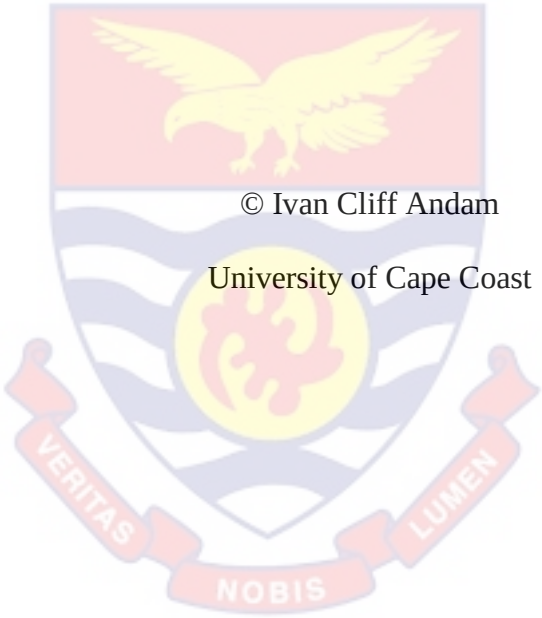
UNIVERSITY OF CAPE COAST

INFLUENCE OF TEACHER CHARACTERISTICS ON TEACHER USE OF TEST BLUEPRINT AT THE BASIC SCHOOLS IN CAPE COAST METROPOLIS

IVAN CLIFF ANDAM

2023



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BY

IVAN CLIFF ANDAM

Thesis submitted to the Department of Education Programme, College of Distance Education, University of Cape Coast, in partial fulfilment of the requirement for the award of Master of Philosophy degree in Measurement and Evaluation

OCTOBER, 2023

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: Ivan Cliff Andam

Supervisors' Declaration

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

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

Name: Dr. Emmanuel Arthur Nyarko

ABSTRACT

The study sought to explore the influence of teacher characteristics on teacher use of test blueprint at the basic schools in cape coast metropolis. The descriptive survey design was employed to carry out the study. Three hundred teachers out of the total population of 1,244 teachers in the 79 public Junior High Schools in Cape Coast Metropolis were considered. A purposive sampling technique was employed in the sampling procedures. A self developed five-point likert scale questionnaire was used in collecting the data for the study. Frequencies, percentages, means, standard deviations, independent sample T-test, One-Way Analysis of Variance (ANOVA) and Simple Linear Regression were used to analyse the data. The results revealed that teachers are highly experienced in using test blueprint to construct test items. The results also showed that there is a moderate level of anxiety among teachers regarding the use of test blueprints in constructing test items. The results further revealed that there was no statistically significant gender difference in teachers' use of test blueprint. The results further revealed that perceived usefulness significantly influenced teachers' use of test blueprints in test item construction. The study recommended that teachers should participate in continuous professional development workshops that focus on enhancing their skills in using test blueprints effectively. These workshops should provide hands-on training to address areas of uncertainty or anxiety about test construction, ensuring that teachers are both confident and competent in their use of test blueprint. The focus should be on practical applications, common challenges, and innovative ways to integrate test blueprints into everyday assessment practices.

KEYWORDS

Table of specification

Test item construction

Test blueprint

Teachers experiences

Teachers attitudes

Teacher characteristics

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DEDICATION

To my mother, Francisca Comfort Asare

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

Background to the Study

Assessment is a crucial component of the educational curriculum since it enables us to track students' progress towards the expected learning goals. Shumway and Harden (2003). Mussawy (2009) defines assessment as a comprehensive concept that encompasses the use of several tactics and techniques to evaluate the degree to which students are attaining the planned educational goals and results of a session. Birenbaum and Feldman (2014) assert that many forms of evaluation may be used to evaluate students' understanding and determine their proficiency in certain academic areas. Two primary forms of evaluation often used are conventional assessments and performance-based assessments. Khan (2007) related assessment to measurement by stating that while measurement is a means of determining how much learning the student has achieved over a while, assessment is one of the basic measurement tools in education. Measurement answers the question of 'how much' (Kumar, Anderson, Phillips, Eckel, Campbell & Stringari, 2016 p.4)

Birenbaum and Feldman (2014), in comparing the two major types of assessments, stated that the traditional types of assessment tools are generally knowledge-based and include conventional types of tests such as multiple-choice questions, short answer, essays or constructed responses and standardized tests, whereas in performance-based assessments, students are required to perform a task rather than select from options provided.

Primarily, teachers are the main assessors of students in classroom learning (Turner, 2013). Teachers design assessments with the aim of obtaining information to support classroom instruction and to monitor students progress towards achieving year-end learning outcomes (Jalal, 2019, p. 1). One of the assessment techniques used in the classroom is a test. Cronbach (1970) defines a test is a systematic procedure for observing and describing one or more characteristics of a person with the aid of either a numerical scale or a category system. Khan (2007) is of the view that a test is an instrument for measuring a sample of behaviour. In other words, it helps us determine how well a student performs compared to others or a domain of performance task. Test basically refers to a s set of questions or items within specific conditions (Wiersma & Jurs, 1990). They argue that test involves measurement, but not every measurement is testing. Where a test is not utilized, Bassey and Usani (2016) noted that it leaves the teacher in a difficult situation of ascertaining the extent to which instructional objectives have been achieved, the appropriateness of a chosen methodology, and teachers' general competencies in the delivery of lessons.

I have personally observed for some years that teacher made test becomes popular in most rural and urban schools, since a test paper can move from one school to the other or a teacher can repeat a past question. However, teachers often reuse test items without analyzing or revising the test items to meet their current objectives during teaching and learning, which in itself is a big challenge that can lead to (a) over-testing.

(b) insufficient time for test administration, (c) test items not covering subject content areas in the curriculum, and many others.

To ensure that assessments are consistent with course or subject objectives and address important learning outcomes in a balanced manner, it is important that assessment is developed according to a well-thought-out plan (Isotani et al., 2013). These planning documents are typically called Test Blueprints. It is also known to others as Test Plans or Test Specifications or Table of Specifications (Alade & Igbinosa, 2014).

Webb (2006) views test blueprint as a rubric, document, or table that outlines the learning outcomes to be tested, the level of complexity, and the weight for the learning outcome (p.1). Additionally, it describes the key properties and the structure of a test (Herman & Dorr-Bremme, 1992). It usually includes the content areas along with the cognitive levels to be covered.

In a typical test blueprint, the content areas are listed in the left-hand column of the table, while the cognitive levels are shown across the first row of the table. Similarly, it provides the plan for what a test will measure and guide all subsequent steps of test construction. Thus, a test blueprint guides all subsequent steps of test construction. The test blueprint also informs key content of classroom assessments (Izard, 2005). Suskie (2009) highly recommends that teachers must plan their test item construction with a test blueprint.

Millman and Greene (2015) evince that any test blueprint should specify the content to be covered and describe properties such as the amount of emphasis allocated to each content area, the cognitive demand of the assessment tasks, the assessment format, and other important features. Classroom assessment has received growing interest from the measurement

community in recent years (Yim, 2010). Given that instructors bear significant responsibility for evaluating teaching and learning outcomes for students, ensuring consistent classroom assessment is a shared issue among teachers, administrators, and other stakeholders in education. The use of an assessment esults has varying impacts on distinct cohorts of stakeholders (Camden et al., 2015).

As the name implies, it is not only in the classroom that a blueprint is needed, a blueprint guides construction works such as buildings, roads, bridges and other areas (Richlin, 2006). There exists a multitude of diverse methods for constructing or designing a building that an engineer or building contractor may choose to use in their construction endeavours. Similar to how engineers meticulously consider the desired appearance of the final product and develop a comprehensive plan or blueprint that outlines every aspect, instructors should also engage in this process before creating test items for an examination requires the use of test blueprint (Raymond & Grande, 2019).

Nevertheless, the cognitive levels listed on the first row on the table of specification is based on Bloom's Taxonomy which is asset of three hierarchical models use for classification of educational learning outcomes into levels from complexity and specificity. These three levels consist of cognitive, affective and psychomotor domains. Sivaraman, and Krishna (2015) Bloom's Taxonomy is a multi-tiered model of classifying thinking according to six cognitive levels of complexity. Throughout the years, the levels have often been depicted as a stairway, leading many teachers to encourage their students to climb to a higher (level of) thought. Forehand (2010) Clearly explains that, Bloom's Taxonomy has stood the test of time. Due to its long

history and popularity, it has been condensed, expanded, and reinterpreted in a variety of ways. During the 1990's, a former student of Bloom's, Lorin Anderson, led a new assembly that met for the purpose of updating the taxonomy, hoping to add relevance for 21st-century students and teachers. (Forehand, 2017). The individuals involved in this study may be categorised into three distinct groups: cognitive psychologists, curriculum theorists and instructional researchers, and testing and assessment professionals (Tangsakul, Kijpoonphol, Linh, & Kimura, 2017).

Assessing skills or knowledge is as important as the teaching/learning of the skill or knowledge. Herman, Aschbacher, and Winters (1992) pointed out that students perform better when they know the goal, see models, and know how their performance compares to the standard. The basic purpose of all tests, regardless of the way in which the test is used and the outcome associated with it is to distinguish the level of aptitude, abilities, and skills among the test takers. To this end, for a test to achieve its goals, it must be well constructed. Planning of any assessment is key and requires some level of expertise in test construction (Kumar et al., 2016).

Amedahe (2000) stated that teacher -based tests may be based on a number of factors, notably among them are, training in assessment techniques, class size and a particular school's policy in assessment standards with implications on validity and reliability of the assessment results. Constructing fair tests that give accurate information about students learning is an important skill that teachers need. The choice of the optimal assessment method depends on the type of knowledge or skill being assessed and the purpose of the assessment itself. The table of specifications is often useful for organizing the

planning process of designing a test, which allows the teacher to determine the content of the test (Nunnaly, 2007). Yet, students have always had problems with teacher-made tests ranging from over-testing, insufficient time for test administration, test items not covering course content, to the test itself not being valid. Content validity is ensured by the process through which the measure is constructed.

A content-valid test should have at least moderate to high levels of internal consistency. This suggests that the items measure a common element, primarily rest upon logical argument and expert judgment, and frequently empirical research. Evidence based on test content underscores the degree to which a test measures what it is designed to measure (Wolming & Wilkstron, 2010). The bulk of research studies had concentrated on the test blueprint (Table of Specification) as one aspect of setting items for students, but not much has been done on its development and use in educational assessment.

It is evident to note that the Ghana Education Service (GES), acting under directives from the Ministry of Education (MOE), employs both professional and non-professional personnel to teach. Every professionally trained Junior High School (JHS) teacher is expected to have had at least a semester's course in assessment in education during pre-service training and, as such is expected to be guided by the basic testing principles laid down by measurement experts in his/her nature of achievement testing.

Given the extent of prevalence of classroom achievement tests in Ghanaian schools and the variety of uses to which the results from these tests are put, there is a need for research into the achievement testing practices of teachers. Test construction is vital to ensuring the validity of a test. Garg,

Saxena, Shekhawat, and Daga (2013) teachers' inability to appropriately construct good test would likely affect the validity and reliability of the test. The rigorous steps that the teacher would have to go through to construct a good test would require some level of skills, attitudes and knowledge about the process. Couple with the above, Amedahe (1989) and Quagrain (1992) it was evident that most Ghanaian teachers had limited skills for constructing achievement tests, the objective and essay-type tests, which are the most frequently used instruments in our schools. Numerous factors influence the design of the tests used in an assessment program. He and Tymms (2005) test designers must consider factors such as the relationship between the assessable curriculum standards and the test coverage, the modalities in which the test will be administered, the organization of the test into reporting categories, the possible need to align the tests with multiple sets of curriculum standards, and many other factors. Green, Johnson, Kim, Pope (2007) constructing fair tests that give accurate information about students learning is an important skill for teachers. The table of specifications is often useful to organize the planning process of designing a test, which allows the teacher to determine the content of the test. A blueprint makes writing the test easier and contribute immensely to test validity.

Before addressing test design and item creation challenges, policy makers must establish a well-defined vision for the specific measurements that the test is intended to assess and the intended reasons for using the generated data on student performance. An assessment programme created to inform classroom teachers about a student's achievement and guide instruction would have a distinct structure compared to an assessment programme intended to

determine if students have met the required standards for a specific course (Tangsakul et al., 2017).

Statement of the Problem

A quality teacher-made test should follow valid item-writing rules. As indicated earlier, assessment is the process of determining the extent to which an objective is achieved, establishing the effectiveness of the learning experiences provided in the classroom and examining how well the goals of teaching have been accomplished (Kumar et al., 2016). In this regard, teaching remains central to both learning and assessment (Kumar et al., 2016). In the school context, a test is the main assessment tool for assessing students learning (Quansah, Amoako and Ankomah, 2019). Test, as a tool for assessment, is used by the teacher to obtain information about students learning and to measure the efficiency of a teacher. A classroom teacher depends upon the achievement tests for measuring the progress of his students. Thus, such an important tool or document must be well-constructed to ensure its objectivity, reliability and validity.

However, teachers level of discomfort with the quality of their tests is reported in the literature (Oescher and Kirby, 1990; Wise et al., 1991). Some studies have reported that the test construction duty of teachers is a main source of anxiety, particularly for teachers with few years of experience (Quansah, Amoako, and Ankomah, 2019; Ebinye, 2001). Quansah, Amoako, and Ankomah (2019) for instance, concluded in their study that teachers overlook critical issues such as validity and reliability in test construction. Reported of lack of proper balance of the content the test was supposed to

cover. Eshun (2015) found that teachers do not apply the prescribed principles for constructing test items.

Evidence from a recent study by Sasu (2017) and Zakariya (2020) on assessment practices of junior high school teachers also suggests that most teachers do not construct their test items well. Ebinye (2001) attributed this anxiety mainly to teachers' inadequate test construction skills, whereas Quansah et al. (2018) posit that lack of training could be a factor.

For this reason, Frey (2007) emphasizes that it is of particular importance for classroom teachers to construct tests that have content-related validity. A key element to achieving these is the efficient and effective use of a test blueprint which is a vital component of test construction (Frey, 2007). Using test blueprints to organise a teacher-made test help to alleviate content validity problem because it helps the teacher to create a good balance in several areas of the content (Nunnaly, 2007).

It is therefore necessary that teachers are well-versed in the usage of test blueprint and its importance. Using a test blueprint in test item construction demands that teachers deeply understand the Bloom's Taxonomy and how questions are distributed across the content areas the test should cover. Teachers require a lot of skills and expertise to enable them to meet the arduous task of constructing quality achievement tests, which is possibly achieved through the use of test blueprints and other principles of test item construction. Due to the complexities in the construction of this specification table, teacher use of test blueprint could be affected by teacher demographics such as gender, age, teaching experience and level of training. Other factors might include teachers test construction anxiety, teaachers attitude to test

construction, ease of use and perceived usefulness of test blue print in test item construction.

Unfortunately, there is a paucity of literature on teacher use of test blueprints in test item construction in the Cape Coast Metropolis. Based on the background to the study of this work, much has not been done to find out how characteristics such as age, teaching experience, test anxiety, perceived ease of use and usefulness could affect teacher use of test blueprints in test item construction in our Ghanaian context. Nevertheless, from the previous works critically examined in the background to this study, in the Ghanaian educational settings, research conducted in the area of testing practices in secondary schools in the Central Region (Amedahe, 1989); Teacher-competence in the use of essay tests: A study of secondary schools in the Western Region (Quaigrain, 1992); Testing practices of SHS teachers in the Ashanti Region (Oduro-Okyireh, 2008); Assessment practices of Teacher Training College tutors (Anhwere, 2009); Assessment practices of tutors in the Nurses‟ Training Colleges in Western and Central Regions of Ghana (Wiredu, 2013); Testing practices of Junior High School teachers in the Cape Coast Metropolis (Sasu, 2017); Teachers' test construction skills in senior high schools in Ghana (Quansah Amoako and Ankomah, 2019); Ghana: Trends and futures (Eshun, 2015); Teachers' attitude towards the teaching and assessment of effective outcomes in social studies in selected junior high schools in Cape Coast metropolis (Ghansah, 2009); Perception of authentic assessment and its practices among teachers in public Senior High Schools in Cape Coast Metropolis (Attom, 2017); Teachers' Experiences in Assessment Process for Children at-risk of Learning Difficulties in Cape Coast Metropolis (Eshun,

2021) and Barriers to Basic School Teachers' Implementation of Formative Assessment in the Cape Coast Metropolis of Ghana (Asare and Afriyie, 2023) appears to leave the following research gaps to be filled in this research:

1. There is the need to explore the influence of teacher characteristics and quality test item construction of basic school teachers in Cape Coast Metropolis.
2. There is the need to explore the influence of teacher characteristics on teacher use of test blueprint at the basic schools in Cape Coast Metropolis. Hence, this becomes the focus of this study.

Purpose of the Study

The study sought to explore the influence of teacher characteristics on teacher use of test blueprint at the basic schools in the Cape Coast Metropolis. Specifically, the study was designed to:

1. Examine teachers' use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.
2. Examine teachers' level of experiences on the use of test blueprint in test item construction at the Basic Schools in the Cape Coast Metropolis.
3. Determine teachers' test item construction skills on the usage of test blueprint in the Basic Schools in the Cape Coast Metropolis.
4. Explore how teachers' attitude to test construction affect their use of test blueprint in test item construction.
5. Determine teachers' test contruction anxiety level in the use of test blueprint in the Basic School in the Cape Coast Metropolis.

6. Explore how teachers' perceived ease of use of test blueprint affect teachers' use of test blueprint among Basic School teachers in the Cape Coast Metropolis.
7. Establish the extent to which teachers perceived usefulness of test blueprint affects teachers' use of test blueprints in test item construction.
8. Determine the extent to which teachers' demographic variables (gender, age, years of teaching experience and educational background) influence teachers use of test blueprints in test item construction.

Research Questions

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

1. What are teachers' level of experiences in the use of test blueprint at the basic schools in the Cape Coast Metropolis?
2. What is the level of teachers' skills in the use of test blueprint in test item construction at the Basic Schools in the Cape Coast Metropolis?
3. What is the attitudes of teachers toward the use of test blueprint in test item construction at the basic schools in the Cape Coast Metropolis?
4. What is the influence of teachers' test construction anxiety on the use of test blueprint in test item construction at the basic schools in the Cape Coast Metropolis?
5. What is the level of usefulness of test blueprint in test item construction at the basic schools in the Cape Coast Metropolis?

Research Hypotheses

$H_0$1: There is no statistically significant gender difference in teachers' use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_1$1: There is a statistically significant gender difference in teachers' use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_0$2: There is no statistically significant age difference in teachers' use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_1$2: There is a statistically significant age difference in teachers' use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_0$3: There is no statistically significant difference in years of experience and teachers' use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_1$3: There is a statistically significant difference in years of experience and teachers' use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_0$4: There is no statistically significant influence of educational background on teachers' use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_1$4: There is a statistically significant influence of educational background on teachers' use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_0$5: There is no statistically significant influence of perceived ease of use on teachers' use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.

$H_1$5: There is a statistically significant influence of perceived ease of use on teachers' use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.

$H_0$6: There is no statistically significant influence of perceived usefulness on teachers' use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.

$H_1$6: There is a statistically significant influence of perceived usefulness on teachers' use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.

$H_0$7: There is no statistically significant influence of teachers' attitude to test construction on the use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.

$H_1$7: There is a statistically significant influence of teachers' attitude to test construction on the use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.

Significance of the Study

It was envisaged that the findings of this study will be useful, especially to teachers, because it will help provide the avenue for them to know the right way to assess students as their test items will be made up of the constituents of the table of specifications. Teachers will also be able to assess their students with test items that are both valid and reliable. The outcome of the study will help school leadership and school heads on the benefits of the

test blueprint and, therefore, aid them structure and organse in-service training for their teachers to keep them (teachers) abreast with the development and use of test blueprints in their various classrooms.

Furthermore, the findings of this study will help stakeholders especially teachers to determine the state of affairs with respect to achievement testing in the Ghanaian educational system. This, it is believed, will help teachers who received instruction in assessment in education to be up and doing and put their acquired knowledge into practice since testing principles were related to practice throughout the study. Positive suggestions were offered as a means of addressing these flaws. It is hoped that these suggestions will help all teachers to improve their testing practices.

Again, the findings of the study will inform curriculum developers and examination bodies in planning a good and effective curriculum with its basis on the test blueprint. Finally, the results of this study will add to the existing literature on the development and use of test blueprints by teachers in schools. Other researchers may also use the findings as a reference for conducting further research on the development and use of test blueprints.

Delimitations

The study was delimited to only basic school teachers in Cape Coast Metropolis. Content-wise, the study was delimited to influence of teacher characteristics on teacher use of test blueprint at the basic schools in Cape Coast Metropolis, Some variables of interest for measurement included teachers' test construction skills in the usage of test blueprints, teachers' demographics, teachers' test construction anxiety in the use of test blueprint, teachers' teaching experiences and teachers'use of test blueprints in test item construction.

Limitations

According to Best and Kahn (1993), limitations of a study are conditions beyond the control of the researcher and may place restrictions on the conclusions of the study and their application to other situations. First, they are susceptible to response bias, where respondents may provide socially desirable or inaccurate answers, which can compromise the validity of the data (Bryman, 2016). Secondly, questionnaires often lack depth, particularly when using closed-ended questions, limiting respondents from expressing detailed or nuanced opinions (Creswell, 2014). In this study, the questionnaire was administered in person, which helped increase response rates. However, challenges such as limited accessibility or time constraints still potentially restricted the diversity of the sample (Dillman, 2011). I also observed instances where some respondents filled out the questionnaire on behalf of others. This behavior compromises the reliability of the responses and raised concerns about the authenticity of the data collected (Dillman, 2011).

Definition of Terms

Some of the words within the study are given operational definitions as they are used in the context and scope of the research as follows:

Achievement tests: They are generally teacher-made tests

Assessment practices - the ways basic school teachers gather information about what students have learnt to make decisions about the students.

Assessment: A process of gathering evidence of what a student can do and providing feedback on a student's learning to encourage further development.

Test: A task or series of tasks which are used to measure specific traits or attributes in people. In educational settings, tests include paper and pencil instruments, which contain questions that students and pupils respond to. The responses provided to the questions help the test giver to obtain an estimate of the specific trait being measured.

Perception*:* Views or opinions held by an individual resulting from experience and external factors acting on the individual.

Test Blueprint: The test blueprint, sometimes also called the table of specifications, provides a list of the major content areas and cognitive levels intended to be included on each test form. A test blueprint is a document that reflects the content of an assessment that you will give your students.

Organization of the Study

The study was organised into five chapters. Chapter one looked at the introduction to the study this comprises the background to the study, statement of the problem, purpose of the study, objectives of the study and research questions. The rest are; the significance of the study, delimitation, and the organisation of the study. Chapter two dealt with the review of literature relevant to the study, theorrtical framework, conceptual review, empirical review, conceptual framework and other major subheadings, while chapter three focused on the methodology, and this included research design, population, sampling and sampling procedure, data collection procedure and data analysis. Chapter four also focused on the results and discussion. The final chapter considered the summary, conclusion, recommendations, as well as suggested areas for further research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter focuses on a critical review of relevant literature, examining key theories and empirical studies related to the research topic (Creswell, 2014). The review highlights existing knowledge, identifies research gaps, and positions the study within the broader academic context (Hart, 2018). By analyzing strengths and limitations of previous studies, the chapter establishes the foundation for the research methodology (Ridley, 2012). For this reason, it is necessary to review literature related to the topic. Information was gathered from journals, abstracts, the internet, books, and works people have done on assessment practices in education using test blueprints in test item construction. For easy referencing, the literature was reviewed under various sub-headings based on the research questions of the study.

Theoretical Framework

Theory of Planned Behaviour

The theory of planned behavior (TPB) model is a very powerful and predictive model for explaining human behavior. This theory links one's beliefs and behavior, and it states that attitude towards the behavior, subjective norms, and perceived behaviour control together shape individual behavioural intentions and behaviour. The Theory of Planned Behaviour is one of the most commonly applied theoretical frameworks for predicting and understanding human behaviour. It evolved from the earlier theory of reasoned action (Fishbein et al., 2001).

The Theory of Planned Behaviour argues that three kinds of beliefs guide human action, that is behavioural beliefs, normative beliefs, and control beliefs. A behavioural belief, an individual's belief about the results of behaviour, creates the individual's attitude toward the behaviour. Normative belief, which refers to an individual's perception of how significant others will judge a behaviour, produces a subjective norm. Control belief refers to an individual's perceptions of the control he or she has over the behaviour, which is connected to perceived behavioural control (Ajzen, 1991).

This perception of control is related to factors that may facilitate or impede the performance of the behaviour and whether the individual perceives the behaviour as easy or difficult to perform (Ajzen, 1991). The Theory of Planned Behaviour shows that behavioural intention, which predicts whether an individual will perform a behaviour can be predicted by attitudes, the subjective norm, and perceived behavioural control. In brief, the more favourable a person's attitude and perceived behavioural control about a behaviour and the more favourable the subjective norm, the stronger the person's intention will be to perform the behaviour; the stronger the person's intention, the more likely he or she will be to perform the behaviour (Ajzen, 1991).

The Theory of Planned Behavior (TPB) explains that teachers' use of test blueprints in Cape Coast, Ghana, can be understood through three main factors: their attitudes toward blueprints, social pressure from peers and authorities, and their perceived control over using them (Ajzen, 1991). Teachers' attitudes would depend on their belief in the blueprint's benefits, while subjective norms would be shaped by expectations from colleagues and

educational authorities. Perceived behavioral control relates to whether teachers feel they have the necessary skills and resources to use blueprints effectively. Interventions can focus on improving these three factors to encourage greater use of test blueprints in schools (Ajzen, 1991).

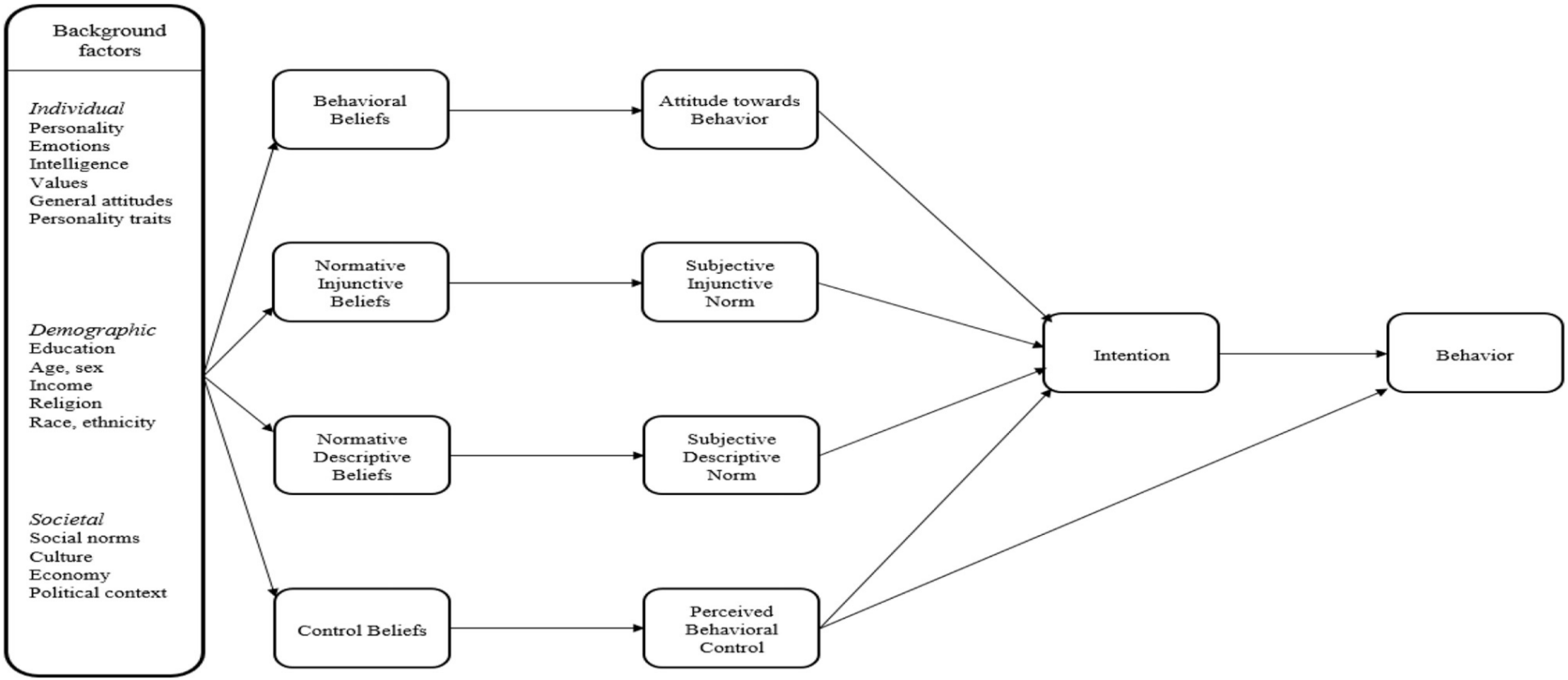

Figure 1: Model of Theory of Planned Behaviour.

The Theory of Planned Behaviour Model

According to the TPB, intentions to perform eco-friendly behaviours and perceived behavioural control are the immediate antecedents of Pro-Environmental Behaviour (PEB). Perceived control can have a direct effect on behavior1, and it can also influence behaviour indirectly by its effect on intentions. The TPB also postulates that one's intention to adopt PEB should increase to the extent that one holds favourable attitudes towards PEB, thinks that significant others support these behaviours (that is the injunctive norm) or adopt PEB themselves (that is the descriptive norm), and perceives to have control over these behaviours.

Attitudes towards a behaviour are assumed to be based on behavioural beliefs, which are a person's beliefs about the likely consequences of performing the behaviour (Ajzen, 2005). When high-school students believe that adopting environmentally sustainable behaviours mainly produces positive outcomes, their attitude towards these behaviours will be favourable. Conversely, if they associate PEB with mainly negative consequences, their attitude will be unfavourable. Similarly, injunctive norms are based on people's perception of what important referents (parents, teacher, close friends) think they ought to do, while descriptive norms are based on beliefs concerning these significant referents' own behaviour (Rivis & Sheeran, 2003). In their 2010 monograph, Fishbein and Ajzen formally added descriptive norms to injunctive norms as a second component of subjective norms. The influence of descriptive norms on behaviour has been studied extensively by Cialdini and his associates (Cialdini, 2001; Kallgren, Reno, &

Cialdini, 2000) and incorporated into many studies that use TPB as a guiding framework (Rivis & Sheeran, 2003).

It was also integrated in studies interested in understanding environmental behaviours (Heath & Gifford, 2002; Nigbur, Lyons, & Uzzell, 2010; Onwezen, Bartels, & Antonides, 2014). Finally, perceived control is a result of control beliefs, which are perceptions about the presence of factors that facilitate or impede the adoption of a given behaviour.

The TPB also proposes that a multitude of background factors (e.g., age, sex, ethnicity, socioeconomic status, education, personality, and past experiences) can potentially influence the beliefs people hold. Thus, to gain further insight into the underlying reasons for the adoption of PEB among young people, we examined the potential impact of two background factors: sex and empathic concern. It seems likely that people who vary in terms of sex and empathic concern may have been exposed to different experiences and thus may have formed different PEB-relevant beliefs (Fishbein & Ajzen, 2010). These differences would be expected to influence their pro-environmental intentions and actions.

The Main Variables in the Theory of Plan Behaviour

Perceived behavioural control

Ajzen (1988) defines behavioural control as follows: this factor refresh the perceived ease or difficulty performing the behaviour, and it assume to reflect past experience as well as anticipates impediment and obstacles, which means that these factors reflect the perceptions would be difficult or not perform an action and assumed a reflection of past experience and anticipation of obstacles. Behaviour control is specified in the form of self-efficacy is a

condition where people believe that a behaviour is easy or difficult to do, Cruz et al. (2015).

Attitude

Attitude is a readiness to react to certain objects in the environment as an appreciation of the object (Efendi & Makhfudli, 2009). Attitude is the reaction of an individual to an object in the environment; in the study of these objects is entrepreneurship (Cruz et al., 2015).

Subjective norm

Subjective norm is the view of an individual who influenced one another is important. According to Wedayanti and Giantari (2016), subjective norms are the views that are considered important by individuals who advise the individual to perform or not perform certain behaviours and motivation is accompanied by a willingness to do or not do something that is considered important. Subjective social norms refer to a person's beliefs on how and what to think about people who are considered important and are motivated to follow that thought (Maulana, 2009). A subjective norm is a norm that departs from the inner element or the human conscience (Sumaryono, 2012).

Philosophical foundation of testing

Philosophically, the act of intellectual assessment is a quest for truth and reality (Flanagan, Genshaft & Harrison, 1997). According to Flanagan et al. (1997), the act of intellectual assessment is a means by which the examiner's hypotheses are identified and then tested within the context of a scientific method. In substantiating the assertion above, Flanagan et al. (1997) further stated that "in the spirit of a true Cartesian philosophy, if the method of

inquiry can be made correct, truth will reveal itself; in this case, the true pattern of an individual underlying skills and abilities" (p. 8).

The attempts to measure human cognitive abilities can be traced to a time early in the history of imperial China (Cunningham, 1986). According to Flanagan et al. (1997), Anastasi (1982) and Cunningham (1986), the Chinese developed a standardised civil service testing programmed as far back as 2200 B.C because they had no hereditary aristocracy, and this programme lasted for about 4000 years. Cunningham (1986) continued by noting that the Chinese method of selecting government employees was used as a basis for the establishment of the Indian civil service.

It was, however, discontinued when Alfred Binet displayed his scale for measuring intelligence in 1905. Researchers have pointed out that the tests covered the examinee's knowledge of civil law, military affairs, agriculture, revenue and geography and those civil servants were tested every three years for initial appointments and continuance in employment (Anastasi, 1982; Cunningham, 1986). Similarly, In the USA, testing began in the later part of the 19th century (Cunningham, 1986; Flanagan et al., 1997). Dubois pointed out that following the successful use in England of the Chinese method of selecting government employees, the method was adopted in the USA. He pointed out that the first civil service was established in 1883.

On the issue of whether test results represent the reality of an individual's underlying abilities, the work and influence of such prominent classical philosophers as Socrates, Plato and Aristotle are most profound. For instance, for Plato, authentic knowledge is only made possible through a systematic, coherent account of reality in which each conclusion is rationally

justified, and what is particular, observable, and concrete must be understood in terms of higher-level principles that are comprehensive, theoretical and abstract (Flanagan et al., 1997, p.19).

History of Testing

Those who do not take cues from history are often compelled to repeat the mistakes of the past. Consequently, in reviewing literature on teachers' development and use of test blueprints in their assessment practices in schools, it is appropriate to look back on some of the forces that have shaped the development of these measures of intellectual ability with the view to understanding why they have the form and substance they do have (Rodriguez, 2004).

The historical development of educational measurement dates back to the 1840s. For instance, the rules for conducting written exams, establishment of examination boards, practical mental tests, identification of factors of intelligence, use of objective classroom tests, scholastic aptitude tests, the development of test scoring machine, taxonomy of educational objectives are some of the reforms up to 1960s (Smith, 2005). The development of academic tests was pioneered in Britain, particularly at the University of London. Under its initial stage, testing and awarding degrees were recognized as a legitimate basis for decision-making (Ebel & Frisbie, 1991).

Formal testing in schools (paper and pencil tests) began with the introduction of paper in the 12th century (Cunningham, 1986). According to Cunningham (1986), assessment by means of written tests was first used by the Jesuits at St Ignatio. He noted that the development of academic tests was pioneered in Britain, particularly in the University of London. Under its initial

charter, testing and awarding of degrees were recognised as a legitimate basis for decision making. It is worth noting however, that, prior to this period, academic testing (oral testing) in schools had already begun. As stated by DuBois (cited in Anastasi, 1982) among the ancient Greeks, testing was an established adjunct to the educational process. Tests were used to assess the physical as well as intellectual skills.

Anastasi (1982) pointed out that the Socratic method of teaching, with its interweaving of testing and teaching, has much in common with today's programmed learning. Test development, like many other aspects within psychology and education, is a product of many contributors and disciplines throughout history. Notable among the early thinkers were the following personalities. Charles Darwin (1809 − 1882), a trained physician and later a clergyman, published the book - The Origin of the Species in 1859. He was an important factor in the increased acceptance of individual differences (Cunningham, 1986; Flanagan et al., 1997).

British mathematician and physicist Sir Francis Galton (1822-1911) are generally recognised as the founder of formal testing. Galton's most important contributions were his emphasis on individual differences, which is the corner stone of the field of psychological measurement, his initial attempts to establish norms and standard scores, and his laying of the foundation for the development of the correlation coefficient. Credit for coining the term "mental test" in 1890, however, is given to the American psychologist, James Mckeen Cattel (1860−1944). Galton and Cattel worked together to propel the field of mental testing forward in large and definable units (Anastasi, 1982; Cunningham, 1986; Flanagan et al., 1997).

A mathematician and a statistician of the first order, Karl Pearson (1857−1936), who was a student of Galton, needs to be acknowledged. He derived the mathematical underpinnings of regression (then referred to as reversion), correlation, and covariation of observable phenomena in a manner that allowed Galton to make inferences about unobservable phenomena (Anastasi, 1982; Cunningham, 1986; Flanagan et al., 1997). It is worthy noting that the correlation coefficient of Galton and Pearson continues to be used as the basis for reliability and validity coefficients in educational and psychological testing today.

Binet (1857-1911) a French psychologist, developed the first intelligence test that measured high-level mental functioning called the Binet-Simon test in 1905 together with Theodore Simon (1872-1961). Later, he developed two additional scales, the 1908 and 1911 scales (Binet & Simon, 1948; Cunningham, 1986; Amedahe, 1989).

Louis Terman is credited with the modification of the Binet-Simon tests in 1916 and coming out with the Stanford-Binet test, which was the first well-standardised and carefully developed intelligence test. With the ongoing development in the field of measurement at the time, the use of the Stanford-Binet test as an individual intelligence test declined after the introduction of the Wechsler tests developed by David Wechsler (1896-1981) in 1939 (Cunningham, 1986).

During World War I, Arthur Otis (1886-1964), under the tutorship of Louis Terman in 1917, developed the first group tests of intelligence, which were used to screen recruits for intellectual fitness. Arthur Otis is further credited with the design and introduction of multiple-choice and other

objective-test items (Anastasi, 1982; Cunningham, 1986; Flanagan et al., 1997). It is worth noting that achievement testing in Ghanaian schools today involves the use of multiple-choice and other objective-type tests.

Discoveries, innovations and development continued in the field of educational measurement over the years, and by 1945, many of the theories and principles used in educational testing today had been developed (Amedahe, 1989). Rudman, Mehrens and Wanous (1983) noted that few studies of teacher testing practices existed. Amedahe (1989) indicated that "research work on classroom testing in Ghana was probably non-existent" (p. 15). According to Amedahe (1989), "teaching and learning can be likened to two sides of a coin. Without testing, the teacher would not be in a position to know whether the objectives set out to be achieved at the outset have been attained" (p. 1). Tests constitute an integral part of the assessment process in education. The historical development of the field of measurement in education is closely related to similar developments in psychology.

Conceptual Review

Concept of Assessment

The term assessment means different things to different people. Nitko (2001) cites the American Federation of Teachers, the National Council on Measurement in Education and the National Education Association, who see assessment as a method of obtaining information that is used to decide on students' curriculum and programme and national policy. From this, assessment can be viewed as a means of collecting information about students in order to help in making decisions concerning the students' wellbeing in terms of the curriculum and programme and national policies on education.

Miller, Mclntire and Lovler (2011) define assessment as "the systematic collection, review and use of information about educational programmes undertaken for the purpose of improving learning and development" (p. 4). They are more specific in the use of assessment results to improve learning and development. This implies that the information collected from assessment should be that which could be used by tutors to help students enhance their academic performance.

Anhwere (2009) on the other hand, viewed assessment as the estimation of the relative magnitude, importance or value of an individual's work or performance observed. According to them, assessment is not just the collection of information but looking at how valuable the information that has been collected is the focus of assessment. Teachers usually do this as they observe their students at work in school and through the conduct of various tests and other assignments periodically. In assessment, teachers communicate with students through various means in order to gather meaningful information to make decisions concerning different aspects of students.

Tamakloe, Amedahe and Atta (2006) maintained that assessment occurs when one person, through some kind of interaction with another, obtains and interprets information about that other person in terms of his knowledge and understanding or abilities or attitudes (p. 176). Airasian (1991) also sees assessment to be a process whereby information about a student is collected, interpreted and synthesized to assist in decision-making. McMillan (2001) notes that there are a number of "essential" assessment concepts that teachers need to know about to make valid decisions about students; various means should be used to obtain the information so that any bias will be

removed. The information gathered could be from different sources in order to make the decision about the student. Linn and Grolund (1995) supported McMillan's (2001) assertion that assessment should be used to gather information about student learning.

The New Assessment System in Ghana

Measurement and assessment approaches that are put into practice in new curriculums give different tasks and responsibilities to teachers (Gelbal & Kelecioğlu, 2007). Therefore, in this research, the aim was to identify the classroom assessment practices used by teachers. Considering that the classroom assessment practices applied by teachers reflect their educational processes, the type of assessment, frequency in which it is carried out and the student feedback the assessment provides are important in terms of understanding how classroom assessment practices are progressing (Brookhart, 1997). For this reason, it is aimed to investigate how teachers are implementing their classroom assessment practices, whether these assessment practices are being carried out in accordance with the current educational paradigms and the factors that affect these practices.

School-Based Assessment (SBA) was introduced into the school system in September 2008. SBA which replaced the continuous assessment, is a very effective system for teaching and learning if carried out properly. According to the CRDD (2007), the new SBA system is designed to provide schools with an internal assessment system that will help schools to achieve the following purposes:

1. Standardize the practice of internal school-based assessment in all schools in the country.

2. Provide reduced assessment tasks for each of the primary school subjects.
3. Provide teachers with guidelines for constructing assessment items/questions and other assessment tasks.
4. Introduce standards of achievement in each subject and in each class of the school system.
5. Provide guidance in marking and grading of test items/questions and other assessment tasks.
6. Introduce a system of moderation that will ensure accuracy and reliability of teachers' marks.
7. Provide teachers with advice on how to conduct remedial instruction on difficult areas of the syllabus to improve pupil performance.

The previous continuous assessment begun in 1987 as a method of evaluating the progress and achievement of students in educational institutions. Continuous Assessment marks and external examination scores were used to determine the final grade of students at the end of their programmes (BECE, WASSCE). This mode of assessment was abandoned because, as stated by the GES Assessment Services Unit (ASU, 2008), the work involved in computing (CA) marks appears cumbersome for 50 teachers they experience difficulty in the large number of assessments pupils have to go through and the larger number of mark recordings they have to make. Also, it has a limited number of project works to make pupils apply their knowledge to produce something practical.

The continuous assessment, therefore, was replaced due to cumbersome assessment tasks and lack of uniformity and accuracy of assessment tasks in schools across the country (CRDD, 2012). Through the introduction of the SBA, "projects" have been made the central part of learning in Ghanaian basic schools because it is through school projects that students and pupils will have the opportunity to apply their learning in practical terms to develop new ideas, new processes and new products and thereby, acquire the critical thinking skills and habits that will help them in their future careers and their personal lives (CRDD, 2012).

The new SBA consists of 12 assessments a year instead of the 33 assessments in the previous continuous assessment system. This means a reduction of 64% of the work load compared to the previous continuous assessment system. It has also been recommended that a pupil select one project topic for each term. Teams of pupils should undertake projects for the second term as Group Projects to encourage pupils to apply knowledge and skills acquired in the term to write an analytic or investigative paper in Natural Science (CRDD, 2007; xiv).

Kudjordji (2021) reported that little attention has been given to the implementation of SBA in Ghanaian basic schools. Oduro (2015) found that primary school teachers were still using the old continuous assessment format instead of the SBA while some teachers were not aware of SBA and still practiced the old system of continuous assessment (CA). She revealed that basic school teachers had not been trained for the implementation of SBA. "Teachers' lack of engagement in new assessment practices and the lack of

training could be linked to the disconnection 51 between them and the ASU" (Oduro, 2015, p.149).

Similarly, Appiah (2015) found that just a handful of science teachers assessed their pupils through project work and used the SBA to improve pupils' learning by encouraging them to produce essays, poems, artistic work and other items of learning using appropriate process skills, analyzing information and other forms of data accurately and make generalizations and conclusions. Such a situation has implications for decision-makers such as the ASU and teachers who are tasked to conduct an assessment using the SBA.

Assessment Tasks and Strategies

Assessment is a process of collecting and evaluating information about learners and using the information to make decisions to improve their learning. In this curriculum, it is suggested that assessment is used to promote learning. Its purpose is to identify the strengths and weaknesses of learners to enable teachers to ascertain their learner's response to instruction. Assessment in the Ghanaian curriculum is both formative and summative. Assessment "for", "as" and "of" learning, Formative assessment is viewed in terms of Assessment as learning and Assessment for learning.

Assessment as learning: Assessment as learning relates to engaging learners to reflect on the expectations of their learning. Information that learners provide the teacher forms the basis for refining teaching-learning strategies. Learners are assisted to play their roles and to take responsibility for their learning to improve performance. Learners are assisted to set their own goals and monitor their progress.

Assessment for learning: It is an approach used to monitor a learner's progress and achievement. This occurs throughout the learning process. The teacher employs assessment for learning to seek and interpret evidence, which serves NaCCA -Teacher Resource Pack 28 as timely feedback to refine their teaching strategies and improve learners' performance. Learners become actively involved in the learning process and gain confidence in what they are expected to learn.

Assessment of learning: This is a summative assessment. It describes the level learners have attained in learning and what they know and can do over some time. The emphasis is to evaluate the learner's cumulative progress and achievement.

Fox and Soller (2001) in their study on authentic assessment strategies and tools employed by teachers in Malawi, found out that students in lower classes prefer working collaboratively using projects, computer-based simulation tasks, storytelling and demonstrations, while students in upper classes also demonstrated high-level performance in working competitively using writing samples, performance products, and graphic organizers. It was also revealed in the study that education systems that emphasize tests and examinations put some students at a disadvantage (Mbano, 2013; Nampota & Wella, 2014).

Fook and Sidhu (2010) conducted a study in Malaysia to investigate the different types of authentic assessments used in higher education in Malaysia. The study employed a qualitative research method and involved the use of instruments such as interviews, document analysis and classroom observations to collect relevant data in the classroom.

The researchers identified that different types of authentic assessments were used. The study revealed that teachers employed the following assessment tools: portfolio (10%), article review (10%), performance product (20%), project (40%) and test (20%). The findings indicated that alternative and authentic assessments have more acceptance from students and should, therefore, be viewed as an alternative to traditional standardized assessment. The study again revealed that assessment practices in some subject areas like Mathematics, Science and Social Studies indicated favourable emphasis being given to formative assessment because 80% of the total marks have been allocated to on-going assessment and 20% was for the test. Moreover, the students interviewed also agreed that the project and portfolio assignment given were, to a great extent, authentic tasks that they could relate to their future workplace.

Beckmann, Senk and Thompson (2013) studied the assessment and grading practices of 19 high school mathematics teachers in the United States. Their study revealed that the most frequently used assessment tools were tests and quizzes, and these determined about 77% of students' grades. Twelve of the nineteen teachers used other forms of assessment, such as written projects, experiments, demonstrations or interviews with students. The study also revealed that teachers recorded a very high level of student participation in the written projects, experiments and demonstrations.

Self-Assessment

Self-assessment is a valuable tool for learning and measurement. For example, when students are engaged in assessing their work, they try to learn the criteria for high-quality performance, and they experience a willingness to

apply those criteria (Herrera et al., 2007). However, Black and Wiliam (1998) remain concerned about student readiness to self-assess or evaluate peers. They propose that once students acquire a clear picture of the outcome or purpose, "they become more committed and more effective as learners: their assessment becomes an object discussion with their teachers and with one another" (p.7).

However, agreements exist among educators in which they recognize the value of self and peer-assessment, which helps students exert control over their learning (Chappuis & Stiggins 2004). Initially, some teachers provide rubrics for students so that they can assess their progress. The rubrics incorporate the criteria that provide the opportunity for students to reflect on the extent to which they have made progress. Atkin, Black, and Coffey (2001) illustrate a feature of alternative assessment that asks learners to ask three questions as they assess themselves: "where am I trying to go? where am I now? and how do I close the gap?" (Chappuis & Stiggins, 2004, p.43).

Peer-Assessment

Similar to self-assessment, educators consider peer-assessment advantageous, as it furthers opportunities for students to identify targeted learning goals (Herrera et al., 2007; Chappuis & Stiggins, 2004). In peer-assessment, students often assess other students' work compared to the criteria developed by the instructor or both students and the class instructor. An important aspect of peer assessment is that it engages students in dialogue with their classmates, commenting on each others work rather than a one-way feedback system from instructor to student.

To enrich peer-assessment and use it productively, Black and Wiliam (1998) propose that students be trained to assess their peers purposefully, with the goal of improving learning. As students comment on their peers' work, they use informal language which is understandable to them. In addition, according to Herrera et al. (2007), given the concept of peer-assessment, students compare other students' work to the accepted criteria, which "enables them to discern outstanding elements of both their own and their classmate's performances and products" (p. 34).

Performance-Based Assessments

Linn and Miller (2005) explain performance-based assessment as "snapshots of students learning in time, which provide a longer exposure with panoramic lens, or real-time video" (p.7). The idea that knowledge is constructed during the learning process and that a student discovers knowledge for him/herself rather than receiving knowledge inspires the notion of performance-based assessment. This approach facilitates both the way students take information and the way they store and apply this information to deal with novel situations (Herrera et al., 2007). This means that, in addition to eliciting constructed responses, performance-based assessment incorporates authentic tasks that need a higher level of thinking and application of skills. Herrera et al. (2007) interpret performance-based assessment as an opportunity that taps into the depth and breadth of students' learning (p. 28).

Co-operative Group Assessment

The concept of group work or team work varies, depending on the context. In the West, particularly in the United States, an individual's success attracts more attention than the accomplishments of team work, such as in

sports (Herrera et al., 2007). However, recent recognition of collaborative or team work is increasing among educators, realizing that the strengths and skills of some students are well-defined when they are engaged in group activities such as cooperative learning or assessment. Herrera et al. (2007) observe that collaborative or group activities often culminate in projects or experiments that may or may not require oral or written reporting (p. 38).

Slavin (2006) argues that planning for group assessment requires educators to consider both group efforts and individual liability. Herrera et al. (2007) note the complexity of assessing a cooperative group activity, in particular distinguishing an individual student's effort and the contribution he or she makes performing a group activity or project. Teachers often document the thoughts and actions of individual students in the process of performing an activity as they learn from cooperative activities and the dialogue that occurs among the students.

Portfolios

Portfolio development is not a new concept in the history of education. According to Wiliam and Thompson (2008), gathering purposeful examples of students' work that demonstrate their effort, progress, and level of understanding over a while compose the main features of a portfolio. However, what has changed through the course of time is the format and content, making portfolios meaningful and purposeful. Wiggins and McTighe (2007) maintain that unlike the traditional forms of assessment that take a snapshot of students at one point in time, portfolios function like a photo album containing a variety of photos taken at different times and different contexts (p. 85). Similarly, Herrera et al. (2007) assert that the content of

portfolios, which incorporate a collection of student work, some indications that how student rated him/herself on the process and product included and the pieces of evidence of how those products met the established criteria (p. 29).

Investigators emphasize the importance of considering the intended purposes for developing portfolios. By establishing the targets for a portfolio, an instructor can decide what kind of student work to incorporate, who should manage it, how often to review it, and more (Wiggins & McTighe, 2007). The instructors regularly assign students to include writing samples, reflections, drawings, reading logs, student self-evaluation, progress notes, visuals and audio clips, among many others. According to Herrera et al. (2007), the common forms of portfolios contain the best examples of students' work that illustrate their learning and progress.

In addition, portfolios are considered a good alternative to traditional forms of assessment because they incorporate the perspective of students and teachers about learning and assessment. Another significance of a portfolio is that unlike the traditional synoptic evaluations, such as the final exam or any standardized test that happens once, portfolios provide a longitudinal observation of student progress as they show incremental gains in knowledge, skills, and proficiencies (Herrera et al., 2007). Portfolios are also authentic because classroom activities drive them; in most cases, they reflect "in-process adaptations to instructional methods and assessment," and they assess learning that motivates students (Herrera et al., 2007, p. 32).

Authentic Assessment

Assessment is authentic when it measures products or performances that have meaning or value beyond success in school (Newman, Brandt & Wiggins, 1998, p.19). According to Newman et al., assessments that ask questions and pose problems that have real world meaning to students meet one criterion for being authentic intellectual work, but there are two others related to disciplined inquiry that are unrelated to the realism of the assessment tasks.

Wiggins (1989) was also an early proponent for the use of the term authentic to describe assessment with real-world application. According to him, "Authentic' refers to the situational or contextual realism of the proposed tasks" (Wiggins, 1998, p.20). Terwilliger (1998) expressed concerns with Wiggins, and others use of the term, viewing the label of authentic as a veiled criticism of traditional assessment approaches as somehow less authentic or inauthentic. Wiggins position is essentially that traditional assessment is not inauthentic; it is simply less direct and, probably, less meaningful to students.

Wiggins (1993) argues that traditional assessment is not faithful to the domains of performances and contexts that are most important for higher-order thinking and learning. As he used the term, authenticity is a key to fidelity. Gulikers, Bastiaens, and Kirschner (2004) define authentic assessment as an assessment requiring students to use the same competencies, or combinations of knowledge, skills, and attitudes that they need to apply in the criterion situation in professional life. (p. 69). Khaira and Yambo (2005) also argue that authentic assessments should resemble meaningful performances in

real-world contexts and should involve real-life tasks with multiple solutions for the student.

According to Khaira and Yambo (2005), research has shown that there are at least a dozen books and hundreds of journal articles on authentic assessment as an approach. They further explain that some of these works, even the books that use authentic assessment in their titles, use the term without offering a direct definition, but most do, at least, offer a set of criteria that amount to a definition. A review of those publications reveals a wide range of descriptions for the term, some of which overlap with other classroom assessment terms, such as performance-based assessment and formative assessment (Khaira & Yambo, 2005).

Assessment as Learning

Prior to standards-based assessments, assessment was a matter of norm-referenced tests that measured not against a standard but rather measured performance against a normal distribution of performance outcomes. Information from norm-referenced assessments then indicated how a single student class or group measured against others who took the same test. The problem with norm-referenced testing was that some students came equipped with more tools than others. The goal of such testing is to score above average. For standards-based assessment, the goal is to be proficient according to the criteria of the standard (Reeves, 2002a; Reeves 2002b; Conley, 2005).

All assessments of student learning serve to inform someone. Large scale assessments (such as the MAP tests) serve particular uses and provide information to specific groups of people. Likewise, school and district-wide assessments are also assessments of learning. Each of these, however, is a

summative event that, by its nature, refers to the degree of learning already accomplished. While these assessments serve their purposes, the end user of assessment information is not the student. Assessment as learning, on the other hand, is an assessment at the classroom level that is conducted throughout the learning process rather than after it. Information generated from assessment as learning is used to diagnose learner needs, plan instruction, and provide students with feedback they can use immediately to improve their work (Stiggins, Arter, Chappuis & Chappuis, 2004).

Some commentators conceptualize this kind of assessment, designed to be diagnostic and prescriptive, as inquiry. Serafini (2000) argues that assessment can be viewed through three paradigms: as measurement, as procedure and as inquiry. The assessment as a measurement paradigm sees knowledge as existing separate from the learner and places the teacher in the position of distributor of knowledge, with students as the receptacle of that knowledge. Students do not construct meaning as much as they acquire information. The acquisition of that information is what is measured. Assessment as a procedure involves teachers becoming concerned with the procedural aspects of gathering information about student learning, with the procedures involved becoming more qualitative than quantitative, such as portfolio assessments that move from one grade level to the next. The assessment as inquiry paradigm shifts the epistemological perspective from one in which knowledge is acquired to one in which knowledge is constructed.

The focal point of assessment as learning is the student. Here, the student is the primary consumer of assessment information. Stiggins (2006) argues that schools in the past have served to sort students by achievement and

that student failure was the student's problem. Now, society expects schools to produce students who can continuously learn new skills.

Students are expected to meet foundational standards in reading, writing and math (Reeves, 2004; Stiggins, 2006; Haycock, 2004; Walker-Dalhouse, 2005). Past assessment and grading practices have served to reward some students and punish others. Now assessment must help all students succeed. Assessments must provide students with the opportunity for productive responses: students must understand assessment results and know what to do next. Stiggins argues that raising standards and high-stakes testing attempt to motivate students to learn through raising anxiety (Stiggins, 2006). Brain research argues just the opposite that anxiety makes us think less clearly (Wolfe, 2006; Jensen, 1998; Stiggins, 2006). Assessment as learning argues that students learn best when they know what is expected and required for success and they understand how to close the gap between their work and the standard for success (Stiggins, 2006).

A tactic for providing students with this kind of knowledge about what is expected can be found in the use of scoring guides. Clear, accessible instructional scoring guides or rubrics can provide students with important information that can lead students to become self-regulated learners (Saddler & Andrade, 2004). Such scoring guides can serve as teaching tools as well as tools of evaluation and accountability (Andrade, 2000). Andrade and Du (2005) studied undergraduate college students' use of rubrics to guide learning. Their findings indicate that using scoring guides supported the process of formative assessment (Andrade & Du, 2005).

However, Andrade's (2005) reflection on using scoring guides in her teaching cautions that the value of employing scoring guides is dependent on the quality of the scoring guide (Andrade, 2005). Black and William (1998) reviewed studies that incorporated some kind of formative assessment in their strategies. They found that innovations that include strengthening the practice of formative assessment produce significant and often substantial learning gains (p. 142). Furthermore, since successful students already make good use of assessment (hence their success), improved formative assessment that includes frequent feedback aids low-achieving students more, thereby closing the range of achievement outcomes while raising the achievement of all students involved (Black & William, 1998).

Meisels and his colleagues (2004) examined variance in scores on the Iowa Test of Basic Skills (ITBS) of low-income, urban third and fourth-grade students. Students who had experienced a curriculum-embedded performance assessment strategy, Work Sampling System (WSS), were compared to similar students in schools that did not employ WSS. Achievement for all students was measured by the ITBS over three years. In WSS classrooms, instruction was driven by classroom assessment of student performance in terms of standards-based criteria. The researchers found that students exposed to such practices produced far higher reading scores than their demographically similar counterparts. Furthermore, gains in achievement were experienced by both high and low-achieving students in the WSS classrooms (Meisels et al., 2004).

The Meaning of a Test Blueprint

Mehrens and Lehmann (1993) explained the table of specification as a blue print of a test, the content areas to be covered, and the relative emphasis to be placed on each area and instructional objectives. Akem (2006) views the table of specifications as a guide to assist a teacher or examiner in the evaluation system. The table shows the total number of items to be allocated to each instructional objective; it also suggests what might be covered under each item, decides on what types of items to be used. In fact, the blue – print stage is the last and crucial stage in an evaluation plan since it enables the teacher to properly combine the objective and the content areas, bearing in mind the importance and the weight attached to each area.

Akem and Agbe (2003) revealed that the table of specification is an outline relating behavior to topics. By it, the teacher can determine what topics are being stressed and also assist in the preparation of testss that reflect what students have learned and also the limit and the amount of time spent on each unit.

Adeoye (2010) noted that the table of specifications enables the test developers to complete the cells in the table and decide the percentage of the total number of items that will go to each of the cells. Alade and Igbinosa (2014) stated that a table of specifications or test blueprint is a device that enables the teacher to arrive at a representative sample of the instructional objectives and the subject matter treated in the class. Thus, once the instructional objectives and the subject matter have been clearly identified, a table of specification is then prepared to link both and also indicate the number of test items to be written for each level of the objective and each

subject matter area. He concluded by instructing us how to prepare a table of specifications.

The classroom teacher will decide first on the number of test items or questions he intends to write. Once a decision has been taken on this, the teacher will proceed to prepare the table of specifications by listing the instructional objectives across the top of the table. Then, a list of the major subject matter (topics) is written down on the left side of the table with the list written; the teacher then indicates a number of test items that would be set for each level of objective and each subject matter area. At the bottom and right end of the table, the total number of questions for each subject matter and objective are indicated. But cautioned that the teacher should note that the relative emphasis that the objectives and subject matter will receive depend on the emphasis given to each of the objectives and each of the subject matter during the period of teaching and learning.

The table of specifications to Kibler (1998) is to ensure that the test items adequately sample the subject matter content and the course objectives; We need to develop a table of specifications that will provide a guide to the item construction which takes into account the relative importance of each component of the syllabus and each level of cognitive domain. Table of Specification (TOS) should be prepared before testing. The teacher should develop the table of specifications in order to have content sampling and item validity. These specifications may help the teacher to be more effective. In order words, it will help the teacher in organizing teaching and learning, assessment and evaluation, as well as all the resources he plans to achieve during the teaching and learning.

Mehrens and Lehmann (2009) identify that the "specs" can help to provide for optimal learning on the part of students and optimal teaching efficiency on the part of the teacher. Table of specification helps to improve the validity of a teacher's evaluation based on a given assessment: Validity is seen here as the degree to which the evaluations or judgments we take as teachers about our students can be trusted based on the quality of evidence we gathered (Wolming & Wikstrom, 2010). It is important to understand that validity is not a property of the test constructed but of the inference we make based on the information gathered from a test.

When we consider whether or not the grades we assign to students are accurate, we are questioning the validity of our judgment. When we ask these questions, we can look to the kind of evidence endorsed by researchers and theorists in educational measurement to support the claim we make about our students (American Psychological Association -APA, American Educational Research Association-AERA, National Council on Measurement in Education -NCME, 2014).

A test blueprint is a list of key components defining your test; it includes:

The purpose of the test: It might be something simple, such as assessing knowledge prior to instruction to get a baseline of what students know before taking a course. Alternatively, the test purpose might be more complex, such as assessing retention of material learned across several organ-system courses to determine eligibility for advancement.

The content framework: Start with the schemas or frameworks commonly used to organize and consolidate medical knowledge. For example, basic

science (e.g., biochemistry, genetics) or clinical science (e.g., surgery, pediatrics) disciplines are common schemas.

The testing time: This includes an amount of testing time available and the need for breaks, as well as other logistical issues related to the test administration. **The content weighting** (aka, number of items per content area): The number of questions per topic category should reflect the importance of the topic; that is, they should correlate with the amount of time spent on that topic in the course. For example, if there are 20 one-hour lectures, there may be 10 questions from each hour of lecture or associated with each hour of expected study. The number of questions per category can be adjusted up or down to better balance the overall test content and represent the importance of each lecture, as well as the total lecture time.

The item formats (e.g., multiple choice questions (MCQ), or the essay type questions): The item formats should always be appropriate for the purpose of the assessment.

Benefits of Test Blueprints

A table of specification (TOS) is a chart that professional developers of achievement and ability test often use in item writing. According to Gregory (2006). The chart helps the item writer to ensure that the instrument taps a desired mixture of cognitive processes and content domains. TOS provides a two–way chart to help teachers relate their instructional objectives, the Cognitive level of instruction and the amount of the tests that should assess each objective (Notar, Zuelke, Wilson & Yunker, 2014).

The table serves to clearly define the scope and focus of the test. It ensures that the teachers include items that tap different levels of cognitive

complexity when measuring students' achievement. Kubiszyn and Borich (2003), suggested that teachers should use a table of specifications so that they will not forget the details. Teachers can be assured that they are measuring students learning across a wide range of content and reading as well as cognitive processes requiring higher-order thinking. By providing a table of specifications prior to the items writing stage, the test developer can guarantee that the resulting instrument contains a proper balance of topical coverage and taps a desired range of cognitive skills.

The use of a test blueprint or table of specifications according to Akem and Agbe (2003) and Mehrens and Lehmann (2001) will help to ensure that: Teachers are able to determine what topic is being stressed and also assist in the preparation of tests that reflect what students have learnt and also limit the amount of time spent on each unit. No important objective or content area will be advertently omitted. The table of specifications can assist immensely in the preparation of test items, the production of valid and robust tests, the classification of objectives for both teacher and students and in assisting the teacher in selecting the most appropriate teaching strategy. Only those aims and objectives actually involved in the instructional process will be assessed, and each objective will receive a proportional emphasis on the test in relation to the emphasis placed on that objective by the teacher.

Test blueprints will help ensure that your tests: a. Appropriately assess the instructional objectives of the course b. Appropriately reflect key course goals and objectives to be achieved. c. Include the appropriate item formats for the skills being assessed. Test blueprints can be used for additional purposes besides test construction: d. Demonstrate to students the topics you value, and

serve as a study guide for them e. Facilitate learning by providing a framework or mental schema for students f. Ensure consistent coverage of exam content from year to year. Communicate course expectations to stakeholders (e.g., trainees, learners, other faculty, administration).

Examples of test blueprint format

Table 1: General format of test blueprint on four different topics for forty multiple choice questions for 40 marks based on the lower order of thinking skills on Bloom's Taxonomy.

Content	Knowledge (Number of items)	Understanding (Number of items)	Application (Number of items)	Total Marks
Topic:1	3 items	2 items	2 items	7marks
2	5 items	4 items		9marks
3	7 items	3 items	3 items	13marks
4	5 items	4 items	2 items	11marks
Total Marks	20mrks	13marks	7marks	**40marks**

Source: Author's Construct, 2023

Each cell contains the number of items to be constructed. This depends on the relative emphasis on topics and behaviors that might be indicated by the instructional objective during teaching and learning.

Table 2: Table of specification for test items to be scored 100% based on the lower order of thinking skills on Bloom's Taxonomy.

Content (Topics)	Knowledge (Percentage to be awarded)	Understanding (Percentage to be awarded)	Application (Percentage to be awarded)	Total Percentage
Objectives :1	7.5%	5%	5%	17.5%
2	12.5%	10%		22.5%
3	17.5%	7.5%	7.5%	32.5%
4	12.5%	10%	5%	27.5%
Total Percentage	50%	32.5%	17.5%	**100%**

Source: Author's Construct, 2023

Percentage to be awarded to the number of test item constructed in each cell is indicated. This depends on the relative emphasis on topics and behaviors that might be indicated by the instructional objective during teaching and learning.

However, with the above table of specification, the teacher, assessor, examiner has the opportunity to decide the type of test item for each cell. That is:

1) The multiple-choice type of test items
2) The True or False type of test items
3) Matching type of test items
4) Fill in type of test items
5) Essay type of test items

Table 3: Table of specification based on the six categories of the revised edition of the Bloom's Taxonomy.

Content (Topics)	Remembering	Understanding	Applying	Analysing	Evaluating	Creating	Total
Objectives:1							
2							
3							
4							
Total							

Source: Author's Construct, 2023

The six categories on both the old and the revised edition of the Bloom's Taxonomy can be applied when designing table of specification or test blueprint to use in the classroom to assess learners' thinking skills. This is because teachers are expecting leaners to think through both the lower order thinking categories or the higher order thinking skills categories on the Bloom's Taxonomy.

The Concept of Classroom Achievement Tests

Classroom achievement exams often consist of examinations that are created by teachers (McDaniel, 1994). Teachers create these assessments to evaluate the level of knowledge acquired by students or their achievement at the conclusion of a course module, semester, or academic year (Amedahe, 1989). Mehrens and Lehmann (1991) state that teacher-made examinations often assess knowledge in a particular topic within a certain class, form, or grade level. The prevalence of teacher-created assessments in all educational environments is supported by the findings of studies conducted by Herman and Dorr-Bremme and Stiggins and Bridgeford (as cited in Mehrens & Lehmann, 2009). Despite the growing utilisation of portfolios and performance tests to evaluate student advancement, teacher-made assessments remain the primary method for assessing student progress in schools.

The primary objective of teacher-created assessments has been defined by specialists in the field of measurement (Ebel & Frisbie, 1991; Etsey, 2004; Gronlund, 2012; Mehrens & Lehmann, 2009). All these authorities concur that the primary objective of a teacher-created assessment is to acquire valid, reliable, and valuable data regarding students' performance, thereby aiding in the assessment of educational progress and accomplishments for the overall enhancement of classroom instruction and learning.

Teacher-created assessments may be categorised in several ways. Mehrens and Lehmann (2009) propose a categorization system that distinguishes between two types of item formats: essay-type and objective-type. Tests can be classified based on the type of stimulus material used to present them to students, either verbal or non-verbal. Additionally, tests can be classified based on their purposes and the use of the test results. This includes

criterion-referenced versus norm-referenced tests, achievement versus performance tests, and formative versus summative tests. The most widely accepted categorization of teacher-made tests among testing professionals is based on the kind of item format utilised. This classification categorises tests into objective-type tests and essay-type exams (Cunningham, 1986; Etsey, 2004; Gronlund, 2012; Rodriguez, 2004). The experts in testing have argued that essay-type exams may be either extended or limited response types, while objective-type examinations can be in the form of short-answer, true-false, matching, or multiple-choice.

According to Etsey (2012), an accomplishment exam is a tool used to assess the level of current knowledge and abilities. During accomplishment testing, individuals are provided with the chance to showcase their "gained knowledge and abilities in certain learning scenarios" (p. 41). There are two primary categories of accomplishment exams, as shown by a thorough examination of the literature. These assessments are created by teachers and are sometimes referred to as external tests (Nitko, 2001). Teacher-made exams refer to the evaluations conducted by teachers to assess students' achievement, knowledge, and comprehension. Teachers design these assessments to evaluate the extent of knowledge acquisition achieved by pupils (Agu, Onyekuba & Anyichie, 2013).

External tests or "extra-classroom assessments" (Nitko, 2001, p. 43), on the other hand, include assessment instruments that are developed and/or graded by people who are not associated with the schools providing the students' learning (Lissitz & Schafer, 2002). External tests are often developed by commercial test publishers, ministries of education, and local school authorities (Reeves, 2003). As stated by the National Association of School

Psychologists (NASP, 2002), external tests are typically required by the fundamental elements of standard-based reform. These elements encompass (1) the establishment of content and performance standards for all students, (2) the creation of instruments to assess the progress of all students in relation to these standards, and (3) the implementation of accountability systems that demand ongoing enhancement of student achievement. External assessments might manifest as supplementary materials in textbooks, evaluative surveys, and compulsory examinations (Munson & Parton, 2013).

Construction of Classroom Achievement Tests

The fundamental concepts for the design of teacher-created assessments have been developed throughout time by several specialists in educational measurement (Amedahe, 1989). While many test building concepts are universally applicable to every sort of test, others are exclusively relevant to the specific type of test being developed. The researcher determined that the most complete and practical test building principles for classroom testing were those proposed by Tamakloe, Atta, and Amedahe (2006) and Etsey (2004), as stated in the accessible literature. There are eight steps. The procedure consists of the following steps: a) establish the objective of the test, b) choose the appropriate item format, c) identify the content to be assessed, d) compose the individual items, e) assess the items for quality, f) create the scoring key, g) formulate clear instructions, and h) evaluate the overall effectiveness of the test.

Gronlund (2012) asserts that meticulous preparation is crucial for achieving successful results in testing for accomplishments (p. 15). The determination of the test's purpose must take place at the planning stage. As previously shown in the literature, tests may serve many functions. It should

be emphasised that different types of tests usually need adjustments in the test design, which in turn defines the appropriate item format to be utilised.

In the planning stage, the second phase involves deciding on the appropriate item format to be used. As previously mentioned in the literature, the two most prevalent item styles used in classroom success assessment are essays and objective questions. Etsey (2004) suggests that there are instances when it is essential to use many item formats within a single exam. This is due to the fact that, depending on the specific objective of the test, it is not possible to rely just on one item format to assess all the different learning outcomes. As stated by Mehrens and Lehmann (1991), the selection of a suitable item format relies on various factors including the test's objective, the time allocated for test preparation and scoring, the number of students to be tested, the specific skills to be assessed, the desired level of difficulty, the available resources for test reproduction, the age of the students, and the teachers' proficiency in crafting different item types.

In the planning stage, the ultimate phase involves ascertaining the specific elements that are to be subjected to testing or measurement. Etsey (2005) suggests that the instructor should identify the specific chapters or units of the course material that the exam should focus on, as well as the specific knowledge, abilities, or attitudes that will be assessed. Instructional goals must be clearly established in relation to student behaviours and aligned with the emphasised concepts taught in class. A test plan consisting of a tabular representation of requirements should be created. The table of requirements aligns the course material with the instructional goals (Etsey, 2005). The specification table is used to prevent overlap in test item construction, determine the weighting of learning outcomes in relation to content areas, and

ensure fairness to all aspects of the course. This helps to guarantee the content validity of the test.

Principles of Constructing Classroom or Teacher-Made Tests

Evaluation is of utmost importance in educational contexts. Test items of high calibre and excellence are not only developed by test builders or specialists. Proper and thorough preparation is necessary to ensure that the instructional goals, teaching approach, textual content, and evaluating processes are all interconnected. It is ideal for each exam to undergo critical assessment by other instructors in order to minimise the shortcomings discovered by an expert. Insufficient and meticulous preparation will likely result in a subpar exam (Tinkelman, 1971). According to Tinkelman "at the very least, inattention to planning can lead to waste and to delay due to failure to coordinate properly the various phrases of test construction" (p. 46).

Mehrens and Lehmann (2009) identified the following phases and processes as crucial for developing a classroom or teacher-made test: Provide a detailed description of the course or unit material. Enumerate the primary course or unit goals. Specify each aim in relation to the observable actions and conduct of the pupils. Abandon unattainable goals, Create a comprehensive list of specs. Determine the specific structure of the item and create test items that align with the instructional goals.

Adamolekun (2012) emphasised that while creating classroom or instructor-made tests, it is important for the teacher to take into account the following factors, in addition to the fundamental principles of test construction: Determine the objective of the exam, namely the desired outcome that the instructor aims to accomplish via the test. Choose the test item type that will most effectively assess the learning result. Acquire a

sample of student conduct that the instructor wishes to examine, particularly in the emotional domain. This includes understanding how students react to classroom activities, their level of engagement, their value system, and their ability to organise and characterise information based on their values. Create test items that are appropriately challenging. Ultimately, endeavour to remove any irrelevant elements (Tamakloe, 2006).

Classroom achievement exams often consist of examinations that are created by teachers (McDaniel, 1994). Teachers design these assessments to measure the level of knowledge acquired by students or their achievement at the conclusion of a course unit, term, or academic year (Tom & Gary, 2003). Mehrens and Lehmann (2009) state that teacher-made assessments often assess proficiency in a particular topic within a certain class or grade level. The prevalence of teacher-created assessments in all educational environments is supported by the findings of studies conducted by Herman, Dorr-Bremme, Stiggins, and Bridgeford (as cited in Mehrens & Lehmann, 2009). Despite the growing utilisation of portfolios and performance tests to evaluate student advancement, teacher-made tests remain the primary method for assessing student progress in schools.

The primary objective of teacher-created assessments has been defined by specialists in the field of measurement (Etsey, 2004; Gronlund, 2012; Mehrens & Lehmann, 2009). All of these authorities concur that the primary objective of a teacher-created assessment is to acquire valid, reliable, and valuable data regarding students' performance, thereby aiding in the evaluation of educational progress and achievements for the overall enhancement of classroom instruction and learning. Teacher-created assessments may be categorised in several ways.

Mehrens and Lehmann (2009) propose a categorization system that categorises items depending on the format utilised - either essay-type or objective-type. Tests can be classified based on the type of stimulus material used to present them to students, such as verbal or non-verbal. Other classifications are based on the purposes of the tests and the use of the test results, such as criterion-referenced versus norm-referenced, achievement versus performance, and formative versus summative.

Empirical Review

Although some teachers of basic schools find it deficult to use test blueprints which is crucial for matching test items with curricular objectives. Test blueprint adoption in test item construction is influenced by variables such as attitude, experience, and perceived simplicity of its usage. There is very few data on how these variables influence teachers' assessment procedures in the Cape Coast Metropolis. The purpose of this study is to investigate if test blueprints are used by basic school teachers and what aspects of their personal characeristics and professional lives influence their utilization. The findings will guide professional development and policy to raise the standard of assessments in classrooms. Extensive empirical review was done base on the objectives of the topic.

Teachers' Perceptions about Blueprint in Test Item Construction

Researchers have attempted to investigate teachers' perceptions of assessment in many different ways (Chester & Quilter, 1998). Chester and Quilter believed that studying teachers' perceptions of authentic assessment is important in the sense that it provides an indication of how different forms of authentic assessment are being used or misused and what could be done to

improve the situation. More critical is the fact that perceptions affect behavior (Calderhead, 1996; Atweh, Bleicker & Cooper, 1998).

Panizzon and Pegg (2007) engaged 25 teacher-volunteers to participate in a study representing six secondary rural schools from New South Wales, Australia. The researchers used the Structure of Observed Learning Outcome (SOLO), a cognitive structural model that provided a basis for both assessing students' understanding and identifying ways of enhancing students' learning (Panizzon & Pegg, 2007, p. 420). Three two-day workshops were conducted at the University for these teachers, focusing on the SOLO model assessment tasks and teaching strategies of the 25 teacher-volunteers by Panizzon and Pegg (2007).

The researchers primarily used two sources of data: students' scripts coded using the SOLO model and interviews with teachers. They inquired from the teachers about their experiences with the new approach to teaching, i.e. (SOLO) and assessment practices to enhance students' learning. The researchers found out that all teachers who participated in this project represented a change in their perception, enabling them to use collaborative effort to engage students' understanding in their classrooms.

According to Panizzon and Pegg (2007) the project helped teachers recognize that restricting the type and style of questions in their teaching and assessment provide limited scope for students to demonstrate their conceptual understanding (p. 431). In general, the researchers discovered that instructors experienced a change in their understanding of learning, which was reflected in their teaching and assessment methods. This change was seen by both students and other teachers (Oosterhof, 2012).

Teachers' Teaching Experiences and the Use of Test Blueprint in Test Item Construction

Podolsky, Kini and Darling-Hammond (2019), conducted a study in United State of America (USA). The purpose of their search was to summarize the key findings from a critical review of relevant US research to determine whether teachers, on average, improve in their effectiveness as they gain experience in the teaching profession. The authors reviewed thirty (30) studies published since 2003 that analyze the effect of teaching experience on student outcomes in the USA.

The research revealed that teaching experience has a positive correlation with student achievement gains throughout a teacher's career. As teachers gain more experience, their students are more likely to perform well on measures of success that go beyond test scores. Additionally, teachers show greater improvement in their effectiveness when they work in a supportive and collaborative environment or when they accumulate experience in the same grade, subject, or district. Furthermore, experienced teachers provide advantages to their colleagues.

Bol, Stephenson, O'connell and Nunnery (1998) in their study on "Influence of experience, grade level, and subject area on teachers' assessment practices." The research examined the assessment practises reported by teachers and investigated how teaching experience, grade level, and topic area influenced these practises. 893 instructors in 34 schools were surveyed using questionnaires. Teachers mostly used performance and observation-based assessment methods, expressing the highest level of trust in the validity of these evaluation procedures. Correlational studies indicated a positive relationship between instructors' use of alternative assessment techniques and

their stated preparedness in developing such assessments, as well as their confidence in their validity. Similar findings were seen for more conventional forms of evaluation.

The research found that the majority of highly experienced instructors (with 20 years or more of experience) reported using alternative evaluation techniques more often compared to less experienced teachers (with 6 years or less of experience). High school instructors used alternative evaluation procedures less often compared to elementary school teachers, as stated by the latter. Mathematics instructors reported a much lower frequency of employing conventional evaluation techniques compared to teachers in other subject areas.

Teachers sometimes assert that they acquire a greater amount of knowledge from their teaching experience compared to their coursework. Schmidt (2010) performed a quantitative investigation on the topic of learning from teaching experience, specifically focusing on Dewey's theory and its impact on the learning of preservice teachers. The author examined the significance that six preservice teachers assigned to peer teaching, early field experiences, student teaching, and self-arranged teaching experiences undertaken throughout their university education.

In accordance with Dewey's theory of experience, the participants established coherence and extracted personal significance from their teaching experiences via interaction. The personalised nature of learning was enhanced as they also recognised the importance of studying within a community of educators. His research demonstrated that effective learning from various educational experiences was facilitated by a combination of active

engagement (activity) and thoughtful contemplation (reflection), both on an individual level and within a community setting.

Teachers' Skills in the Application Towards the Use of Blueprint in Test Item Construction

This research found a moderate correlation between the perceived skill level and the frequency of using evaluation practises. The assessment practises used in the research included the utilisation of higher-order cognitive items, evaluation of individual students' engagement in class, assessment of problem-solving abilities, utilisation of assessment outcomes to inform decision-making on the reasons behind students' errors, and utilisation of assessment outcomes to inform decision-making. The discovery aligns with the guidance provided in measurement textbooks (Airasian, 1994; Gronlund & Waugh, 2009; McMillan, 2005; Popham, 2006; Reynolds, Livingston, & Wilson, 2009).

The authors of these publications advocate for instructors to possess expertise in using assessment data to make well-informed judgements about students' learning. This includes tasks such as identifying students who may be experiencing learning difficulties, providing appropriate interventions, offering guidance, and delivering feedback. The study reveals a moderate correlation between perceived skill and the frequency of using assessment practises. Specifically, individuals who perceived themselves as skilled were more inclined to use assessment practises more frequently. This includes utilising assessment results to inform decisions about students' learning, identifying reasons for student errors, and employing higher-order cognitive items to evaluate students' critical thinking abilities. The findings suggest that instructors who possess more proficiency in assessment practises are more

inclined to use them more often. Additional skill training is necessary to ensure that instructors are proficient in using assessment practises.

Teachers' Attitudes Towards the Use of Blueprint in Test Item Construction

Fox and Soller's (2001) research on authentic assessment strategies and tools used by teachers in Malawi found that, while students in higher grades showed superior performance when working competitively using writing samples, performance products, and graphic organisers, those in lower grades showed a preference for working collaboratively using projects, computer-based simulation tasks, storytelling, and demonstrations. Some students are disadvantaged by testing and examination-heavy educational systems, as was also shown in the research (Allen & Yen, 2012; Nampota & Wella, 1999).

Fook and Sidhu (2010) performed a research in Malaysia to examine the various forms of genuine evaluation used in higher education in the country. The study used a qualitative research methodology and included tools such as interviews, document analysis, and classroom observations to gather pertinent data within the classroom setting. The researchers discerned the use of many forms of genuine assessment.

The survey found that instructors used the following evaluation tools: portfolio (10%), article review (10%), performance product (20%), project (40%), and test (20%). The results suggest that students more widely accept alternative and genuine assessment methods and should be considered as a viable alternative to conventional standardised testing. The research once again showed that assessment practices in some subject areas, such as Mathematics, Science, and Social Studies, had a positive focus on formative

assessment. Specifically, 80% of the overall marks were assigned to ongoing assessment, while the remaining 20% were allotted to the exam. Furthermore, the questioned students concurred that the project and portfolio assignments provided were very realistic and genuine duties that they could directly connect to their future professional environment.

Oosterhof (2012) examined the evaluation and scoring methods used by 19 American high school mathematics instructors. Their research revealed that exams and quizzes were the predominant evaluation instruments, accounting for around 77% of students' overall marks. Out of the total of nineteen professors, twelve opted for other methods of evaluation, such as written projects, experiments, demonstrations, or student interviews. The survey also indicated that instructors documented a significantly elevated degree of student engagement in both the written assignments and the experiments.

Anxiety of Teachers in the Classroom Towards the Use of Test Blueprint in Test Item Construction

Most educators would agree that the personality and mental well-being of teachers, as shown in their classroom conduct, have significant importance. These attributes may be seen more significant than the teacher's expertise in the subject matter and teaching techniques by certain individuals. The reference is from Coates and Thoresen's work published in 1976. Ferguson, Frost and Hall (2012), investigated into predictors of anxiety, depression, and job satisfaction in teachers at northern Ontario in the United States of America. The researchers used data obtained from self-report surveys. Factor analysis and multiple linear regression were conducted to identify the specific sources of stress that predict stress-related symptoms in teachers.

Additionally, the study examined the relationship between stress, depression, anxiety, years of teaching experience, gender, grade level assignment, position (part-time vs. full-time), and job satisfaction. The findings demonstrated that both workload and students' conduct were substantial predictors of depression among instructors in the research. According to their findings, stress and depression have a substantial and adverse influence on work satisfaction. Furthermore, the scientists noted that a substantial and favourable correlation existed between years of teaching experience and work happiness. Teacher work satisfaction was not significantly predicted by anxiety, gender, grade level, or position. Hence, endeavours aimed at enhancing workload, student conduct, and job circumstances may result in less stress among educators and, consequently decreased levels of melancholy and anxiety. These findings will provide direction for educators and administrators, as well as contribute to initiatives aimed at enhancing teacher job satisfaction and retention.

Comparative research was conducted to investigate the impact of stress inoculation training and classroom management training on teacher anxiety. The reference is from Sharp and Forman's work published in 1985. The research included a comparison of these two elements, with 60 instructors being randomly allocated to one of the two treatments or a control group. The dependent measures consisted of self-reported levels of teaching and general anxiety, observations of motoric signs of anxiety in the classroom, and observations of instructors' verbal classroom behaviour. Data was gathered before treatment, after treatment, and during a follow-up period of 4 weeks. The research revealed that both stress inoculation and classroom management training had a positive impact on instructors' emotional state and conduct.

Hence, it can be said that providing instructors with regular reminders and comprehensive training on classroom management significantly alleviates the strain and tension they experience in their classrooms. This may also facilitate the delivery of high-quality education and enhance learning outcomes, enabling learners to progress from lower levels to higher levels of achievement.

In their study, Morton, Vesco, Williams, and Awender (1997) examined the characteristics of anxiety among student teachers. An investigation was conducted on education-related anxiety using a sample of about 1,000 student teachers in Canada. The study incorporated a cross-cultural perspective and assessed student teachers using an anxiety measure specifically designed for British student teachers. The study then examined the effects of practise teaching, the importance of instructional preparation, demographic variables, and predictive models for anxiety.

The findings of their study revealed that anxiety elements, such as evaluation, pedagogical, class management, and staff interactions, were identified among the participants, comparable to those seen in British participants. Notably, evaluation anxiety was shown to be the most prominent. A practical teaching experience resulted in decreased anxiety levels for all genders, particularly females, with the most significant decreases seen in assessment and pedagogical anxiety. During a research, the participants expressed their worries before receiving instruction (PRETEST), after receiving instruction (POST-INSTR), and after engaging in practise teaching (POST-TEACH). Female participants exhibited elevated anxiety ratings compared to male participants throughout both the pretest and post-instruction

phases. However, their anxiety levels became similar to those of men after engaging in practise teaching.

Anxiety levels were shown to be greater among females in the lower grades division. Anxiety levels exhibited a drop from the pre-test to the post-instruction phase across all four measures. Furthermore, there was a decrease in anxiety levels from the post-instruction to the post-teaching phase for the evaluation, pedagogy, and staff relations scales. However, anxiety related to class management did not reduce after practise teaching. Furthermore, anxiety heightened as the grade level of placement declined. All models, including demographic, experiential, and dispositional ones, showed predictive capabilities. However, the psychological disposition to feel overwhelmed emerged as the most accurate predictor. They concluded that Student-teacher anxieties are related to demographic variables, experiential variables, and dispositional variables.

The results of the research clearly indicate that trainee teachers who are receiving guidance from a teacher training provider or educational institution experience anxiety. Without undergoing a thorough counselling session to address and manage their anxiety, these student-teachers will continue experiencing anxiety throughout their careers, even after graduating from their institutions of education as professional teachers.

Teachers' Use of Test Blueprint in Test Item Construction

Alade and Igbinosa (2014) performed a research to investigate the Table of Specification and its significance in educational assessment. The research used a sample consisting of 120 students, who were randomly chosen from four departments at the Faculty of Education, University of Lagos, Akoka, Nigeria. The study used a questionnaire devised by the researcher.

Three research questions and three null hypotheses were generated and assessed at a significance level of 0.05 utilising independent t-tests and Pearson product-moment correlation statistical analysis. It was determined that the three hypotheses proposed were statistically significant. The study found a notable distinction between the Table of Specification and its relevance in educational assessment. It also revealed a positive correlation between the issues related to the Table of Specification and its relevance in educational assessment.

Furthermore, a significant relationship was observed between the overall approach to preparing the Table of Specification and its relevance in educational assessment. Teachers are advised to make an effort to create a comprehensive test blueprint in order to enhance the accuracy of teacher evaluations. It is important for the test to cover a sufficient range of topics and for both teachers and students to follow the guidelines when preparing the Table of Specification in schools.

The validity of teacher-created assessments remains a subject of debate in the educational evaluation process. In their research published in the Asian Social Sciences, Musah, Al-Hudawi, Tahir, and Kamil (2015) examined the validity of teacher-made assessments using a table of specification technique. This research examines the content validity of teacher-created assessments in three Chinese Elementary Schools located in Johor, Malaysia. Additionally, it assesses the level of comprehension among teachers about the table of specifications in the selected schools. A survey consisting of 10 questions was issued to a group of 30 instructors in order to get data on the table of specifications. Items 1 to 4 measure the level of teacher comprehension of the table of specification, whereas items 5 to 10 evaluate the content validity of

assessments created by teachers. The findings indicated that instructors had a limited comprehension of the table of specifications. The study indicated that most of them lacked attendance in courses related to table of specification and were incapable of constructing a thorough table of specification for the topics they teach. The results also indicated that teacher-created assessment had content validity. However, the majority of the instructors did not use the table of specifications while constructing evaluation instruments. Teachers demonstrate a deficiency in fundamental skills related to creating a standardised table of specification, as well as a lack of understanding of the significance of the table of specification. The research also discussed recommendations for enhancing teacher-made assessments.

DiDonato-Barnes, Fives, and Krause (2014) conducted a study, Enhancing teacher-created conventional assessments via the use of a Table of Specifications: A design that is based on experimentation and testing. The researchers examined whether providing training on a Table of Specifications (TOS) would have an impact on the quality of test creation in the classroom. The researchers expected that the findings would be valuable for educational researchers, teacher educators, and practising teachers who are interested in evidence-based solutions that might enhance assessment practises. A total of fifty-three college students were allocated at random to either an experimental group, which was exposed to the TOS technique, or a comparison group, which did not get any special strategy assistance. Both groups were provided with materials for an educational unit to create a classroom exam. The multivariate analysis of covariance indicated that students who were exposed to the TOS method had greater scores in test content evidence, but not in response process evidence. In addition, it was discovered that the participants

undergoing therapy were capable of successfully and precisely using the TOS tool to choose things that appropriately represented the topic matter outlined in the tool. Nevertheless, students had challenges in choosing objects at the cognitive level defined in the TOS instrument.

Newman, Lim, and Pineda (2013) conducted an investigation on content validity of test using a combination of qualitative and quantitative approaches. Explored the application and enhancement of content validity through the use of a table of specifications methodology. The research revealed a lack of comprehensive information in existing literature about the development of processes to estimate content validity, which is crucial for enhancing the reliability of assessment tools. The authors provided three distinct illustrations, explanations, and implementations of Tables of Specifications (ToS) to produce these estimations. The formulation and rationale of the Terms of Service necessitate the provision of transparent evidence that establishes credibility in the accuracy assessments via the maintenance of an audit trail and the use of triangulation, expert debriefing, and peer review. The argument posits that content validity necessitates a mixed methods approach since it involves the use of both qualitative and quantitative approaches that mutually inform one another in the development of data. This approach is iterative and involves obtaining input on the success of the Terms of Service (ToS) by determining consensus.

Challenges of Using Test Blueprint in Test Construction

There are challenges in the use of test blueprint, this may occur as a result of the teachers' or users' inability to overcome an obstruction that hinder the use of test blueprint to come out with quality test items. It could be

the skills or knowledge that the assessment should cover or the content areas that are required to be on the test blueprint.

In a research undertaken by Eshun (2014) the objective was to examine how achievement tests impact the teaching methods used by teachers in the Social Studies classroom in Ghana, as well as the difficulties they face. The research used a descriptive case study approach, including a total of 10 senior high schools and a sample of twenty instructors selected at random from a pool of fifty-seven (57) senior high schools in the Central Region of Ghana. The primary tool used for data gathering was a semi-structured interview guide. The study discovered that the types of accomplishment tests used by some instructors in their classes were restricted as a result of examination regulations, time constraints, resource limitations, and the evaluation techniques implemented by their institutions.

Moreover, they disclosed that the majority of instructors they saw did not use assessment methodologies that actively engaged students in the process of teaching and learning. Furthermore, it was reported that several educators expressed that the use of the accomplishment exam would impede their progress in covering the content outlined in their assigned syllabi. In their research done in the USA, Oosterhof (2012) found three factors that contribute to instructors' reluctance to use various evaluation methodologies. Initially, many educators have a restricted understanding of several types of evaluation. Furthermore, educators expressed a lack of available time to develop or cultivate genuine evaluation methods.

Conceptual Framework

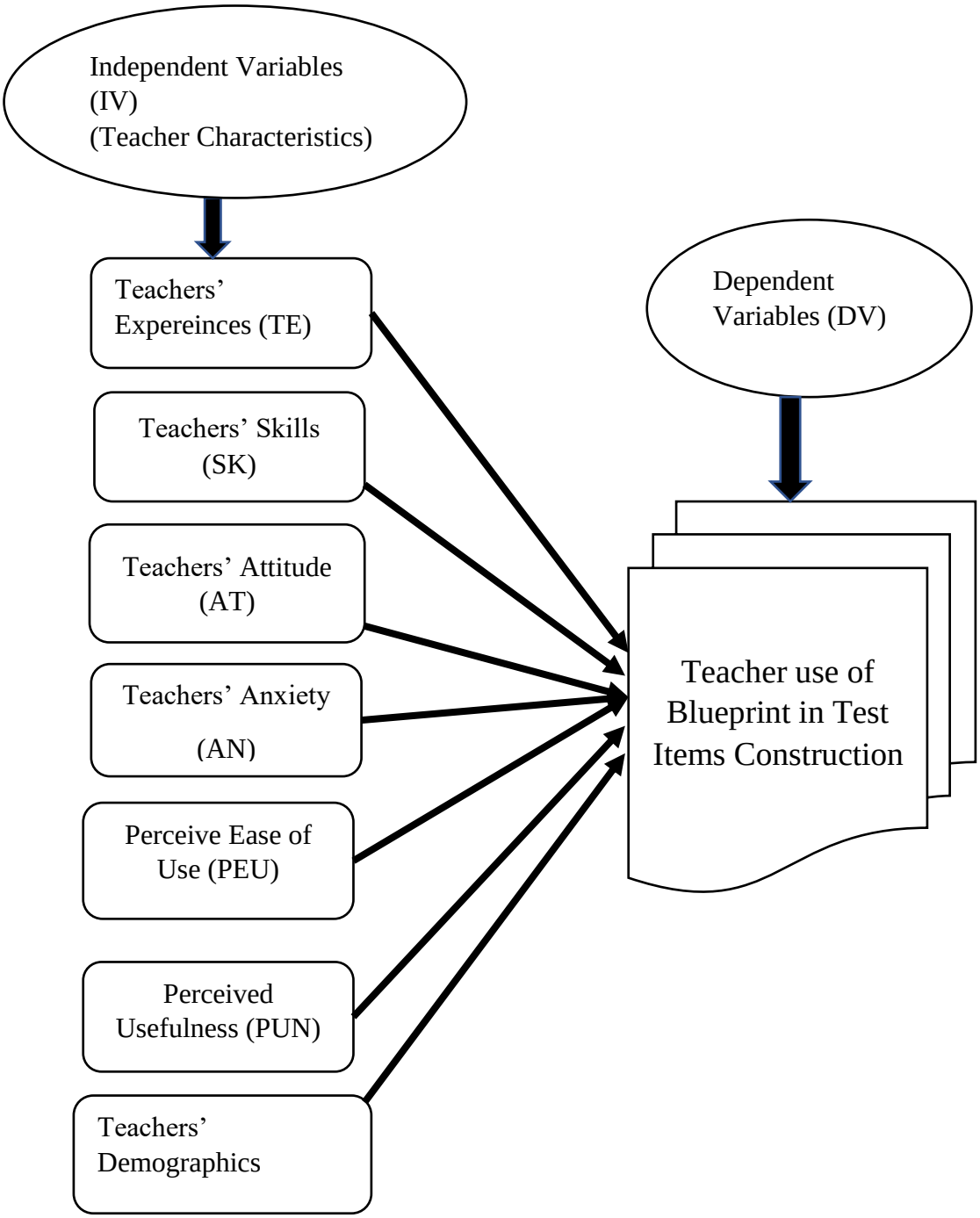

Figure 2: Conceptual Framework depicting how Teachers' use of Test Blueprint in Test Items Construction could be measured.

Source: Author's Construct, 2023

Interpretation of the Framework

The framework portrays and depicts the key variables in the study. For a good and effective assessment to take place, items construction, items administration and scoring of items must be taken into consideration. All these components of assessment can only be successful when teachers are able to develop and use test blueprint in their test items construction process. To meet the modern trends of assessment, the use of test blueprint in test item construction process is one of the key principles that must be effectively deployed by teachers. This will lead teachers to adhere to the strategy of assessment practices. Some of the independent variables the researcher sought to measure are teachers' level of experiences, teachers' test construction skills, teachers'attitude to test construction, teachers' test construction anxiety, teachers perceive ease of use, teachers perceived usefulness and teachers demographics. All these variables were measured against the dependent variable (teachers' use of test blueprint in test items construction).

Influence of Demographic Variables on the Use of Test Blueprints

Adodo (2014) evaluated the proficiency of secondary school instructors in assessing students' cognitive and psychomotor success in fundamental science and technology, taking into account characteristics such as the teachers' gender, age, years of experience, and certification. The study findings revealed that teachers' qualifications and years of experience had no impact on their ability to determine test objectives, construct a table of specifications, and evaluate students' learning outcomes. However, a notable difference was observed in teachers' gender and their competency in evaluating science learning outcomes.

Teachers who graduated from college or university not long ago were found to be more open to implementing new test construction tools than their more experienced counterparts, who might be more set in their ways (Appiah, 2019). Test blueprint usage is also more common among educators who have completed specialized assessment training or hold postgraduate degrees (Appiah, 2019). Though local institutional and cultural elements may interact uniquely with these demographic variables in the Cape Coast Metropolis, these patterns have not been properly investigated there.

Teachers' Level of Experience in the Use of Test Blueprint

Kinyua and Okunya (2014) found that teachers' teaching experience varies with the number of years one has been teaching, and that validity of a test is so much affected by the experience of teachers rather than its reliability. Teacher characteristic is a crucial factor for the success of secondary education and thus vital in the education sector. Teacher professionalism refers to the capacity to instruct students in a significant manner, devise inventive methods for teaching required material, and simultaneously encourage, captivate, and motivate young intellects to prepare for always evolving technology. According to Haliday (1999), teacher professionalism is very important in education since it directly influences the teacher's position and teaching methods, which in turn impact the students' capacity to learn efficiently.

An extensive examination of data from 60 research revealed a correlation between the number of years a teacher has been in the profession and the test scores of their pupils. Similarly, a data analysis conducted in Texas schools revealed that children taught by experienced instructors achieved much greater levels of academic success compared to students taught

by novice teachers. These findings align with those of Dosumu (2002), who noted that as teachers gain more experience, their understanding and appreciation of key test construction abilities increases.

Utilizing test blueprints effectively requires experience. According to research by Okeke (2017), educators with more years of teaching experience typically have more exposure to and comprehension of test blueprinting processes, which enables them to develop assessments that are more reliable and valid. There is, however, little information available in the Cape Coast Metropolis regarding the relationship between teacher experience and test blueprint use. According to Gyamfi's (2021) preliminary investigation, teachers who have over ten years of experience are more likely than their less experienced colleagues to employ test blueprints. The study also highlighted how professional development initiatives help teachers become more proficient in the use of test blueprinting.

Teachers' Use of Test Blueprint in Test Item Construction

It is important that educators understand the significance of utilizing test blueprints in learning environments to guarantee a thorough and impartial evaluation. In order to ensure content validity and equity in assessment methods, test blueprints operate as guidelines for creating test items that correspond with instructional objectives (Amin, 2019). Nonetheless, studies reveal that instructors frequently underuse test blueprints because of time restraints, inadequate training, or inability to obtain these materials (Johnson, 2018). Few studies have examined the extent to which basic school instructors in Ghana, namely in the Cape Coast Metropolis, use test plans. According to Adjei's (2020), a considerable proportion of basic school teachers do not regularly utilize exam plans, which they attribute to a lack of formal training.

Teachers' Test Item Construction Skills in the Use of Test Blueprint

In order to ensure alignment with learning objectives and cognitive levels, test item building is a skill that mainly relies on the use of a test blueprint. According to a Mensah (2019) study on basic school teachers in Ghana, a large number of teachers find it difficult to create test items that demonstrate higher-order thinking, in part because they don't follow a methodical procedure like using a test blueprint. The results indicated that the skills of item manufacturing were substantially superior in those who did use test blueprints. However, further study is required in the Cape Coast Metropolis to assess the level of expertise of teachers in this field and the effects of using blueprints on item quality.

Attitudes Toward Test Construction and The Use of Test Blueprints

It has been demonstrated that test item development procedures are influenced by teachers' views regarding test construction. The adoption of organized methods, including test blueprinting, is typically correlated with positive attitudes about assessment processes. Teachers who recognize the benefit of thorough and accurate evaluations are more likely to use test plans (Ofori, 2020). However, unfavourable opinions that are frequently the result of ignorance or lack of confidence make using blueprints difficult. To determine how teacher attitudes about test construction affect the actual use of blueprints, more research on teacher attitudes toward test construction is necessary in the Cape Coast Metropolis.

Test Construction Anxiety Level in Using Test Blueprints

One major problem that can prevent teachers from implementing systematic test development procedures, such as the usage of blueprints, is test construction anxiety. According to a study by Frimpong (2018) on teacher

anxiety in assessment contexts, educators with high anxiety frequently shy away from difficult assignments like blueprinting. This result is in line with research from around the world, which shows that test anxiety is related to not being familiar with assessment instruments (Smith & Brown, 2020). Anxiety's role in test construction practices in the Cape Coast Metropolis is still little understood and needs more empirical research, particularly in relation to the usage of test blueprints.

Perceived Ease of Use of Test Blueprints

Technology Acceptance Model (TAM): Adapted to educational contexts, measures how teachers accept new assessment technologies. One of its main components is perceived ease of use (Davis, 1989). It can have a substantial impact on teachers' willingness to use test blueprints in the creation of test items if they believe that employing them will be challenging. Teachers who incorporate test blueprints in their assessment procedures are more inclined to do so when they perceive them to be user-friendly, according to research (Agyeman, 2021). Though opinions regarding the ease of use or difficulty of blueprinting may differ depending on prior exposure and training, this has not been thoroughly investigated in the Cape Coast Metropolis.

Extent to Which Perceived Usefulness Affects Teachers' Use of Test Blueprints

According to Boateng (2017), teachers are more likely to employ test designs on a regular basis when they are aware of the useful advantages of doing so, such as enhanced test quality and conformity with curricular requirements. This means that the main goal of training programs should be to show how test designs may be used to improve test validity and reliability. There is a lack of empirical evidence in the Cape Coast Metropolis, therefore

more study may be necessary to understand how instructors view the value of exam blueprints and how this influences their utilization.

Chapter Summary

As suggested by theory of planned behavior, teachers accumulated personal experience could have a structural bearing and influence their behavior towards their understanding of test blueprint. This is to mean that the personal experiences teachers go through or encounter could influence their ability to use test blueprint positively or negatively. The empirical review identifies important patterns regarding basic school instructors' usage of test blueprints while creating test items. Although there is a wealth of worldwide research on this subject, the Cape Coast Metropolis has produced relatively little empirical data. In order to comprehend the breadth of test blueprint usage, the difficulties instructors or teachers encounter, and the influence of demographic factors on their activities, future research should concentrate on collecting more localized data. Even though, this study seeks further to expand literature by dwelling on the influence of teacher characteristics on teacher use of test blueprint in test items construction in Cape Coast Metropolis, the improvement of assessment procedures in the metropolis, professional development programs and policy reforms should be informed by empirical insights. There is therefore the need for this study to investigate how teacher characteristics influence teacher usage of test blueprint in test item construction in the Cape Coast Metropolis since there is paucity of litereature on it within the metropolis.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter discusses how the study was conducted and the research methodology used to explore the influence of teacher characteristics on teacher use of test blueprints at the basic schools in the Cape Coast Metropolis. It is presented in eleven sections namely research paradigm, research design, study area, population, sampling procedure, data collection instrument, validity of instrument, pilot test and reliability of the instrument, ethical considration on data collection, data collection procedures and how the data collected was processed and analysed.

Research Paradigm

The positivist and interpretative perspectives are widely recognised as the primary paradigms that guide social inquiry in contemporary times (Creswell, 2012). Each of these paradigms is rooted in a philosophical and theoretical lineage and is based on ontological assumptions about the nature of reality, as well as epistemological assumptions about how humans might acquire knowledge about that reality (Blaikie, 2000). Positivism is the examination of social phenomena based on the fundamental principles that guide the scientific sciences.

According to Neuman (2004), positivists approach research by assuming that the study of the social world should follow the same principles as the natural sciences. As a result, they tend to see social reality as consisting of objective facts that can be accurately measured using statistical methods (Neuman, 2004). Giddens (2009) defines the positivist approach as a research

method that relies on direct observation and seeks to establish causal, law-like generalisations via theoretical claims.

Comte (1970) argues that using the positivist method allows social researchers to comprehend the social world, enabling them to anticipate the behaviour of social phenomena. This knowledge empowers researchers to influence social life in a more progressive way. Comte, credited with originating the word positivist, aimed to develop a method for studying society that would elucidate the principles governing the social realm, similar to how natural science explains phenomena in the physical world. Creswell (2012) embraced this stance in order to save the social (moral) sciences from what he saw as an inadequate condition. He held the belief that all scientific explanations include an essentially same logical framework.

Positivists use both inductive and deductive investigation methods with the aim of establishing a generalised rule or principle. This allows researchers to utilise logical reasoning to explain how the notion functions in actual, real-life settings. Positivists use rigorous empirical methods to evaluate the expected results of a principle in specific real-world situations, using very accurate measurements (Giddens, 2009). Thus, the overarching general rule or principle has a tendency to include several distinct scenarios.

Neuman (2004) states that most positivist studies are quantitative, and positivists often consider experimentation to be the optimal method for social science research. The positivist also employs some quantitative methodologies like as surveys or pre-existing data, but regards them as mere approximations of an experiment in cases when doing an experiment is not feasible (Neuman, 2004). I align with the positivist perspective, and as such, my work is grounded on the positivist research approach.

Research Design

The selected research design for the study was a cross-sectional descriptive survey. Amedahe (2004) defines a cross-sectional descriptive survey as a method that reveals the characteristics of a certain phenomena (p. 50). Gay (2004) defines cross-sectional descriptive survey as a method of gathering data to address research inquiries about the present condition of the study participants. According to Dawson (2002), a research design is the conceptual framework that guides the process of doing research. This research used the cross-sectional descriptive survey approach. A cross-sectional descriptive survey was conducted to research and analyse the assessment practises in education in basic schools in Cape Coast. The data gathered focused on the usage of test blueprint in test item building as the measuring variable. A cross-sectional descriptive survey was used to enhance comprehension of instructors' assessment practises regarding the utilisation of blueprints in constructing test items.

According to Cohen, Manion, and Morrison (2002), this design offers a significant advantage in that the data gathering procedures have several benefits, since they give a comprehensive approach to collecting data. For instance, a survey may provide statistical data on an event while simultaneously depicting the manner in which individuals perceive and encounter this event. Murphy et al., (2009) reiterated that the descriptive research methodology presents a distinctive approach to gathering data, resulting in a more precise depiction of occurrences. It aims to elucidate individuals' perspectives and actions by analysing data collected at a specific moment in time.

Nevertheless, the design exhibits several vulnerabilities. The main drawback of descriptive research is its lack of confidentiality (Murphy et al., 2009). Murphy (2009) posits that respondents often exhibit a lack of veracity due to their inclination to offer the researcher with replies that align with the researcher's expectations. Additionally, participants may decline to provide information they see as too personal. Another drawback of this design, as stated by Murphy (2009), is its susceptibility to inaccuracy and subjectivity. Nevertheless, despite its flaws, the design was implemented due to its aim of elucidating individuals' perceptions and behaviour through data collected at a specific moment. Additionally, it can furnish statistical information about an occurrence while also depicting how people undergo that occurrence, thereby offering a comprehensive method for gathering data.

Study Area

The research was conducted in the Cape Coast Metropolis, located in the Central Region of Ghana. The population of Cape Coast Metropolis is estimated to be 169,894. The land is next to the Abura-Asebu Kwamankese District in the north, the Mfantseman District in the east, and the Komenda-Edina- Eguafo -Abram District in the west. It is also bounded by the Gulf of Guinea to the south. The Cape Coast Metropolis consists of a total of 79 public Junior High Schools, which have been categorised into six circuits. The Cape Coast Metro has a total of 1,244 instructors distributed among its 79 public schools.

The Metropolis has been widely acknowledged as the birthplace of education in Ghana, namely in the Central Region of the former Gold Coast (Gyesi & Addo, 2014). According to their account, several students who were

mentored by early European settlers on the Gold Coast during the 18th Century started their study at Cape Coast.

Population

The population for this research consists of all junior high school teachers in Cape Coast metropolitan. Polit and Beck (2004) provided a precise definition of a population as the whole collection of instances that satisfy a certain set of characteristics. The researcher aims to generalise the outcomes of the study to a specific population, referred to as the targeted population (Ary, Jacobs & Razavieh, 2010). Amedahe (2000) defines target population as the population that the researcher aims to generalise.

The Cape Coast Metropolis consists of a total of 79 public Junior High Schools, which have been categorised into six circuits. The Cape Coast Metro has a total of 1,244 instructors distributed among its 79 public schools. The first circuit comprises 12 schools, the second circuit has 16 schools, the third circuit comprises 14 schools, the fourth circuit comprises 13 schools, and the fifth and sixth circuits include 10 and 14 schools respectively. This research focused on a specific group of individuals, consisting of 1244 instructors from the 79 public Junior High Schools in Cape Coast Metropolis, as reported by the Cape Coast Metropolis Education Office in 2020. Table 4 provides information on the quantity of circuits and schools, together with the overall count of instructors, in the Cape Coast Metropolis.

Table 4: Frequency Distribution of Circuits, Public Schools, and number of Teachers in Cape Coast Metropolis

Name of Circuit	Number of Schools	Number of Teachers
Cape Coast Circuit	12	222
Aboom Circuit	16	247
Bakaano Circuit	14	211
Pedu/Abura Circuit	13	234
OLA Circuit	10	138
Efutu Circuit	14	192
Total	79	1244

Source: Cape Coast Metropolis Education Office, 2020

Sampling Procedure

Sampling, as defined by Fraenkel and Wallen (2000), is the act of choosing a subset of the population to serve as a representative sample of the overall population. Sarantakos (2005) argues that using a sample allows researchers to analyse a smaller number of units instead of the whole target population, while still obtaining data that accurately represents the whole population. The accessible population consisted of educators from the chosen 65 public Junior High Schools in the Cape Coast Metropolis which gave me 1052 as the accesible population. Based on Krejcie's and Morgan's (1970) sample determination table, a population size of 1052 necessitates a sample size of 278.

The schools within the Cape Coast Metropolis have been categorised into six clusters, each corresponding to one of the six circuits in the Metropolis. The sample process used a three-stage (multi-stage) sampling technique. In the first phase, a process of simple random sampling was used to

choose five (5) circuits out of the total six (6) circuits, this is because the Efutu circuit within the Cape Coast Metropolis was selected for the pre-testing of the research instrument, this made the Efutu circuit out of reach to be part of the accesible population.

Secondly, a simple random sampling was used, to ensure a representative sample for the research, I used a database of random numbers to choose 10 schools from each of the five designated circuits which gave me 50 schools. Finally base on stratified proportionate sampling technique, the researcher deliberately chose 4 instructors, each specialising in one of the four core subject areas (English, Mathematics, Science, and Social Studies) and 2 additional teachers were chosen at random, regardless of the major (elective) subject they teach from the selected schools. This gave me 6 teachers from each school. Therefore 6 teachers from each school multiply by 50 schools (6×50=300) gave me 300 teachers as a sample population. According to Krejcie's and Morgan's (1970) sample determination table, a population size of 1052 necessitates a sample size of 278. Consequently, a sample populatiom of 300 was chosen in this investigation for high retention rate.

Data Collection Instrument

The questionnaire served as the primary means of data collection for the research. The researcher devised the instrument based on the existing literature. Prior to the preparation of the questionnaire, a comprehensive literature evaluation was conducted on studies pertaining to assessment. The instrument served as the primary means of collecting data, ensuring a higher level of secrecy and anonymity for the respondents (Sarantakos, 2005). In addition, a questionnaire was used for the study since it allowed the researcher to gather the perspectives of a broader population. The questionnaire questions

were created in accordance with the study's aims to extract the necessary information.

According to Saunders et al., (2007), a questionnaire is an optimal instrument for efficiently gathering a large amount of information within a short timeframe. Once again, using a questionnaire is considered optimal since the respondents possess literacy skills. The questionnaire was of the closed-ended kind. The questionnaire was constructed with a five-point Likert-type scale, including the options of "Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree". The researcher chose to utilise the Likert scale due to its inherent benefit of being very simple to create. Additionally, it incorporates a level of sensitivity and discernment in its reaction, all the while producing numerical data. The five-point Likert scale is easily comprehensible and user-friendly for both survey managers and responders. Additionally, it provides respondents with the opportunity to remain neutral instead of being compelled to choose an option that does not accurately represent their thoughts.

While Likert scales are really effective and valuable in research, the researcher is well aware of their limits. There is no assumption that the gaps between the categories are equal. Additionally, the researcher is unable to verify the veracity of the respondents' statements, since some respondents may intentionally fabricate their comments. Furthermore, while using a Likert scale, the researcher lacks the means to ascertain if the respondents wanted to provide any further remarks on the matter being examined. Participants were asked to express their degree of agreement or disagreement to the questions using a five-point Likert-type scale. The scoring system for the replies is as follows: Strongly Agree = 5; Agree = 4; Neutral = 3; Disagree = 2; Strongly Disagree = 1.

The self-designed five-point likert scale research instrument was organized into eight (8) sections (A, B, C, D, E, F, G, and H). Section 'A' comprise the background information of the selected basic school teachers. The Section, 'B', constitutes items on personal experiences of basic school teachers about their use of blueprint in test item construction. "Section C" constituted items on skills basic school teachers exhibit in the use of blueprint in test item construction. "Section D" was made up of items on the attitudes basic school teachers show towards the use of blueprint in test item construction. "Section E" was based on basic school teachers' anxiety on the use of test blueprint in test item construction. "Section F" was on teachers perceived ease of use of test blueprint in test item construction. "Section G" also assessed teachers perceived usefulness of test blueprint in test item construction. Finally, the "Section H" on the instrument tested for basic school teachers use of test blueprint in test item construction.

Validity of the Instrument

Validity guarantees that conclusions drawn from gathered data are both precise and significant. Expert examination of the instrument items is important in order to assess their representativeness. Joe, Tocci, Holtzman, and Williams published a paper in 2013. According to Dambudzo (2009), validity is determined by the accuracy, honesty, and precision of study data and the procedures used to collect it. Essentially, the validity of an instrument is determined by the amount of evidence that can be gathered to support the assertion that the instrument accurately measures the specific traits being studied in the planned study. In order to verify the accuracy of the concept to ascertain the content validity, the items constructed for the instrument were shown to some senior members in the Department of Education and

Psychology, University of Cape Coast and my supervisor for an expert evaluation. This was to examine: (a) whether they were related to the research questions; (b) whether they would elicit the appropriate responses from the respondents; (c) whether the vocabulary structure was appropriate; (d) whether the items were properly arranged; (e) if items fitted into sections they had been placed in; and (g) whether any of the items were ambiguous and misleading. The suggestions they gave were used to improve the instrument and thereby helped to establish the face and content validity. Consequently, several modifications were implemented to the questionnaire before conducting the pilot-testing phase.

Pilot-Test and Reliability of the Instrument

Pilot-test was done to validate the instrument, that is, to see if it will be reliable and valid for the main data collection. The researcher purposefully sampled and used 57 teachers from three Komenda-Edina- Eguafo–Abrem (KEEA) district basic schools in the Central Region of Ghana to fill the questionnaire as a pre-testing of the instrument. In order to ensure the instrument's dependability, Cronbach alpha was used to assess its internal consistency. Reliability refers to the consistency of outcomes when the research techniques are replicated (Mugenda & Mugenda, 2003). A reliability assessment was conducted to evaluate the consistency of the research tools.

The reliability analysis conducted for the items on teachers' experiences on the use of test blueprint instrument yielded Cronbach's alpha value of (.89), followed by teachers'skills on the usage of test blueprint which yielded a value of (.50), teachers' attitudes towards the use of test blueprint also had a Cronbach Alpha of (.69), teachers' anxiety on the use of test blueprint also yielded a value of (.83), teachers' perceived ease of use of test

blueprint had a value of (.52), teachers' perceived usefulness of test blueprint also had a value of (.77), and teachers' use of test blueprint had a value of (.64).

Ethical Considerations on Data Collection

According to McNabb (2004), research ethics may be divided into four distinct stages: planning, data collection, data processing and interpretation, and the dissemination of findings. During the data gathering phase, while administering surveys, utmost integrity was maintained. The instructors had the chance to complete their surveys in a private manner, so ensuring the preservation of secrecy. Privacy, anonymity, and confidentiality of all participants were safeguarded throughout the distribution of findings. Consequently, the identities of the participants were kept confidential and undisclosed throughout the duration of the study endeavour (Maree, 2007). The analysis of the results was grounded on the patterns that arose from the data, rather than being influenced by any previous notions. I considered all the above during the collection of data for the pilot test of the instrument and the main work procedures.

Data Collection Procedures

The ethical principle in educational research was followed during data collecting because the study concerns human beings. The researcher received ethical approval from the University of Cape Coast's Institutional Review Board (IRB), as well as copies of an introductory letter from the coordinator, School of Graduate Studies College of Distance Education, to the various headteachers requesting for permission to conduct the study from the selected schools.

A visit was paid to the selected schools in person to get to know the headteachers and the teachers, as well as to enlighten them about the study's aim and their expected role during data collecting. This was done in a week before the questionnaires were given to the respondents. The goal of this introductory letter was to elicit collaboration while also establishing the necessary connection with the teachers and the headteachers. The researcher provided a brief self-introduction to elucidate the objective of the study to the participants. The participants were notified that their involvement is entirely optional and that they have the freedom to withdraw at any point throughout the research. Subsequently, the surveys were delivered to them. This was accomplished in all of the chosen schools.

The data collection took place across two months, from 2nd May to 1st July, 2022. There was a plan to visit the selected schools at least three times to interact and follow up on the teachers' responses to the questionnaire.

Data Processing and Analysis

Data obtained in any research endeavour has significance only via its organisation and summarization. Once the data has been collected, it undergoes processing and management via coding, editing, and entry into the proper software (Statistical Package for the Social Sciences, version 25). This is done to create findings and then clean the data, eliminating any overlooked errors. The investigation primarily focused on descriptive statistics, which included the computation of descriptive measures.

Research question 1, 2, 3, 4 and 5 was analysed using descriptive statistics such as means and standard deviation. The established mean score cut off point was 3. The criteria measure was determined by scoring the scores on the five-point Likert scale from 1 to 5. These scores were added together

and divided by the total number of the scale. That is 1+2+3+4+5=15/5=3. Therefore, a mean of 3 and above indicated respondent's agreement while a mean below 3 indicated respondent's disagreement.

Research hypothesis 1 was analyzed using independent sample t-test. Independent sample t-test is used when you want to explore difference between a categorical variable and a continuous dependent variable. For example, in this study gender was the categorical variable and teacher's use of test blueprint was the continuous dependent variable. Hence the need to used independent sample t-test to test the difference between the variables.

Research hypotheses 2 and 3 were analyzed using One-way ANOVA. One-way ANOVA was used when you want to test the difference between a categorical variable with two more groups and a continuous dependent variable. For example, age was a categorical variable which has more than two groups and teacher's use of test blueprint was the continuous dependent variable.

Research hypotheses 4, 5, 6, and 7 were all analyzed using simple linear regression. Simple linear regression is used when you want to explore the relationship between a continuous independent variable and a continuous dependent variable. Hence the need to use the statistical tool.

Table 5: Summary of How the Research Questions and Hypothesis were analyzed

Research Questions	Statistical Tool employed
RQ1. What are teachers' level of experience in the use of test blueprint in the Basic Schools in the Cape Coast Metropolis?	Means-M and standard deviations-SD (Descriptive Statistics)
RQ2. What are the level of teachers' skills in the use of test blueprint in test item construction at the basic schools in the Cape Coast Metropolis?	Means-M and standard deviations-SD (Descriptive Statistics)
RQ3. What is the attitude of teachers toward the use of test blueprint in test item construction at the basic schools in the Cape Coast Metropolis?	Means-M and standard deviations-SD (Descriptive Statistics)
RQ4. What is the influence of teachers'test construction anxiety on the use of test blueprint in test item construction at the basic schools in the Cape Coast Metropolis?	Means-M and standard deviations-SD (Descriptive Statistics)
RQ5. What is the level of usefulness of test blueprint in test item construction at the basic schools in the Cape Coast Metropolis	Means-M and standard deviations-SD (Descriptive Statistics)
Research Hypotheses	Statistical Tool to employ
H01: There is no statistically significance gender difference in teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis	Independent Sample T-test
$H_0$2: There is no statistically significance age difference in teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis.	One-Way Analysis of Variance (ANOVA)

Table 5 Cont.

Research Questions	Statistical Tool employed
$H_0$3: There is no statistically significance difference in years of teaching experience and teacher's use of test blueprint among Basic School teachers in the Cape Coast.	One-Way Analysis of Variance (ANOVA)
$H_0$4: There is no statistically significance influence of educational background on teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis	Simple Linear Regression
$H_0$5: There is no statistically significance influence of perceived ease of use on teacher's use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.	Simple Linear Regression
$H_0$6: There is no statistically significance influence of perceived usefulness on teacher's use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis	Simple Linear Regression
$H_0$7: There is no statistically significance influence of teacher's attitude to test construction on the use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis	Simple Linear Regression

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

The study sought to explore teacher use of test blueprint in test item construction. It was also to find out the influence of teacher characteristics on teacher use of test blueprint in test item construction in Basic Schools in the Cape Coast Metropolis. Specifically, the study was designed to (a) Examine teachers' level of experiences on the use of test blueprint in test item construction at the Basic Schools in the Cape Coast Metropolis. (b) Determine teachers' test item construction skills on the usage of test blueprint in the Basic Schools in the Cape Coast Metropolis. (c) Explore how teacher's attitude to test construction affect their use of test blueprint in test item construction. (d) Determine teachers' test contruction anxiety level in the use of test blueprint in the Basic School in the Cape Coast Metropolis. (a) Examine teachers' level of usefulness of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis. (f) Explore how teacher's perceived ease of use of test bluraffect teachers' use of test blueprint among Basic School teachers in the Cape Coast Metropolis. (g) Establish the extent to which teacher's perceived usefulness affects teachers' use of test blueprints in test item construction.

(h) Determine the extent to which teachers' demographic variables (gender, age, years of teaching experience and educational background) influence teachers use of test blueprints in test item construction. This chapter presents the results of the analyses and discussion of the findings of the study. The data were analyzed through frequencies and percentages, one-way analysis of variance (ANOVA) and simple linear regression.

Demographic/Background Characteristics of Respondents

The research required each participant to provide their background characteristics, since these factors and features might potentially impact their results. The variables considered were the respondents' gender, age, years of experience, and educational background. The analytical findings are shown in Table 6.

Table 6: Background Characteristics of Respondents

Subscale	Frequency	Percentage (%)
Gender		
Male	160	53.3
Female	140	46.7
Age		
Below 30	134	44.7
31-35 Years	75	25.0
36-40 Years	1	.3
41 and above	90	30.0
Years of Experience		
1-5 Years	53	17.7
6-10 Years	96	32.0
11 Years and above	151	50.3
Educational Background		
Diploma with Education	35	11.7
Bachelors with Education	191	63.7
Bachelors without Education	18	6.0
Masters with Education	53	17.7
Masters without Education	3	1.0
Total	300	100.0

Source: Fieldwork (2023)

The demographic information in Table 6 showed that more than half of the participants (n=160, 53.3%) were males. The study was dominated by participants below 30 years of ages (n=134, 44.7%), however, less than 3%

(n=1) of the respondents were between 36 to 40 years of age. The study further revealed that the majority of the respondents (n= 151, 50.3%) had 11 years and above of experience while less of the respondents (n= 53, 17.7%) had 1 to 5 years of experience. The majority of the participants had Bachelors with Education (n= 191, 63.7%), followed by Masters with Education (n= 53, 17.7%), however, Masters without Education had the least number enrolled (n= 3, 1.0%).

Research Question One

What are teacher's experiences on the use of test blueprint among Basic School teachers in the Cape Coast Metropolis?

The main purpose of this research question was to examine teacher's experiences on the use of test blueprint among Basic School teachers in the Cape Coast Metropolis. Mean and standard deviation was used to analyse the data. The established mean score cut off point for the teacher's experiences on the use of test blueprint for each indicator was 3. To find the test value as the criterion measure, the scores on the five-point Likert scale was scored from 1 to 5. These scores were added together and divided by the total number of the scale. That is 1+2+3+4+5=15/5=3. Therefore, a mean of 3 and above indicated respondent's agreement while a mean below 3 indicated respondent's disagreement. The analysis of the results are presented in Table 7.

Table 7: Teachers' level of experience on the usefulness of test blueprint (n=300)

Statement	Mean	SD
When I use test blueprint, I am able to determine what topic is being stressed and the amount of time spent on the topic during teaching and learning	4.26	.736
It helps me to cover more areas in preparation for test items	4.34	.701
I experience the production of valid test	4.22	.779
It helps me to assess the instructional objectives of each topic	4.19	.872
I appropriately reflect on subject goals and the areas to be assessed	4.14	.864
It helps me to include the appropriate item formats for the skills being assessed	4.11	.786
I am able to demonstrate to students the topics of value	3.97	1.02
Mean of means	4.17	100.9

Source: Fieldwork (2023)

The overall mean of respondents on teacher's experiences on the use of test blueprint was, *M* = 4.17, *SD* = 100.9. This implies that teacher's had experiences on the use of test blueprint. The outcome of the analysis showed that particularly, the predominant teacher's experiences on the use of test blueprint were. When I use test blueprint I am able to determine what topic is being stressed and the amount of time spent on the topic during teaching and learning (M=4.26; SD=.736), it helps me to cover more areas in preparation for test items (M=4.34; SD=.701), I experience the production of valid test (M=4.22; SD=.779) and It helps me to assess the instructional objectives of each topic (M=4.19; SD=.872). Other teacher's experiences on the use of test blueprint were mentioned which include I appropriately reflect on subject

goals and the areas to be assessed (M=4.14; SD=.864), it helps me to include the appropriate item formats for the skills being assessed (M=4.11; SD=.786), and I am able to demonstrate to students the topics of value (M=3.97; SD=1.02). The results imply that teachers had a lot of experiences on the use of test blueprint.

Research Question Two

What are teachers' skills on the usage of test blueprint among Basic School teachers in the Cape Coast Metropolis?

The purpose of this research question was to examine teacher's skills on the usage of test blueprint among Basic School teachers in the Cape Coast Metropolis. A 5-point Likert-type scale with 9 items was used to assess teacher's skills on the usage of test blueprint. A score with a mean value of 3 was used. This is the average value of the replies (average of averages). The aggregate scores of all the questions were totaled and then divided by the number of replies to get the average of averages (1+2+3+4+5=15/5=3). A mean score above 3 was considered agreement, while mean score below 3 was considered disagreement. The analysis of the results is presented in Table 8.

Table 8: The level of teachers' skills in the use of test blueprint (n=300)

Statements	Mean	SD
I state the purpose of the test in my blueprint when constructing test items	3.96	.933
I can specify the construct to be measured in my blueprint	3.96	.819
I follow the principles of test construction for each format in my blueprint	4.14	.806
I match learning outcomes to the items in my blueprint	4.07	.981
I use the blueprint to construct test items when it is time to assess learners	4.07	1.05
I use questions directly from text books when using blueprint	3.27	1.26
I ask any other colleagues to help when using blueprint	3.33	1.12
I ask colleagues in the same subject area to review test items in my blueprint	3.69	1.05
It helps me to consider the time to be spend on individual test item	3.85	1.04
Mean of means	3.81	.902

Source: Fieldwork (2023)

As displayed in Table 3, the overall mean of respondents of teachers' skills on the usage of test blueprint was, *M* = 3.81, *SD* = .902. The results generally appear that teachers' exhibit skills on the usage of test blueprint. For example, a larger proportion reported that "I state the purpose of the test in my blueprint when constructing test items" (M=3.96; SD=.933), "I can specify the construct to be measured in my blueprint" (M=3.96; SD=.819), "I follow the principles of test construction for each format in my blueprint" (M=4.14; SD=.806), "I use the blueprint to construct test items when it is time to assess learners" (M=4.07; SD=.981), and as well "I use questions directly from text books when using blueprint" (M=4.07; SD=1.05).

The study further revealed that "use questions directly from text books when using blueprint" (M=3.27; SD=1.26), "I ask any other colleagues to help when using blueprint" (M=3.33; SD=1.12), I ask any other colleagues to help when using blueprint (M=3.33; SD=1.12), I ask colleagues in the same subject area to review test items in my blueprint (M=3.69; SD=1.05), and It helps me to consider the time to be spend on individual test item (M=3.85; SD=1.04) were all identified as teachers' skills on the usage of test blueprint.

Research Question Three

What are teacher's attitudes towards the use of test blueprint among Basic School teachers in the Cape Coast Metropolis?

The purpose of this research question was to examine teacher's attitudes towards the use of test blueprint among Basic School teachers in the Cape Coast Metropolis. The predetermined threshold for each indication was set at a mean score of 3. The test value, serving as the criteria measure, was determined by scoring the scores on the five-point Likert scale on a range of 1 to 5. These scores were added together and divided by the total number of the scale. That is 1+2+3+4+5=15/5=3. Therefore, a mean of 3 and above indicated respondent's agreement while a mean below 3 indicated respondent's disagreement. The analysis of the results is presented in Table 9.

Table 9: Teacher's attitudes towards the use of test blueprint (n=300)

Statements	Mean	SD
I feel test blueprint is difficult to design	3.15	1.16
The use of test blueprint is so demanding	3.59	1.11
I feel lazy to use test blueprint in test construction	2.88	1.27
I think it is unnecessary to use test blueprint in my subject area	2.77	1.36
I can construct test items without the use of test blueprint	3.37	1.14
Test blueprint does not really have any influence on test items	2.76	1.25
Mean of means	3.15	1.21

Source: Fieldwork (2023)

From Table 9, the overall mean of respondents of teachers' attitudes towards the use of test blueprint was, *M* = 3.15, *SD* = 1.21. This generally indicated that teachers have generally slightly positive attitudes towards the use of test blueprint as the mean of means was slightly above 3. The results further revealed that "I feel test blueprint is difficult to design" (M=3.15; SD=1.16), "the use of test blueprint is so demanding" (M=3.59; SD=1.11), and "I can construct test items without the use of test blueprint" (M=3.37; SD=1.14) were all identified as teachers' attitudes towards the use of test blueprint.

However, the results revealed that "I feel lazy to use test blueprint in test construction" (M=2.88; SD=1.27), "I think it is unnecessary to use test blueprint in my subject area" (M=2.77; SD=1.36), and "test blueprint does not really have any influence on test items (M=2.76; SD=1.25) were not identified as teachers' attitudes towards the use of test blueprint.

Research Question Four

What are anxiety on the use of test blueprint among Basic School teachers in the Cape Coast Metropolis? The main purpose of this research question was to examine teacher's anxiety on the use of test blueprint among Basic School teachers in the Cape Coast Metropolis. A five-point Likert-type scale with 8 items was used to assess teacher's skills on the usage of test blueprint. A mean score of 3 was used. This is the mean of the responses (mean of means). The mean scores of all the items were summed and divided by the number of responses to get the mean of means (1+2+3+4+5=15/5=3). A mean score above 3 was considered agreement, while mean score below 3 was considered disagreement. The analysis of the results is presented in Table 10.

Table 10: The influence of teachers' test construction anxiety on the use of test blueprint (n=300)

Statements	Mean	SD
The use of test blueprint is time consuming	3.56	1.12
The use of test blueprint is demanding	3.63	1.12
There is no training or orientation on the use of test blueprint	3.34	1.22
The school assessment system makes it difficult to use test blueprint	3.37	1.21
There is no encouragement from the school authorities in terms of logistics and facilities to use test blueprint	3.55	1.16
Lack of motivation from school authorities makes it difficult to use test blueprint	3.28	1.23
Inadequate time to prepare in terms of gathering information and materials to be used of test blueprint	3.42	1.16
Some topics are difficult to be assessed on the higher levels of the Bloom's Taxonomy	3.38	1.21
Mean of means	3.02	1.18

Source: Fieldwork (2023)

Inferring from Table 10, the results revealed that, the overall mean of the respondents of teachers' anxiety on the use of test blueprint was, *M* = 3.02, *SD* = 1.18. This generally indicated teachers' anxiety on the use of test blueprint. The result further showed that "the use of test blueprint is time consuming" (M=3.56; SD=1.12) and "the use of test blueprint is demanding" (M=3.63; SD=1.12) were identified as teachers' anxiety on the use of test blueprint. The results indicated "there is no training or orientation on the use of test blueprint" (M=3.34; SD=1.22), "the school assessment system makes it difficult to use test blueprint" (M=3.37; SD = 1.21), "there is no encouragement from the school authorities in terms of logistics and facilities to use test blueprint" (M=3.55; SD = 1.16), "lack of motivation from school authorities makes it difficult to use test blueprint" (M=3.28; SD = 1.23), "inadequate time to prepare in terms of gathering information and materials to be used of test blueprint" (M=3.42; SD = 1.16) and "some topics are difficult to be assessed on the higher levels of the Bloom's Taxonomy" (M=3.38; SD=1.21), were all identified as teachers' anxiety on the use of test blueprint.

Research Question Five

What are teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis? The purpose of this research question was to examine teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis. A 5-point Likert-type scale with 4 items was used to assess teacher's use of test blueprint. A mean score of 3 was used. This is the mean of the responses (mean of means). The mean scores of all the items were summed and divided by the number of responses to get the mean of means (1+2+3+4+5=15/5=3). A mean score above 3 was considered agreement,

while mean score below 3 was considered disagreement. The analysis of the results is presented in Table 11.

Table 11: Teachers' use of test blueprint (n=300)

Statements	Mean	SD
I use test blueprint for every test item I write	3.31	1.22
The use of test blueprint improves the quality of my test items	3.80	.943
I invest all my time to use test blueprint in test item construction	3.17	1.15
The use of test blueprint is the best way to follow to construct good test items	3.87	1.04
Mean of means	3.54	1.09

Source: Fieldwork (2023)

The results revealed that, the overall mean of the respondents of teachers' use of test blueprint was, *M* = 3.54, *SD* = 1.09. This generally indicated that teachers' use test blueprint in their various schools. The result further s CII Yhowed that "I use test blueprint for every test item I write" (M=3.31; SD=1.22), "the use of test blueprint improves the quality of my test items" (M=3.80; SD=.943), "I invest all my time to use test blueprint in test item construction" (M=3.17; SD=1.15), and "the use of test blueprint is the best way to follow to construct good test items" (M=3.87; SD = 1.04) were all identified as teachers use of test blueprint.

Research Hypothesis One

$H_0$1: There is no statistically significance gender difference in teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_1$1: There is a statistically significance gender difference in teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

The aim of this hypothesis was to examine gender difference in teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis. Independent sample t-test was used to test this hypothesis. The results are presented in Table 12.

Table 12: Frequency, the mean, and standard deviation of teacher's use of test blueprint by gender

	Gender	N	Mean	SD	T	Df	p-value
Teachers Use	Male	160	14.10	3.14	-.292	298	.771
	Female	140	14.21	3.22			

Source: Fieldwork (2023)

The results of Levene's Test for Equality of Variances revealed that there were equal variances assumed in the scores depression (F = .432; p = .512). This evidence suggests that the assumption of homogeneity of variance has been met. The results of the independent sample t-test revealed that there was no statistically significant gender difference in the mean score of teachers use of test blueprint for male teachers (M = 14.10; SD = 3.14) and female teachers [M = 14.21; SD = 3.22; t(298) = 298, p = .771). Based on the results the study failed to reject the null hypothesis in favour of the alternative hypothesis

Research Hypothesis Two

$H_0$2: There is no statistically significance age difference in teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_1$2: There is a statistically significance age difference in teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

The aim of this hypothesis was to examine age difference in teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis. The independent categorical variable was gender and teacher's use of test blueprint was measured on continuous basis. One-Way ANOVA was used to test this hypothesis. The results are presented in Table 13.

Table 13: Age and teachers use of test blueprint

Age Groups	N	Mean	SD	SE	
Below 30	134	14.11	3.37	.29121	
31-35 Years	75	14.01	3.01	.34822	
36-40 Years	1	16.00	3.21	.35913	
41 and above	90	14.30	3.02	.31896	
	Sum of Squares	*Df*	*Mean Square*	*F*	*Sig.*
Between Groups	7.042	3	2.347	.232	.874
Within Groups	2999.208	296	10.132		
Total	3006.250	299			

Source: Fieldwork (2023)

Participants were divided into four groups according to their age (Group 1: below 30yrs, Group 2: 31 to 35yrs; Group 3: 36yrs to 40yrs, Group 4: 41 and above). The results revealed that participant below age 30 had a (M= 14.11; SD=3.37), followed by 31 to 35 years (M= 14.01; SD=3.01), 36 to 40 years (M= 16.00; SD=3.21), then 41 years and above (M= 14.30; SD=3.02). The results further revealed no statistically significant difference for the age

groups: F (3, 296) = .232, p = .874. Based on the results the study failed to reject the null hypothesis in favour of the alternative hypothesis.

Research Hypothesis Three

$H_0$3: There is no statistically significance difference in years of experience and teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_1$3: There is a statistically significance difference in years of experience and teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

The aim of this hypothesis was to examine difference in years of experience and teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis. The independent categorical variable was years of experience and teacher's use of test blueprint was measured on continuous basis. One-Way ANOVA was used to test this hypothesis. The results are presented in Table 14.

Table 14: Years of working experience and teacher's use of test blueprint

Age Groups	N	Mean	SD	SE	
1-5 Years	53	13.4906	3.29698	.45288	
6-10 Years	96	14.2396	2.92627	.29866	
11yrs and above	151	14.3245	3.26507	.26571	
	Sum of Squares	*Df*	*Mean Square*	*F*	*Sig.*
Between Groups	28.416	2	14.208	1.417	.244
Within Groups	2977.834	297	10.026		
Total	3006.250	299			

Source: Fieldwork (2023)

Respondents were categorized into three groups according to their years of experience (1-5years, 6-10years, 11years and above). The results revealed that participant within 1 to 5 (M= 13.49; SD=3.29), followed by 6 to 10 years (M= 14.23; SD=2.92), 11 years and above (M= 14.32; SD=3.26), then 11 years and above (M= 14.32; SD=3.26). The results further revealed that there is no statistically significant difference in years of working and teachers use of test blueprint, F (2, 297) = 1.417, p = .244**.** Based on the results the study failed to reject the null hypothesis in favour of the alternative hypothesis.

Research Hypothesis Four

$H_0$4: There is no statistically significance influence of educational background on teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

$H_1$4: There is a statistically significance influence of educational background on teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

The aim of this hypothesis was to examine influence of educational background on teacher's use of test blueprint among Basic School teachers in the Cape Coast Metropolis. The exogenous (predictor) variable was educational background which was measured on continuous basis. The criterion variable was teacher's use of test blueprint, which was also measured on a continuous basis. Multiple regression was to test the hypothesis. The results are presented in Table 15.

Table 15: Regression parameters for the relationship between educational background and teacher's use of test blueprint

Model		Sum of Squares	*Df*	Mean Square	*F*	*P*	R^2
1	Regression	.831	1	.831	.082	.774	.009
	Residual	3005.419	298	10.085			
	Total	3006.250	299				
		B	*SE*	*Beta*	*T*	*P*	
	(Constant)	13.369	.880		15.194	.000	
	Educational background	-.057	.197	-.017	-.287	.774	

Dependent Variable: Use of test blueprint

Predictors: (Constant): Educational background

The results in Table 15 highlighted the model summary and fit statistics of the linear regression results. The table showed that the data did not fit the model. It was exposed from the analysis that the data which comprised of self-reported variable educational background could not significantly influenced teacher's use of test blueprint, F (1, 298) = .082, p = .774. The end result showed that educational background explained about 0% of the variability in teacher's use of test blueprint.

The results further revealed that educational background [*B* = -.057, *SE* = .197, *t* = -.287, *p* = .774 and a *Beta* of -.017], was not found to influenced teacher's use of test blueprint. This outcome suggests that educational background were not found to influence teacher's use of test blueprint.

Research Hypothesis Five

$H_0$5: There is no statistically significance influence of perceived ease of use on the use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.

$H_1$5: There is a statistically significance influence of perceived ease of use on the use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.

The aim of this hypothesis was to examine the influence of perceived ease of use on teacher's use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis. The exogenous (predictor) variable was perceived ease of use while the criterion variable was teacher's use of test blueprint in test item construction which was measured on continuous basis. The results are presented in Table 16.

Table 16. Regression parameters for the influence between perceived ease of use and teacher's use of test blueprint in test item construction

Model		Sum of Squares	*Df*	Mean Square	*F*	*P*	R^2
1	Regression	464.051	1	464.051	54.397	.000	.154
	Residual	2542.199	298	8.531			
	Total	3006.250	299				
		B	*SE*	*Beta*	*T*	*P*	
	(Constant)	7.799	.877		8.888	.000	
	Perceived ease of use	.438	.059	.393	7.375	.000	

Dependent Variable: Use of test blueprint in test item construction

Predictors: (Constant): Perceived ease of use

The model summary and fit statistics for the simple linear regression analysis are presented in Table 16. From the results of the investigation, it was discovered that the data, which comprised perceived ease of use and teacher's use of test blueprint in test item construction fit the model, F(1, 298) = 54.397, p = .000. The result also showed that perceived ease of use explained about 15.4% of the variability in teacher's use of test blueprint in test item construction.

The results further revealed that perceived ease of use influenced teachers use of test blueprint in test item construction, (*B* = .438; *SE* = .059; *t* = 7.375; *p* = .000 and a *Beta* of .393). This outcome suggests that as perceived ease of use increases teacher's use of test blueprint in test item construction also increases. Therefore, the null hypothesis which stated that there is no statistically significance influence of perceived ease of use on teacher's use of test blueprint in test item construction is rejected in favour of the alternative hypothesis.

Research Hypothesis Six

$H_0$6: There is no statistically significance influence of perceived usefulness on teacher's use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.

$H_1$6: There is a statistically significance influence of perceived usefulness on teacher's use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.

The aim of this hypothesis was to examine the influence of perceived usefulness on teacher's use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis. The exogenous (predictor) variable was perceived usefulness while the criterion variable was

teacher's use of test blueprint in test item construction which was measured on continuous basis. The results are presented in Table 17.

Table 17. Regression parameters for the influence between perceived usefulness and teacher's use of test blueprint in test item construction

Model		Sum of Squares	*Df*	Mean Square	*F*	*P*	R^2
1	Regression	530.840	1	530.840	63.905	.000	.177
	Residual	2475.410	298	8.307			
	Total	3006.250	299				
		B	*SE*	*Beta*	*T*	*P*	
	(Constant)	7.375	.864		8.540	.000	
	Perceived usefulness	.438	.055	.420	7.994	.000	

Dependent Variable: Use of test blueprint in test item construction

Predictors: (Constant): Perceived usefulness

From Table 17, the results of the investigation discovered that the data fitted the model, F(1, 298) = 63.905, p = .000. The result also showed that perceived usefulness explained about 17.7% of the variance in teacher's use of test blueprint in test item construction. The results further revealed that perceived usefulness influenced teacher's use of test blueprint in test item construction, (*B* = .438; *SE* = .055; *t* = 7.994; *p* = .000 and a *Beta* of .420). This outcome suggests that perceived usefulness influenced teacher's use of test blueprint in test item construction. Based on the results the study rejected the null hypothesis in favour of the alternative hypothesis.

Research Hypothesis Seven

$H_0$7: There is no statistically significance influence of teacher's attitude to test construction on *the use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.*

$H_1$7: There is a statistically significance influence of teacher's attitude to test construction on the use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis.

The aim of this hypothesis was to examine the influence of teacher's attitude to test construction on their use of test blueprint in test item construction among Basic School teachers in the Cape Coast Metropolis. The exogenous (predictor) variable was teacher's attitude to test construction while the criterion variable was the use of test blueprint in test item construction which was measured on continuous basis. The results are presented in Table 18.

Table 18: Regression parameters for the relationship between teacher's attitude to test construction and the use of test blueprint in test item construction

Model		Sum of Squares	*df*	Mean Square	*F*	*P*	R^2
1	Regression	41.551	1	41.551	4.177	.042	.014
	Residual	2964.699	298	9.949			
	Total	3006.250	299				
		B	*SE*	*Beta*	*T*	*P*	
	(Constant)	12.672	.746		16.990	.000	
	Attitude to test construction	.080	.039	.118	2.044	.042	

Dependent Variable: Use of test blueprint in test item construction

Predictors: (Constant): Attitude to test construction

The model summary and fit statistics for the simple linear regression analysis are presented in Table 18. From the results, it was found that the data, which comprised teacher's attitude to test construction and the use of test blueprint in test item construction fitted the model, F (1, 298) = 4.177, p = .042. The result also showed that teacher's attitude to test construction

explained about 14% of the variability in the use of test blueprint in test item construction.

The results further revealed that teacher's attitude to test construction influenced their use of test blueprint in test item construction, (B = .080; SE = .039; t = 2.044; p = .042 and a *Beta* of .118). This outcome suggests that as teacher's attitude to test construction increases their use of test blueprint in test item construction also increases. Therefore, the null hypothesis which stated that there is no statistically significance influence of teacher's attitude to test construction on the use of test blueprint in test item construction is rejected in favour of the alternative hypothesis.

Table 19: Summary of the research questions on the report.

Variable	Means	SD	Conclusion
Teachers' experiences	4.17	100.9	This indicates that teachers are highly experienced in using the test blueprint to construct test items.
Teachers' skills	3.81	.902	The results generally indicates that teachers have a good level of skill in using the test blueprint.
Teachers' attitudes	3.15	1.21	This suggests that teachers have a generally slightly positive attitude towards using the test blueprint in constructing test items.
Teachers' anxiety	3.02	1.18	This generally suggests a moderate level of anxiety among teachers regarding the use of test blueprints in constructing test items.
Teachers' use	3.54	1.09	This score suggests a fairly positive influence of teachers' use on the use of test blueprints.

Source: Fieldwork (2023)

Table 20: Summary of the research further revealed on the hypothesis

Variables	B	SE	*T*	*P*	Conclusion
$H_0$4	-.057	.197	-.287	.774	Not supported
$H_0$5	.438	.059	7.375	.000	Supported
$H_0$6	.438	.055	7.994	.000	Supported
$H_0$7	.080	.039	2.044	.042	Supported

Source: Fieldwork (2023)

Discussion of Findings from the Results of the Study

This section discusses the finding(s) connected with each of the research questions in relations to published literature and empirical findings on the use of Table of Specification (ToS) or Test Blueprint in test item construction. Based on the research questions of the study and the outcomes, the thematic framework for discussion is outlined as follows:

1. Teachers' level of experiences in the use of test blueprint in test item construction in Basic Schools in the Cape Coast Metropolis.
2. Teachers' test item construction skills on the usage of test blueprint in Basic Schools in the Cape Coast Metropolis.
3. How teachers' attitudes to test construction affect teacher use of test blueprint in test item construction in Basic Schools in the Cape Coast Metropolis.
4. Teachers' test construction anxiety in the use of test blueprint in Basic Schools in the Cape Coast Metropolis.
5. Teachers' use of test blueprint among Basic School teachers in the Cape Coast Metropolis.

Teachers' Level of Experiences in the Use of Test Blueprint in Test Item Construction in Basic Schools in the Cape Coast Metropolis

Human experience is the ultimate source and justification for all knowledge. Experience itself has accumulated in human memory and culture, gradually producing the methods of intelligence called "reason" and "science." (Shook, 2008). Therefore, teachers' knowledge and what they practice in the classroom can be attribute to their experiences.

The maiden objective of the current study was to examine teachers' experiences on the use of test blueprint among basic school teachers in the Cape Coast Metropolis. It was revealed in the current study that teachers in Cape Coast Metropolis have experiences on the use of test blueprint in constructing test items.

The study results are in line with Podolsky and Darling-Hammond (2019), who conducted a study in United State of America (USA). The purpose of their search was to summarize the key findings from a critical review of relevant USA research to determine whether teachers, on average, improve in their effectiveness as they gain experience in the teaching profession. It came out from their search that, teaching experience is positively associated with student achievement gains throughout much of teachers' career; as teachers gain experience, their students are more likely to do better on measures of success beyond test scores and also teachers make greater gains in their effectiveness when they teach in a supportive, collegial environment, or accumulate experience in the same grade, subject or district; and more experienced teachers confer benefits to their colleagues.

The current study results confirm a study done by Bol, Stephenson, O'connell and Nunnery (1998) who examine the influence of experience,

grade level, and subject area on teachers' assessment practices. In their study teachers' self-reported assessment practices and the influence of teaching experience, grade level, and subject area on those practices were explored. Teachers reported using performance and observation-based assessment methods most frequently and had the most confidence in the validity of these assessment techniques. Correlational analyses revealed that the more teachers reported using alternative methods of assessment, the more likely they were to report feeling prepared to develop those types of assessments and to report being confident in their validity. The same pattern of results was found for more traditional types of assessment.

The study revealed that most experienced teachers (20 years or more) indicated that they used alternative methods of assessment more often than the least experienced teachers (6 years or less) did. Elementary school teachers reported using alternative assessment strategies significantly more often than did high school teachers. Finally, mathematics teachers reported using traditional methods of assessment much less frequently than did teachers in all other subject areas. This clearly shows that, the more experienced you are the better your knowledge in assessment as a teacher. This is because you can deploy or vary your assessment skills by using your experience acquired in the past.

Similarly, Schmidt (2010) conducted a quantitative search on learning from teaching experience: Dewey's theory and preservice teachers' learning. The researcher explored the value that six preservice teachers attributed to peer teaching, early field experiences, student teaching, and self-arranged teaching experiences engaged in during their university education. Consistent with Dewey's theory of experience, as the participants interacted with their

teaching experiences, they each created continuity among and derived their own meanings from them. This individualized aspect of learning was enriched as they also experienced the value of learning within a community of educators. His work revealed that meaningful learning from all types of teaching experience appeared to be fostered by a balance between doing (action) and undergoing (reflection), both individually and in community. Dewey's theory of experience also proved useful in illuminating possible reasons for similarities and differences in the teaching experiences that each participant valued.

This clearly shows that, the more experienced you are the better your knowledge in assessment as a teacher. This is because you can deploy or vary your assessment skills by using your experience acquired in the past.

Teachers' Test Item Construction Skills on the Usage of Test Blueprint in Basic Schools in the Cape Coast Metropolis

The second objective of the current study was to determine teachers' skills on the usage of test blueprint among basic school teachers in the Cape Coast.

The findings of this current study is consistent with assessment practices which included: using higher cognitive items, assessing individual students' participation in class, assessing problem solving skills, using assessment results to make decisions determining why students make mistakes, and using assessment results to make decisions as mentioned by (Airasian & Gullickson, 1994; Gronlund & Waugh, 2009; McMillan, 2005; Popham, 2006; Reynolds, Livingston, & Wilson, 2009).

Theses authors further recommended that teachers need to be knowledgeable and skillful in using assessment information in order to make informed decisions about students' learning, such as identifying students with

learning problems, remediation, counseling, and feedback. The current study suggested that teachers' skills and the use of assessment practices reported in this study do indicate that those who felt skilled were more likely to use assessment practices most often, that is they are more likely to use assessments results to make decisions about students learning, determine why students make mistakes, or even use higher order cognitive items to assess students' critical thinking skills. What can be implied from these results is that if teachers were more skilled in assessment practices, they are more likely to use them more. This calls for more skill training to make teachers competent in using test blueprint in their assessment practices.

How Teachers' Attitudes to Test Construction Affect Teachers' Use of Test Blueprint in Test Item Construction in Basic Schools in the Cape Coast Metropolis

The third research question in the current study was formulated to explore how attitude to test construction affect teachers' use of test blueprint in test item construction and it came out that that teachers have attitudes towards the use of test blueprint as the mean of means was above three (3).

The current study results are in line with the study conducted by Fox and Soller (2001), who examine authentic assessment strategies and tools employed by teachers in Malawi and found out that students in lower classes prefer working collaboratively using projects, computer-based simulation task, storytelling and demonstrations while students in upper classes also demonstrated high level performance in working competitively using writing samples, performance products, and graphic organizers. It was also revealed in the study that education systems that emphasize tests and examinations put some student at a disadvantage (Allen & Yen, 2012; Nampota & Wella, 1999).

The current results also confirm the study by Fook and Sidhu (2010) who conducted a study to investigate the different types of authentic assessment used in higher education in Malaysia. The study employed a qualitative research method and involved the use of instruments such as interview, document analysis and classroom observations to collect relevant data in the classroom. The researchers identified that different types of authentic assessment were used.

The study revealed that teachers employed the following assessment tools; portfolio (10%), article review (10%) performance product (20%), project (40%) and test (20%). The findings indicated that alternative and authentic assessment have more acceptances from students and should, therefore, be viewed as an alternative to traditional standardized assessment. The study again revealed that assessment practices in some subject areas like Mathematics, Science and Social Studies indicated favorable emphasis being given to formative assessment because 80% of the total marks have been allocated to on-going assessment and 20% was for the test. Moreover, students interviewed also agreed that project and portfolio assignment given were to a great extent real and authentic tasks that they could relate to their future workplace.

Oosterhof (2012) studied the assessment and grading practices of 19 high school mathematics teachers in the United States. Their study revealed that the most frequently used assessment tools were tests and quizzes and these determined about 77% of students' grades. Twelve of the nineteen teachers used other forms of assessment such as written projects, experiments, demonstrations or interviews with students. The study also revealed that

teachers recorded a very high level of student participation in the written projects and the experiments.

Teachers' Test Construction Anxiety in the Use of Test Blueprint in Basic Schools in the Cape Coast Metropolis

The penultimate research question was to explore how teachers' anxiety to test construction affect teachers' use of test blueprint in test item construction and it was revealed from the current study that teachers have anxiety on the use of test blueprint in test item construction. The results of the current study are in line with Ferguson, Frost and Hall (2012), who investigated into predictors of anxiety, depression, and job satisfaction in teachers at northern Ontario in the United States of America. They used data from self-report questionnaires. Factor analysis and multiple linear regression were performed to determine which sources of stress predict stress-related symptoms among teachers and they also explored job satisfaction as predicted by stress, depression, anxiety, years of teaching experience, gender, grade level assignment and position (part-time vs. full-time). The results indicated that workload and students' behaviour were significant predictors of depression in teachers in the study. They reported that, stress and depression had a significant and negative impact on job satisfaction.

In addition, the authors reported that, years of teaching experience was a significant and positive predictor of job satisfaction. Anxiety, gender, grade level, and position were not statistically significant predictors of teacher job satisfaction. Therefore, efforts made to improve workload, student behavior, and employment conditions may lead to reduced stress among teachers and thus lower levels of depression and anxiety. These results provided guidance

for teachers and administrators, as well as informed teacher retention efforts and attempts to improve teacher job satisfaction.

A comparison study was done, to look into the effects of stress inoculation training and classroom management training on teacher anxiety (Sharp & Forman, 1985). These two factors were compared in the study in which 60 teachers were assigned to either of these two treatments or a control group. Dependent measures included self-reported teaching and general anxiety, observations of motoric indicators of anxiety in the classroom, and observations of teachers' verbal classroom behavior. Pretreatment, posttreatment, and 4-week follow-up data were collected. In their study, both stress inoculation, and classroom management training were found to improve teachers' affect and behavior.

Therefore, one can say that the more teachers are being reminded and given training on classroom management the better it helps to reduce the pressure, anxiety and the stress they go through in their classrooms. This can also bring quality teaching and learning to promote learners results from low level to high level.

Furthermore, the current study results confirmed the study by Morton, Vesco, Williams and Awender (1997), who examined the nature of anxiety in student teachers. Education-related anxieties were explored using approximately 1,000 student teachers in Canada. It came out from their work that, anxiety factors (i.e., evaluation, pedagogical, class management, and staff relations), similar to those for British participants, emerged with evaluation anxiety being highest. A practice teaching experience generated reduced anxiety for both sexes, but more so for females, with the greatest reductions for evaluation and pedagogical anxiety.

In one study, conducted by Morton, Vesco, Williams and Awender (1997), participants reported anxieties prior to instruction (PRETEST), following instruction (POST-INSTR) and following practice teaching (POST-TEACH). Females showed higher anxiety ratings than males (PRETEST and POST-INSTR) but were comparable to males after practice teaching. Females in the lower grades division showed higher anxiety scores. Anxiety decreased between PRE-TEST and POST-INSTR for all four scales, and between POST-INSTR and POST-TEACH for evaluation, pedagogy and staff relations; however, class management anxiety did not decrease after practice teaching. Also, anxiety increased as placement grade level decreased. All models (demographic, experiential, and dispositional) were predictive but the best predictor was the psychological disposition to feel overwhelmed.

They concluded that, student-teacher anxieties are related to demographic variables, experiential variables, and dispositional variables. From the outcome of their study, it is obvious that trainee teachers who are learning to become teachers with support from a teacher training provider or an educational institution have anxiety. If these student-teachers don't go through a proper counseling session to be counseled not to entertained anxiety, they will see anxiety to be normal and continue to practice their profession in anxiety even when they graduate from their colleges of education and go to the field as professional teachers.

Teachers' Use of Test Blueprint Among Basic School Teachers in the Cape Coast Metropolis

The final research question was set to examine teachers' use of test blueprint among basic school teachers in the Cape Coast Metropolis and it was

generally indicated that teachers use test blueprint in their various schools when assessing learners.

The results of this study is in line with a study conducted by Alade, and Igbinosa (2014) who conducted a study to examined the table of specification and its relevance in educational assessment. One hundred and twenty (120) students were randomly selected from four departments, independent sample t-test and Pearson Product Moments Correlation were used in the analyses. The study results revealed a significant difference between table of specification and its relevance in educational assessment. The authors further indicated that teachers should endeavors to construct a well test blue print that will help improve the validity of teacher evaluation based on given assessment and teachers must ensure that the test constructed measure an adequate sampling of the class at all level of domains and teachers and students must comply with all the laid down when preparing table of specification in schools.

The resent study affirms the study conducted by DiDonato-Barnes, Fives, and Krause (2014) investigated whether instruction on a table of specifications (TOS) would influence the quality of classroom test construction. Fifty-three college undergraduates were randomly assigned to an experimental (exposed to the TOS strategy) and a comparison condition (no specific strategy support) and given materials for an instructional unit to use to construct a classroom test. Results of the multivariate analysis of covariance indicated that students were exposed to the TOS strategy in constructing a test with higher test content evidence. Further, analysis revealed that treatment participants were able to accurately complete the TOS tool and choose items that reflected the subject matter specified in the TOS tool.

The study is in line with Newman, Lim, and Pineda (2013) who investigated into content validity using a mixed methods approach and its application and development through the use of a table of specifications methodology. Their study found that there is paucity of detailed information in the literature on how to develop procedures for estimating content validity to increase trustworthiness of assessment instruments.

However, the current study contradicts the study by Musah, Al-Hudawi, Tahir, and Kamil (2015) who conducted a study on validity of teacher-made assessment via table of specification approach. The results showed that teachers exhibited a low understanding of the table of specification. The analysis revealed that the majority of them never attended courses concerning table of specification and were unable to build a comprehensive table of specification for the subjects they teach. The findings also demonstrated that teacher-made assessment was valid in terms of content validity. However, most of the teachers did not refer to the table of specification while building instruments for assessment. This indicates that teachers lack basic knowledge in designing a standard table of specification and they lack awareness on the importance of the table of specification.

Chapter Summary

The research findings indicate that teachers in the Cape Coast Metropolis are highly experienced in using the test blueprint to construct test items, as reflected by a mean score of 4.17 and a standard deviation of 100.9. Teachers also demonstrate a good level of skill, with a mean of 3.81 and a standard deviation of 0.902. In terms of attitudes, the results suggest that teachers in the Cape Coast Metropolis are slightly positive towards using the test blueprint, as indicated by a mean of 3.15 and a standard deviation of 1.21.

However, Cape Coast Metropolis Junior High School teachers experience moderate anxiety regarding the use of test blueprints, as shown by a mean score of 3.02 and a standard deviation of 1.18. Additionally, the teachers' use of the test blueprint shows a fairly positive influence, with a mean score of 3.54 and a standard deviation of 1.09. In the hypothesis testing, $H_0$4 was not supported, with a negative B value of -.057 and a p-value of .774, suggesting no significant effect. Conversely, $H_0$5, $H_0$6, and $H_0$7 were all supported with positive coefficients (B = .438, .438, and .080, respectively) and statistically significant p-values (.000 and .042), indicating a strong relationship between the tested variables.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Overview of the Study

The study sought to investigate teachers' use of test blueprint in test item construction. Specifically the study was designed to explore the influence of teacher characteristics on teacher use of test blueprint in test item construction at the basic schools in the Cape Coast Metropolis. The study answered five research questions and tested seven hypotheses. The descriptive survey design was used for the study. In all, 300 teachers out of 1244 teachers were selected from basic schools in the Cape Coast Metropolis to answer the self-designed five-point likert scale questionnaire voluntarily. The results were analysed using frequencies, percentages, One-Way Analysis of Variance (ANOVA) and simple linear regression.

Summary of Key Findings

1. From the study, the results revealed that the overall mean of respondents on teacher's experiences on the use of test blueprint was, M = 4.17, SD = 100.9. This implies that teachers are highly experienced in using the test blueprint to construct test items.
2. The study found the overall mean of respondents of teachers' skills on the usage of test blueprint was, M = 3.81, SD = .902. The results generally appear that teachers exhibit good level of skills on the usage of test blueprint.
3. From the study, the results showed that the overall mean of respondents of teachers' attitudes towards the use of test blueprint was, M = 3.15, SD = 1.21. This generally indicated that teachers have generally slightly positive attitudes towards the use of test blueprint.

4. The results of the study further indicated that the overall mean of the respondents of teachers' anxiety on the use of test blueprint was, *M* = 3.02, *SD* = 1.18. This generally suggests a moderate level of anxiety among teachers regarding the use of test blueprints in constructing test items
5. The results revealed that, the overall mean of the respondents of teachers' use of test blueprint was, (M = 3.54, SD = 1.09). This generally indicated that teachers use test blueprint in their various schools.
6. The results again revealed that there was no statistically significant gender difference in the mean score of teachers use of test blueprint for male teachers (M = 14.10; SD = 3.14) and female teachers [M = 14.21; SD = 3.22; t(298) = 298, p = .771).
7. The results further revealed that there is no statistically significant difference for the age groups: F(3, 296) = .232, p = .874.
8. The results further revealed that there is no statistically significant difference in years of working and teachers use of test blueprint, F(2, 297) = 1.417, p = .244.
9. The results further revealed that educational background [B = -.057, SE = .197, t = -.287, p = .774], was not found to influenced teacher's use of test blueprint.
10. The results further revealed that perceived ease of use influenced teachers use of test blueprint in test item construction, (B = .438; SE = .059; t = 7.375; p = .000).
11. The results further revealed that perceived usefulness influenced teacher's use of test blueprint in test item construction, (B = .438; SE = .055; t = 7.994; p = .000).

12. The results further revealed that teacher's attitude to test construction influenced their use of test blueprint in test item construction, (B = .080; SE = .039; t = 2.044 ; p = .042).

Conclusions

As revealed in the literature, designing tests is an important part of assessing students understanding of subject or course content and their level of competency in applying what they are learning or learnt of which the classroom teacher, the instructor or the assessor needs to consider the use of test blueprint. From the findings of the study, it was uncovered that teachers in the public Junior High Schools within the Metropolis of Cape Coast are highly experienced and have positive perception towards the use of Test Blueprint in test item construction.

However, the results of the study further indicated that teachers have a moderate level of anxiety regarding the use of test blueprints in constructing test items, this can be attributed too much workload, lack of time, environmental conditions at the work place or practical teaching pedagogy experience. It will be appropriate to encourage such teachers to go through a thorough councilling session to address and manage their anxiety. Peer collaboration, where teachers work in groups to develop test items and share best practices, can help reduce anxiety, foster positive attitudes and improve the overall quality of assessment practices in the basic schools within Cape Coast Metropolis.

Recommendations

Considering the research findings and the conclusion drown above the study recommended that:

1. Teachers should participate in continuous professional development workshops that focus on enhancing their skills in using test blueprints effectively. These workshops should provide hands-on training to address areas of uncertainty or anxiety about test construction, ensuring that teachers are both confident and competent in their use of the test blueprint. The focus should be on practical applications, common challenges, and innovative ways to integrate test blueprints into everyday assessment practices.
2. School authorities should establish mentorship programs where experienced teachers with a high level of competence in test blueprinting can mentor less experienced or anxious colleagues. Peer collaboration, where teachers work in groups to develop test items and share best practices, can help reduce anxiety, foster positive attitudes, and improve the overall quality of assessment practices in the basic schools within Cape Coast Metropolis.
3. Teachers should engage in reflective practices by regularly reviewing the outcomes of their test items and assessments. Using feedback from both students and colleagues, they can refine their use of test blueprints to create more effective and balanced assessments. Incorporating regular reflection and feedback mechanisms will help identify areas for improvement and encourage more strategic use of test blueprints in constructing valid and reliable tests.

Suggestions for Further Research

Taking into consideration the findings of the scope of the study it is recommended that impending research work should focus on the following areas:

1. Qualitative evaluation of constructing objective items and essay items constructed by classroom teachers in the Cape Coast Metropolis.
2. Factors teachers consider in constructing test blueprint to be used in setting quality test items in the Cape Coast Metropolis.
3. Students' satisfaction on the use of test blueprint as a guide in their studies towards examination in the Cape Coast Metropolis.
4. Qualitative research on teacher's use of test blueprint in test item construction in Basic Schools in Cape Coast.

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APPENDICES

UNIVERSITY OF CAPE COAST

COLLEGE OF DISTANCE EDUCATION

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Our Ref: CoDE/G/R/VOL.3/0016 **15th June, 2022**

The Chairperson
Institutional Review Board
University of Cape Coast
Cape Coast.

Dear Sir/Madam,

A LETTER OF INTRODUCTION: IVAN CLIFF ANDAM

The bearer of this letter is a student of the College of Distance Education, University of Cape Coast with student registration number ED/MEP/19/0003. He is pursuing a Master of Philosophy degree in Measurement and Evaluation. He is investigating the topic **"Assessment Practices in the Classroom: Teacher Use of Test Blueprint in Test Item Construction in Basic Schools in Cape Coast Metropolis".**

Kindly extend to him any curtesy he may require in relation to his research and postgraduate studies at the University of Cape Coast.

Thank you.

Yours faithfully,

Dr. Felix Kumedzro.

(**Coordinator**)

RESEARCH INSTRUMENT

UNIVERSITY OF CAPE COAST

FACULTY OF EDUCATIONAL FOUNDATION

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

QUESTIONNAIRE FOR TEACHERS

Dear Respondent,

The study seeks to examine the **Assessment Practices in the Classroom: Teacher Use of Test Blueprint in Test Item Construction in Basic Schools in Cape Coast**. Your full input will help make informed decisions about knowledge in Assessment Practices in the Classroom. It would therefore be appreciated if you could provide responses to **all** items on the questionnaire, and do it **honestly**. You are assured of complete **confidentiality** and **anonymity** of all information provided. **Nothing** will ever be published or reported that will associate your name with your responses to the survey questions. Therefore, you **should not** write your name or your school's name on any part of the instrument. Your participation in this study is **completely voluntary**. You are hereby consent to voluntarily participate in this study by providing responses to items of the various sections of this instrument.

Thank You.

Researcher's Details

Ivan Cliff Andam

Contact: 0209068999

Email: ivan.andam@ucc.edu.gh

SECTION A

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENT

1. **Age of respondent at last birthday** …… **(years)**
2. **Sex**
   - Male [ ]
   - Female [ ]
3. **Years of working Experience**
   - 1-5 years [ ]
   - 6-10 years [ ]
   - 11 years and above [ ]
4. **Educational Background**
   - Diploma with Education [ ]
   - Bachelors with Education [ ]
   - Bachelors without Education [ ]
   - Masters with Education [ ]
   - Masters without Education [ ]
   - Others, specify ……
5. **Subject Area of teaching:**
   - Please specify ……

SECTION B

TEACHER'S EXPERIENCES ON THE USE OF TEST BLUEPRINT

On the table below, indicate with a tick [√] your understanding to the statements that truly measures and reflects your perception about your experiences on the usage of test blueprint in test item construction.

Directions to guide your response;

SA = Strongly Agree, scored as 5, A = Agree, scored as 4, N=Neutral, scored as 3, D = Disagree, scored as 2 and SD = Strongly Disagree scored as 1.

Codes	**Statements**	*SA*	*A*	*N*	*D*	*SD*
PE1	When I use blueprint: I am able to determine what topic is being stressed and the amount of time spent on the topic during teaching and learning					
PE2	I am able to assist in the preparation of tests that reflect what students have learnt					
PE3	It helps me to cover more areas in preparation for test items					
PE4	I experience the production of valid and well robust test					
PE5	It helps me to assess the instructional objectives of each topic					
PE6	I appropriately reflect on subject goals and the areas to be assessed					
PE7	It helps me to include the appropriate item formats for the skills being assessed					
PE8	I am able to demonstrate to students the topics of value.					

SECTION C

TEACHER'S SKILLS ON THE USAGE OF TEST BLUEPRINT

On the table below, indicate with a tick [√] your understanding to the statements that truly measures and reflects the skills you exhibit in the usage of test blueprint in test item construction.

Directions to guide your response;

SA = Strongly Agree, scored as 5, A = Agree, scored as 4, N=Neutral, scored as 3, D = Disagree, scored as 2 and SD = Strongly Disagree scored as 1.

Codes	**Statements**	*SA*	*A*	*N*	*D*	*SD*
SK1	I state the purpose of the test in my blueprint when constructing test items					
SK2	I specify the construct to be measured in my blueprint					
SK3	I follow the principles of test construction for each format in my blueprint					
SK4	I match learning outcomes to the items in my blueprint					
SK5	I use the blueprint to construct test items when it is time to assess learners					
SK6	I use questions directly from text books when using blueprint					
SK7	I ask any other colleagues to help when using blueprint					
SK8	I ask colleagues in subject area to review test items in my blueprint					
SK9	It helps me to consider the time to be spend on individual test item.					

SECTION D

TEACHER'S ATTITUDES TOWARDS THE USE OF TEST BLUEPRINT

On the table below, indicate with a tick [√] your understanding to the statements that truly measures and reflects your attitudes towards the use of test blueprint in test item construction.

Directions to guide your response;

SA = Strongly Agree, scored as 5, A = Agree, scored as 4, N=Neutral, scored as 3, D = Disagree, scored as 2 and SD = Strongly Disagree scored as 1.

Codes	**Statements**	*SA*	*A*	*N*	*D*	*SD*
AT1*	I feel test blueprint is difficult to design					
AT2*	The use of test blueprint is so demanding					
AT3*	I feel lazy to use itest blueprint in test construction					
AT4*	I think it is unnecessary to use test blueprint in my subject area.					
AT5*	I can construct test items without the use of test blueprint					
AT6*	Test blueprint does not really have any influence on test items.					

***Reverse coding*

SECTION E

TEACHER'S ANXIETY ON THE USE OF TEST BLUEPRINT

On the table below, indicate with a tick [√] your understanding to the statements that truly measures and reflects the anxiety of basic school teachers in using test blueprint in test item construction.

Directions to guide your response;

SA = Strongly Agree, scored as 5, A = Agree, scored as 4, N=Neutral, scored as 3, D = Disagree, scored as 2 and SD = Strongly Disagree scored as 1.

Codes	**Statements**	*SA*	*A*	*N*	*D*	*SD*
AN1	The use of test blueprint is time consuming					
AN2	The use of test blueprint is demanding					
AN3	There is no training or orientation on the use of test blueprint					
AN4	The school assessment system makes it difficult to use test blueprint					
AN5	Lack of support from the school authorities in terms of logistics and facilities					
AN6	Lack of motivation from school authorities					
AN7	Inadequate time to prepare in terms of gathering information and materials to be used of test blueprint.					
AN8	Some topics are difficult to be assessed using the various levels of the Bloom's Taxonomy.					

SECTION F

TEACHER'S PERCEIVED EASE OF USE OF TEST BLUEPRINT

On the table below, indicate with a tick [√] your understanding to the statements that truly measures and reflects how perceived ease of use affect basic school teachers' usage of test blueprint in test item construction.

Directions to guide your response;

SA = Strongly Agree, scored as 5, A = Agree, scored as 4, N=Neutral, scored as 3, D = Disagree, scored as 2 and SD = Strongly Disagree scored as 1.

Code	**Statement**	**SA**	**A**	**N**	**D**	**SD**
PEU1	Using test blueprint to construct test item is easy					
PEU2	I always use blueprint to construct test item					
PEU3	I have been recommending the use of test blueprint in item construction to friends					
PEU4	Pupils or learner use the blueprint to know areas where questions are coming from.					
PEU5	Test blueprint improves consistency across test forms.					

SECTION G

TEACHER'S PERCEIVED USEFULNESS OF TEST BLUEPRINT

On the table below, indicate with a tick [√] your understanding to the statements that truly measures and reflects the extent to which perceived usefulness of test blueprint in test item construction affect the basic school teacher in test item construction.

Directions to guide your response;

SA = Strongly Agree, scored as 5, A = Agree, scored as 4, N=Neutral, scored as 3, D = Disagree, scored as 2 and SD = Strongly Disagree scored as 1.

Code	**Statement**	**SA**	**A**	**N**	**D**	**SD**
PUN1	The blueprint guides me to set questions					
PUN2	It serves as a study guide to the pupils					
PUN3	Its proportionate items within a curriculum area that assess different skills.					
PUN4	It addresses items from different cognitive processing levels and skills.					
PUN5	It helps me to know the total number of items I want to set.					

SECTION H

TEACHERS' USE OF TEST BLUEPRINT

On the table below, indicate with a tick [√] your understanding to the statements that truly measures and reflects the extent to which teacher's use of test blueprint in test item construction affect the basic school teacher in test item construction.

Directions to guide your response;

SA = Strongly Agree, scored as 5, A = Agree, scored as 4, N=Neutral, scored as 3, D = Disagree, scored as 2 and SD = Strongly Disagree scored as 1.

Code	**Statement**	**SA**	**A**	**N**	**D**	**SD**
UTB1	I use test blueprint for every test item I write					
UTB2	The use of test blueprint improves the quality of my test items.					
UTB3	I invest all my time to use test blueprint in test item construction					
UTB4	The use of test blueprint is the best way to follow to construct good test items.					