teachers conduct PBA, and they make good use of the results.				

SECTION D: PERFORMANCE-BASED ASSESSMENT PRACTICES (PBA)

Please answer by ticking (√) the corresponding boxes whether the following statements apply to your assessment practices.

1= Never (N), 2 = Rarely (R), 3 = Often (O) 4 = Always (A)

SN	Statements	N	R	O	A
1.	I guide students to effectively translate issues and situations into meaningful tasks with a clear purpose.				
2.	I ask students to write simple sentences expressing a complete thought				
3.	I ask students to create and organise ideas with a purpose				
4.	I ask students to use symbols and words to show meaning				
5.	I assist students to collaborate to create editorials, reports, recipes etc.				
6.	I assist students to prepare criteria for assessing their own project				

7.	I guide students to apply their knowledge to real-life problems				
8.	I ask students to demonstrate their ability to organise ideas effectively				
9.	I guide students to use hands-on tasks to conduct several investigations				
10.	I ask students to provide explanations for their responses.				
11.	I assist students to add supportive details to stories				
12.	I ask students to cooperate with peers and school personnel on projects				
13.	I ask students to reflect on their learning process to take control of their learning				
14.	I assist students to communicate meaning through pictures				
15.	I assist students to demonstrate and extend their understanding of number meaning				
16.	I make informal observations about how students are responding to instruction				

SECTION E: PERFORMANCE-BASED ASSESSMENT (PBA) CHALLENGES

The following statements represents some reasons why teachers are unable to implement PBA. Please answer by ticking (√) the corresponding boxes.

1=Strongly Disagree (SD) 2 = Disagree (D) 3 = Agree (A) 4 = Strongly Agree (SA)

SN	Statements	SD	D	A	SA
1.	It is difficult to supervise projects of students				
2.	I find it difficult to determine the appropriate PBA for students				
3.	It is difficult for me to score projects of students				
4.	I find it difficult to use PBA because practical materials are lacking				
5.	Too much academic workload prevents me from giving practical work to students				
6.	I find it difficult to give out hands-on PBA because the class I teach is very large, which poses a challenge for supervision				
7.	Due to the lack of attention from policymakers, I find it difficult to practice PBA				
8.	I find it difficult to practice PBA due to a lack of resources in developing the assessment process				
9.	Because of lack/insufficient knowledge, I find it difficult to use PBA				
10.	I find it difficult to assess problem-solving skills				

11.	I find it difficult to use PBA because of insufficient knowledge about how scoring rubrics on performance can be prepared, and I cannot find rubrics related to task topics				
12.	I find it difficult practising PBA because I become indecisive in terms of the subject and areas to concentrate on				
13.	I find it difficult to practice PBA because the time for me is not enough to engage in that tedious assessment practice				

THANK YOU FOR YOUR PARTICIPATION

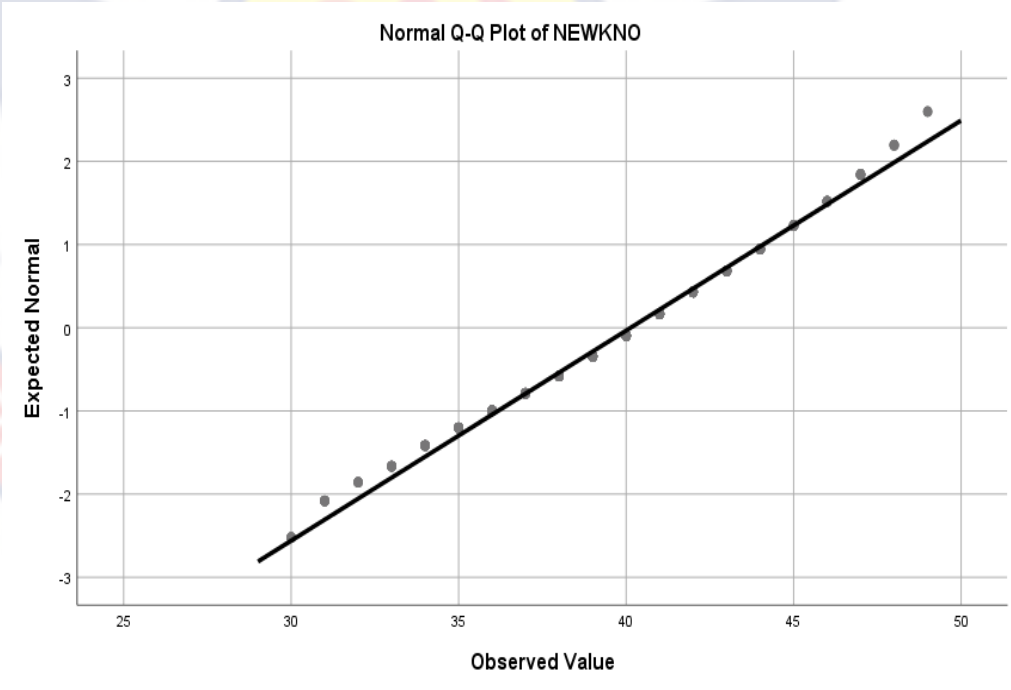
APPENDIX B

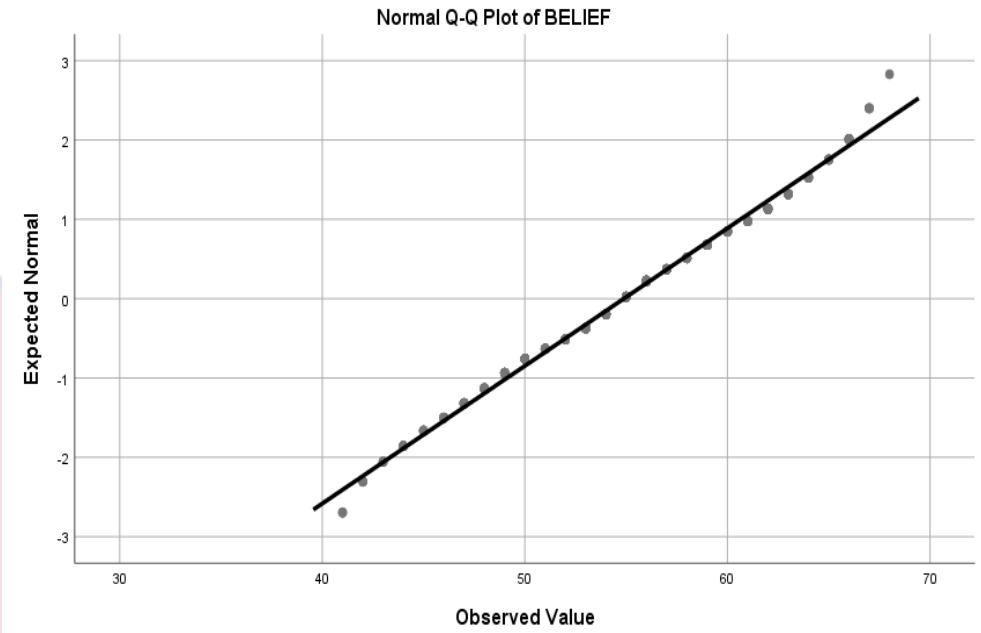
TESTS OF NORMALITY

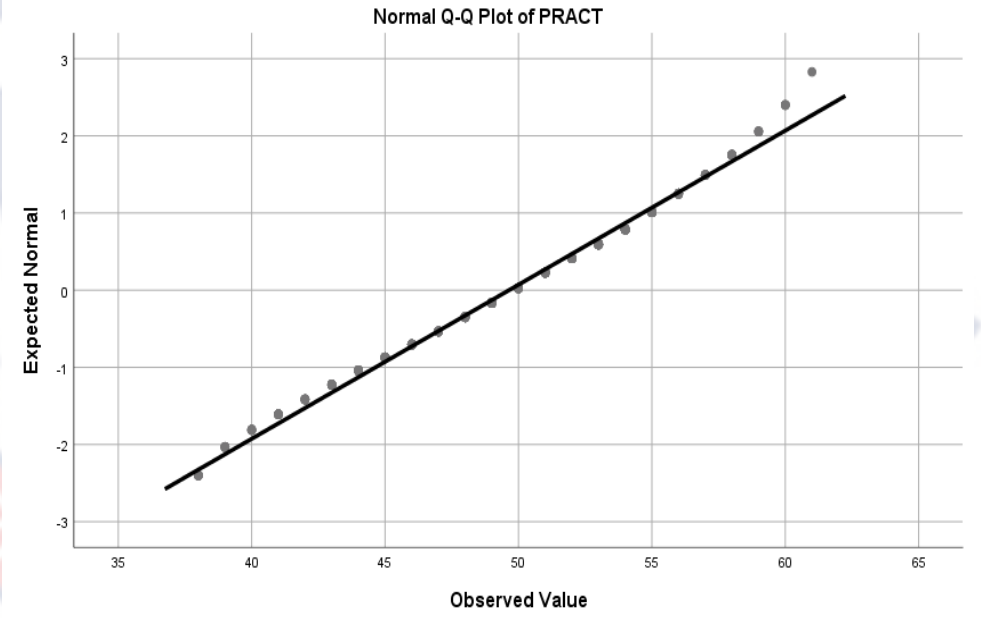
Parameters	Knowledge	Beliefs	Practices	Challenges
Mean	40.13	54.89	49.65	35.29
Standard deviation	3.96	5.76	5.01	5.56
5% Trimmed mean	40.20	54.91	49.71	35.31
Median	40	55.00	50.00	35.00
Skewness	-.266	-.051	-.183	.009
Std. Error	.118	.118	.118	.118
$Z_{skewness}$	-2.25	-0.43	-1.55	.08

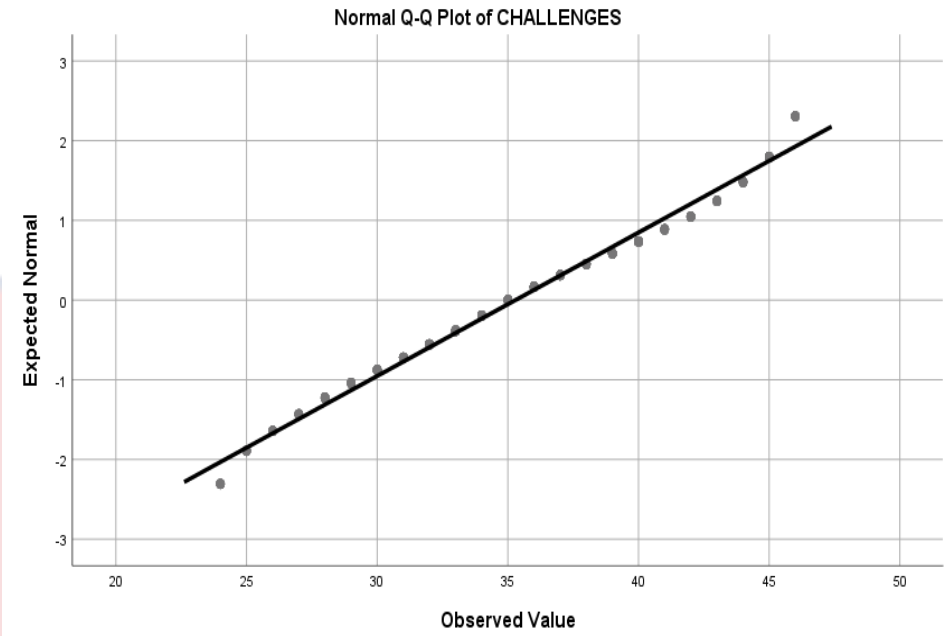
Source: Field data (2022)

NORMAL Q-Q PLOTS



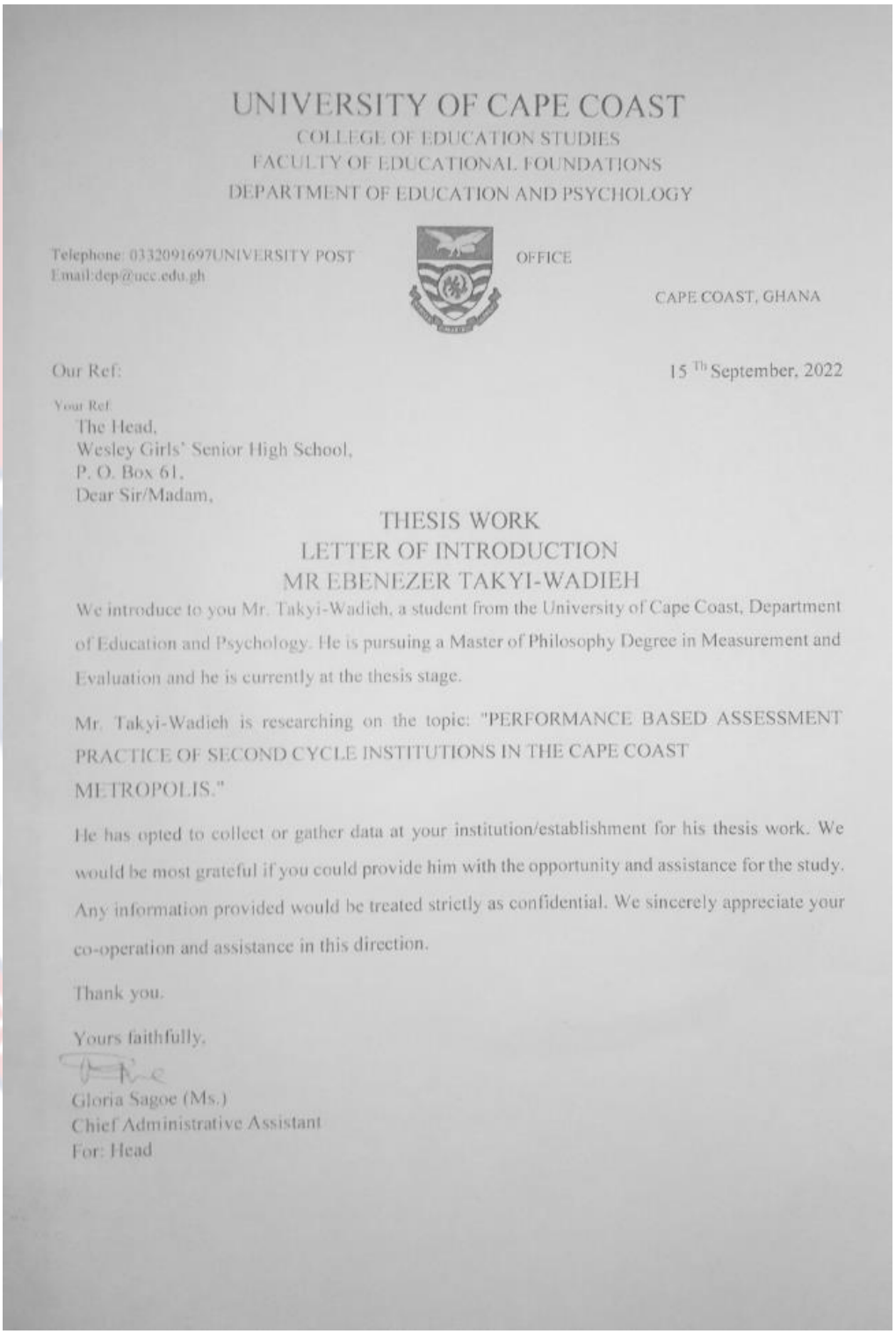






APPENDIX C

INTRODUCTORY LETTER



UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF EDUCATION AND PSYCHOLOGY

Telephone: 0332091697UNIVERSITY POST OFFICE
Email:dep@ucc.edu.gh
CAPE COAST, GHANA

Our Ref: 15 Th September, 2022

Your Ref:

The Head,
Wesley Girls' Senior High School,
P. O. Box 61,
Dear Sir/Madam,

THESIS WORK
LETTER OF INTRODUCTION
MR EBENEZER TAKYI-WADIEH

We introduce to you Mr. Takyi-Wadieh, a student from the University of Cape Coast, Department of Education and Psychology. He is pursuing a Master of Philosophy Degree in Measurement and Evaluation and he is currently at the thesis stage.

Mr. Takyi-Wadieh is researching on the topic: "PERFORMANCE BASED ASSESSMENT PRACTICE OF SECOND CYCLE INSTITUTIONS IN THE CAPE COAST METROPOLIS."

He has opted to collect or gather data at your institution/establishment for his thesis work. We would be most grateful if you could provide him with the opportunity and assistance for the study. Any information provided would be treated strictly as confidential. We sincerely appreciate your co-operation and assistance in this direction.

Thank you.

Yours faithfully,

Gloria Sagoe (Ms.)
Chief Administrative Assistant
For: Head

APPENDIX D

ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
ETHICAL REVIEW BOARD

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: CES/ERB/ucc.edu/v6/20-82

Your Ref: ....

Date: 14th September, 20

Chairman, CES-ERB
Prof. J. A. Omotosho
jomotosho@ucc.edu.gh
0243784739

Vice-Chairman, CES-ERB
Prof. K. Edjah
kedjah@ucc.edu.gh
0244742357

Secretary, CES-ERB
Prof. Linda Dzama Forde
lforde@ucc.edu.gh
0244786680

Dear Sir/Madam,

ETHICAL REQUIREMENTS CLEARANCE FOR RESEARCH STUDY

The bearer, Ebenezer T. Wodieh, Reg. No. EF/MEP/20/0002s M.Phil. / ~~Ph.D.~~ student in the Department of Education and Psychology in the College of Education Studies, University of Cape Coast, Cape Coast, Ghana. He / ~~She~~ wishes to undertake a research study on the topic:

Performance-based assessment practice of second cycle institutions in the Cape Coast Metropolis.

The Ethical Review Board (ERB) of the College of Education Studies (CES) has assessed his/~~her~~ proposal and confirm that the proposal satisfies the College's ethical requirements for the conduct of the study.

In view of the above, the researcher has been cleared and given approval to commence his/~~her~~ study. The ERB would be grateful if you would give him/~~her~~ the necessary assistance to facilitate the conduct of the said research.

Thank you.
Yours faithfully,

Prof. Linda Dzama Forde
(Secretary, CES-ERB)