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BASIC SCHOOL TEACHERS' CONCEPTIONS AND PRACTICES OF ASSESSMENT IN THE SISSALA EAST MUNICIPALITY

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DECLARATION

Student's Declaration

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

Signature: ……..……

Date: ……..…

Supervisor's Declaration

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

Supervisor's Name: Dr. Isaac Eshun

Signature: ……..……

Date: ……..…

DEDICATION

Dedicated to my wife, my children, and in memory of my late father and mother

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ABSTRACT

This study employed a sequential explanatory mixed method design to examine basic school teachers‟ classroom assessment conceptions and practices in the Sissala East Municipality in the Upper West Region of Ghana. Specifically, the study sought to explore the types of teachers‟ classroom assessment conceptions and practices, their demographic characteristics that influence their assessment conceptions and practices and as well as the relationship between teacher‟s conceptions and practices. Quantitative data gathered from 203 respondents were analysed using mean, Manova, t-test, Anova and Pearson product-moment correlation. In the follow-up qualitative phase, semi-structured interviews were undertaken with 12 participants and the data subjected to interpretive thematic analysis. The findings revealed that the participants demonstrated positive conceptions of assessment as a means for ensuring student and school accountability as well as improving teaching and learning, with assessment for student accountability yielding the highest mean value. Also, the findings revealed that teachers mostly employ traditional assessment methods than alternative assessment tools. Moreover, except gender, other demographic characteristics did not impact on their assessment conceptions. Furthermore, gender, age, assessment training, teaching experience and class teaching level impacted on the teachers‟ use of assessment methods. A significant positive relationship was found between teachers‟ assessment conceptions and certain tools and methods of assessment. It was recommended among other issues that regular in-service training in assessment be conducted for teachers in order for them to be up-to-date and also develop their skills and use of appropriate alternative classroom assessment practices.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Assessment of students‟ learning is pivotal in any educational enterprise. Through assessment, information is provided to students, teachers, parents and educational authorities on the quality of teaching and learning. Hence, assessment of learners is a significant teacher activity in the classroom, for assessment serves as a foundation for the decisions made about students‟ learning in the classroom (McMillan, 2008 cited in Okyere & Larbi, 2019). Very often, teachers make regular decisions about how to go about their teaching; before, during and after teaching. In this regard, assessment influences decisions that the teacher makes in the classroom. Therefore, there can be no sound decision making about students‟ learning and effective teaching devoid of classroom assessment (Okyere, Kuranchie, Larbi & Twene, 2018).

According to Nitko (2001), cited in Okyere and Larbi (2019), assessment involves collecting information purposely for the taking of decisions on students‟ learning, curricula, programmes, and educational policy. Brown (2011) explains assessment as a process of interpreting information regarding student achievement using a multitude of ways or practices. Also, Okyere et al. (2018) view assessment as an act of obtaining data about students‟ learning, analyzing and synthesizing information to advance the quality of their learning. Similarly, the National Council for Curriculum and Assessment (NaCCA) (2019) notes that assessment is “a process of collecting and evaluating information about learners and using the information to make decisions to improve their learning” (p.27). From the above, assessment is pivotal in any instructional process.

Assessment can be used for many different purposes at the national, local, and classroom levels. Classroom assessment could be carried out to serve accountability purposes for ascertaining the extent, to which students have learned; or to plan and improve instruction in educational contexts (Danielson, 2008 cited in Azis, 2015). These two purposes occasionally complement one another, and sometimes contend or contrast one another, signifying assessment as an intricate process (Earl, 2003).

Typically the reason why teachers may assess their students is to collect information on their students‟ performance to offer feedback to them about how well they have been doing in terms of the set instructional objectives and standards but also to teachers about how effective they have been in their instructional activities and also to vary teaching methods to satisfy students‟ learning needs (Amedahe & Asamoah-Gyimah, 2016; Black & William, 2009; Nsikak-Abasi, & Akanaono, 2017; Okyere et al., 2018). However, teachers are not the only users of information gathered on their students through assessment. School administrators might need such information to make grading, promotion and certification decision. Parents need the information to know how well their wards are doing and how they could support them. Students themselves are interested to know how they are performing through feedback provided to them by teachers through assessment and also to plan their learning needs. According to Oduro (2015), assessments, when infused into the instructional process serve as a catalyst in motivating students to learn.

There exist several classroom assessment strategies that can be used to obtain information about students‟ achievement categorized into traditional and alternative strategies (Rahim, Venville, & Chapman, 2009, cited in Thomas, 2012). Traditional strategies or teacher-centred strategies consist of tests, textbook exercises, quizzes, and exams. In contrast, alternative strategies are mostly student-centred strategies

such as group work, presentations, concept maps, journals, and portfolios (Rahim, Venville, & Chapman, 2009, cited in Thomas, 2012).

Generally, formative and summative assessments are the main forms of assessments. Formative assessment has its main focus to monitor and improve upon students‟ learning and classroom activities (Amedahe & Asamoah-Gyimah, 2016; Nsikak-Abasi, & Akanaono, 2017; Nortvedt, & Buchholtz, 2018). Formative assessment occurs during instruction. It is also called „assessment for learning‟. It is diagnostic as it is used to monitor students learning as well as identify students learning difficulties to offer remedial measures where applicable to enhance students learning (Ajogbeje, 2013; Amua-Sekyi, 2016; Okyere et al., 2018).

Feedback is a vital feature in formative assessment. Providing timely feedback to students enables them to recognize their strengths and weakness in learning and improve on them. Feedback goes beyond providing scores on performance to students to engaging them in dialogue, discussing thoroughly with students to understand better the thought processes underlying students‟ performance (Amua-Sekyi, 2016). According to Okyere et al. (2018), formative assessment processes enable students to learn from their mistakes, be more experimental and develop more desirable higher cognitive skills. Some formative assessment procedures are class tests, project work, assignments, presentations, quizzes.

There may be several factors that influence the planned assessment practices of teachers. For instance, the individual conceptions of assessment by itself and their varied purposes may influence their judgment as to what assessment method that they will use in their classrooms. Teachers‟ conceptions may have implications as to how they believe that their students learn (Brown, 2002). One more factor may be their knowledge assessment tools, strategies and methods; and how and when to employ

them in their lessons. Thus, it is significant to explore those alluded factors to appraise the professional capability of the basic teachers, particularly on assessment (Edwards, 2013).

Xu and Brown (2016) note that "conceptions of assessment denote the belief systems that teachers have about the nature and purposes of assessment, and that encompasses their cognitive and affective responses" (p. 56). Brown has uniquely researched teachers‟ assessment conceptions. Brown (2002; 2004; 2006; 2008) noted that the conceptions teachers hold of assessment can be categorized under the following: (1) for improving instruction and learning (Improvement); (2) for making learners responsible for their learning (student accountability); (3) making teachers and schools accountable (school accountability), and; (4) irrelevant and of no consequence to the activities of teachers and learners (irrelevance).

Studies concerning teachers‟ beliefs have recognized that teachers‟ beliefs about their practices shape how they carry out their activities (e.g. Barnes, Fives, & Dacey, 2015; Fives & Buehl, 2012). By implication, the conceptions teachers‟ hold of assessment impinges on their preferences of assessment tools, interpretation and use of assessment results (Brown, 2008).

Harris and Brown (2009) have noted that the conceptions of assessment teachers hold are of great consequence as they influence their assessment practices. Also, Moiinvaziri (2015) opined that the techniques teachers employ in assessing students‟ learning differ based on their notion of assessment, teaching and learning. Therefore, it is essential to consider their assessment beliefs to appreciate their practices well and if necessary, find ways to improve their assessment practices (Brown, Lake & Matters, 2011). According to Brown (2008), teachers‟ positive notions of assessment such as assessment improves students‟ learning has given rise

to useful assessment practices; whiles their negative views of assessment of not relevant to students learning could play an important role in teachers‟ acceptance of assessment policies.

There is a confirmation that teachers‟ conceptions of assessment influence their assessment practices (Azis, 2015; Brown, 2009; Dayal & Lingam, 2015). Also, Brown and Harris (2009); and Brown, Lake and Matters (2009, 2011), have established that policies and cultural priorities of societies influence teachers‟ conceptions, hence teachers‟ conceptions vary from one society to another. Therefore, it is significant to identify how teachers conceive and utilize assessment, especially in the Ghanaian context.

Assessment topics are not as much investigated and researched in the Ghanaian context. Curriculum planners and assessment experts may perhaps not empirically well-versed on how teachers conceive assessment. For this reason, when these assessment experts and curriculum designers devise their guidelines and policies for assessment, the set guidelines may probably not wholly correspond with teachers‟ assessment beliefs, which invariably impact their practices. This ultimately will affect the achievement of intended curricular goals and visions.

According to Yan and Cheng (2015), teachers‟ educational beliefs serve as a means for the adaptation of policy into practice. For this reason, the establishment of novel assessment interventions should consider teachers‟ notions of the purpose and nature of assessment and how they make use of it. Also, it is very necessary to ascertain the alignment of teachers‟ assessment conceptions to their intended assessment practices. This is because; studies have indicated that more often than not, teachers struggle to transfer their beliefs into classroom practices (Heitink, Van der Kleij, Veldkamp, Schildkamp, & Kippers, 2016).

1.2 Statement of the Problem

In Ghana, studies on assessment and its practices among teachers have been well researched and documented (e.g. Amedahe, 1989; Amoako, 2018; Bordoh, Bassaw & Eshun, 2013). However, the researches in this area focused attention on teachers‟ grading practices (Amedahe, 1989; Anhwere, 2009), formative assessment practices among senior high school teachers and its impact on students learning (Sofo, Ocansey, Nabie & Asola, 2013), among Colleges of Education tutors and the strategies they use (Bekoe, Eshun & Bordoh, 2013; Eshun, Bordoh, Bassaw & Mensah, 2014), among distance education tutors (Amoako, 2018) as well as among Kindergarten school teachers in the country (Asare, 2015). These investigations have not particularly paid attention to assessment conceptions teachers hold for their practices, specifically in the Ghanaian educational system. The examined practices may well be meant to enhance student learning, or they are carried out to satisfy accountability or administrative purposes (Brown, Lake & Matters, 2011).

Studies have revealed that teachers‟ practices of assessment echo their assessment conceptions (Azis, 2015; Harris & Brown, 2009; Dayal & Lingam, 2015). In other words, the way teachers conceive assessment signifies how they make use of assessment in their work. Also, according to Nichols and Harris (2016), different educational contexts influence teachers‟ assessment conceptions. Researches on teachers‟ assessment conceptions have been carried out in different educational backgrounds; however, such studies in Ghanaian contexts are somewhat inadequate.

Also, studies on classroom assessment indicate that teachers‟ beliefs regarding the purposes of assessment are influenced by several independent variables, such as the teacher‟ gender (Brown & Gao, 2015; Ndalichako, 2015), the teaching experience of the teacher (Brown & Gao, 2015; Sahikarakas, 2012; Vardar, 2010), and the

teacher‟s exposure to professional assessment training (DeLuca, Chavez & Cao, 2013; Smith, Hill, Cowie & Gilmore, 2014) among others. There appear to be inadequate studies on how these factors shape teachers‟ conception of assessment in Ghana

Besides, the studies on conceptions of assessment have typically employed quantitative surveys that do not integrate the participants‟ voices to explain their conceptions. This means that quantitative findings may not completely depict and clarify teachers‟ assessment beliefs and practices.

Moreover, while there is on the rise a body of studies that have investigated different aspects of teacher assessment practices, there are inadequate empirical studies on whether teacher assessment practice is associated with the different conceptual beliefs and understandings about assessment. Therefore, this thesis aspires to deal with the research gaps identified above by using mixed-methods to explore the conceptions and practices basic school teachers (Primary and Junior High) hold about classroom assessment within a Ghanaian context and how their conceptions are connected to their assessment practices.

1.3 Purpose of the Study

This research was aimed at exploring the basic school teachers‟ conceptions and practices of assessment in the Sissala-East Municipality.

1.4 Objectives of the Study

The objectives of the study were to:

1. Explore the assessment conceptions of basic school teachers‟ in the Sissala-East Municipality.
2. Determine the assessment practices of basic school teachers in the Sissala-East Municipality.
3. Assess how basic school teachers‟ conceptions of assessment and classroom assessment practices differ based on teacher variables (e.g. level of teaching, teaching experience, training in assessment, gender and age, etc.).
4. Examine the relationship between the basic school teachers‟ conceptions of assessment and their classroom assessment practices.

1.5 Research Questions

The research questions which guided the study were:

1. How do basic school teachers in the Sissala East Municipality conceive of assessment?
2. What are the assessment practices of basic school teachers in the Sissala East Municipality?
3. To what extent do basic school teachers‟ assessment conceptions and classroom practices differ based on teacher variables (e.g., level of teaching, teaching experience, training in assessment, gender, and age)?
4. To what extent do basic school teachers‟ assessment conceptions relate to their classroom practices?

1.6 Significance of the Study

The findings of the study would bring to fore the conceptions that basic school teachers have about assessment as well as its practices. This may, in turn, help them improve their classroom assessment practices. The key beneficiaries for this study would be policy-makers, administrators and teachers, and students. Besides, the study may benefit researchers who wish to pursue further study on the teachers‟ conceptions of assessment and practices.

First, the study would inform policy-makers concerning the assessment conceptions and practices of basic school teachers. Given that this study would be carried out on a small population of teachers in contrast to the entire population of teachers in the country, it would serve as a model study in which the policy-makers and curriculum planners can make use of if they search for teacher‟s assessment conceptions and practices. Determining these conceptions and practices would enable the Ghana Education Service to develop professional in-service training courses for basic school teachers in classroom assessment based on the knowledge of what they are already doing or not doing right concerning classroom assessment. Moreover, the results from the study can further guide national policymakers and curriculum designers so that they would further revise and develop appropriate programmes for teacher training in planning and designing effective assessment for classroom practices.

Second, the findings would also provide valuable information to basic school administrators to develop improved assessment practices guidelines for teachers. Hence, teachers would also be beneficiaries of this study as they would develop aspects of their personal and professional improvement. Also, the findings of this

study would prompt teachers to ponder the consequences of their conceptions and intended practices.

Third, given that assessment is done to obtain information on students‟ learning, students would be the secondary beneficiaries of this study. This is because teachers would undergo professional development that would enable them to assess students appropriately and properly. Consequently, students would accomplish the curricular goals as the teachers‟ assessment conceptions would have been aligned to that of their intended practices as provided by the NaCCA policies on classroom assessment.

Finally, this study could be used as a reference for further studies about the assessment conceptions and practices of teachers at the basic school level and in specific subject areas as well. Also, it could trigger research in studying the alignment of educators‟ practices of assessment with the implementation of the policy guidelines on classroom assessment. Besides, large scale research could be conducted with the entire population of teachers in different parts of the country. Moreover, this study is important because of its one of the few studies that employed a mixed-methods research design to uncover a more profound understanding of teachers‟ assessment conceptions than earlier quantitative studies.

1.7 Delimitation of the Study

The study should have ideally assumed a national dimension. However, geographically, it was delimited to selected basic school teachers in the Sissala East Municipality of Ghana. Content-wise, the spotlight of the study was on teachers‟ conception and practices of assessment.

1.8 Organisation of the Study

The study is made up of six chapters. Chapter One is the introduction consisting of the background to the study, the statement of the study‟s problem, purpose and objectives, research questions, study significance, delimitations, and a summary of the chapters.

Chapter Two outlines the relevant literature review on the concept of assessment and purposes, approaches of assessment, conceptions of assessment, empirical studies on teachers‟ conception of assessment, practices of assessments, the relationship between teachers‟ conception and practice of assessment as well as teacher variables that influence them. It also provides a discussion of the theoretical and conceptual framework for the study.

Chapter Three is the methodology chapter, provides the philosophical perspective guiding this study. It encompasses the research philosophy, research design of the study, sample and sampling techniques, instrumentation, data collection procedures, data analysis, as well as ethical issues.

Chapter Four reports the findings of this study. It provides quantitative results from descriptive statistics; inferential statistics results as well as qualitative results, whilst chapter Five provides a discussion of both quantitative and qualitative findings.

Chapter Six provides a summary of the study and concludes based on the research questions and the implication of the findings. It further indicates the limitations and recommendations made to various stakeholders in Ghana.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews the literature related to the issues of the study. The literature is reviewed under the following topics: the meaning of assessment and its purposes; assessment approaches; kinds of assessment methods and tools; the meaning of conception; the importance of studying conceptions of assessment; teachers conception of assessment; empirical studies employing Teachers Conception of Assessment (TCoA) and other related studies; research on the relationship between teachers‟ conceptions of assessment and teacher variables; teacher assessment practices; factors influencing teacher‟s assessment practices; the relationship between conceptions and practice of assessment; theoretical perspective and framework; and summary and gaps in the literature.

2.1 Meaning of Assessment and its Purposes

Assessment of students‟ learning is pivotal in any educational enterprise as such teachers cannot avoid assessing their students. Assessment has been explained or defined variously. According to Nitko (2001) cited in Okyere and Larbi (2019), assessment involves collecting information purposely for the taking of decisions on students‟ learning, curricula, programmes, and educational policy. Brown (2011) explains assessment as a process of interpreting information regarding student achievement using a multitude of ways or practices. Also, Okyere et al. (2018) view assessment as an act of obtaining data about students‟ learning, analyzing and synthesizing information to advance the quality of their learning.

Similarly, the National Council for Curriculum and Assessment (NaCCA) (2019) notes that assessment is “a process of collecting and evaluating information

about learners and using the information to make decisions to improve their learning" (p.27). Black and William (1998) cited in Yetkin (2018) define assessment as "all those activities undertaken by teachers, and by the students in assessing themselves, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged" (p. 134). Morris and Adamson (2010) (cited in Oduro, 2015, p. 29) see assessment as, "those actions we undertake to obtain information about pupils‟ knowledge, attitudes or skills" (p.127) Similarly, Gonzales (2003) cited in Yetkin (2017) sees assessment as "a systematic gathering of information about students‟ performance that enables teachers to monitor their learning" (p.89). To Sadler (2005) cited in Nguon (2013), assessment refers to "the process of forming a judgment about the quality and extent of student achievement or performance, and therefore by inference a judgment about the learning that has taken place" (p. 11). McMillian (2018) views assessment as the "gathering, interpreting, and using evidence of student learning to support teacher decision making in a variety of ways" (p.14).

From the above, assessment is a complex process and pivotal in any instructional process. The different definitions of assessment of these authors are due to their varied conceptions. From the above definitions, assessment can perform two major purposes - formative and summative. For instance, NaCCA (2019), Black and William‟s (1998) (cited in Yetkin, 2018) and Gonzales‟ (2003) (cited in Yetkin, 2017) definitions entail the formative purpose intended to improve student learning. On the contrary, Brown‟s (2011) and Sadler‟s (2005) (cited in Nguon, 2013) definitions are consistent with a summative purpose which focuses on the evaluation of students‟ performance or learning. Assessment in this study is taken to mean the use of instruments and processes such as quizzes, assignments, projects, questioning or

observations for gathering evidence about student learning (Kippers, Wolterinck, Schildkamp, Poortman, & Visscher, 2018; Van der Kleij, Vermeulen, Schildkamp, & Eggen, 2015).

Assessment could be carried out to serve accountability purposes for ascertaining the extent, to which students have learned, or to plan and improve instruction in educational contexts (Danielson, 2008, cited in Azis, 2015). These two purposes occasionally complement one another, and sometimes contend or contrast with each other, making classroom assessment as a very intricate process (Earl, 2003).

Typically the reason why teachers may assess their students is to collect information on their students' performance to offer feedback to them about how well they have been doing in terms of the set instructional objectives and standards but also to teachers about how effective they have been in their instructional activities and also to vary teaching methods to satisfy students‟ learning needs (Amedahe & Asamoah-Gyimah, 2018; Black & William, 2009; Nsikak-Abasi & Akanaono, 2017; Okyere et al., 2018). However, teachers are not the only users of information gathered on their students through assessment. School administrators might need such information to make grading, promotion and certification decision. Parents need the information to know how well their wards are doing and how they could support them. Students themselves are interested to know how they are performing through feedback provided to them by teachers through assessment and also to plan their learning needs. According to Oduro (2015), assessment, when infused into teaching and learning serve as a catalyst in motivating students to learn. Accordingly, assessment is, therefore, an important mechanism for enhancing students‟ learning. In this regard, Brown (2004) noted that assessment techniques and strategies should support and encourage student learning instead of simply quantifying students‟ learning.

In the same way, Boud and Falchikov (cited in Nguon, 2013) noted that assessment is not only for serving grading and certification purposes but also for enhancing further learning. Furthermore, Boud (cited in Nguon, 2013) further postulates that apart from assessment intend to satisfy the immediate needs of students on a course; it also serves as a basis for students to use assessment for lifelong learning. Mcmillian (2018) noted that teachers use assessment information in a variety of ways for: (1) diagnosing of student learning strengths, misunderstandings, weaknesses, and errors; (2) monitoring of student progress toward learning outcomes; (3) improving student learning and motivation; (4) assigning grades; (5) providing feedback to parents; and (6) improving instruction (p.14).

McMillan (2018) asserted that thinking of classroom instruction put into stages that occur before, during and after is associated with three types of assessments. These are pre-assessment, embedded formative assessment, and summative assessment. Pre-assessment, as the name suggests, involves all those activities that the teacher carries out before instruction to establish students‟ interests, knowledge, skills, and attitudes to aid him to design his lessons. Embedded formative assessment takes place in the course of instruction to monitor students‟ progress, offer feedback, and take steps for subsequent instructional processes. Summative assessment is conducted after instruction, to ascertain students‟ achievement in terms of prior outcomes, and also offer feedback to guide the next instructional or teaching and learning activities.

2.2 Assessment Approaches

Researchers have devised models of assessment approaches that indicate assessment uses or practices. Sheppard (2000) (as cited in Gonzales and Aliponga, 2012) noted that the traditional notion of assessment is greatly influenced by the

behaviourist learning theory, objective and standardized testing. However, for some time now, there has been a drift from behaviourist to a constructivist learning paradigm (Tulu, Tolosa & JF., 2018; Gonzales & Aliponga, 2012). Rooted in a constructivist theoretical underpinning, three distinct but interrelated kinds of assessment purposes and uses have been formulated. These are Assessment for Learning (AfL), Assessment as learning (AaL), and Assessment of Learning (AoL) (Earl, 2003; Berry, 2008; Gonzales and Alinponga, 2012, Sanga, 2016). Both assessment as learning and assessment for learning are viewed as formative assessment and assessment of learning as summative assessment (Berry, 2008; NaCCA, 2019).

2.2.1 Assessment of learning (AoL) or summative assessment

Assessment of learning (AoL) or Summative assessment is concerned with how students have performed at the end of the instructional process (Amua-Sekyi, 2016; Gonzales & Aliponga, 2012; Mekonnen, 2014; Okyere et al., 2018). It focuses on measuring the extent of learning in students to certify student achievements or assign grades and used for categorising students and reporting these judgments to others (Gonzales & Aliponga, 2012, Sanga, 2016). It is the assessment of a student‟s learning at a certain stage that sums up all prior learning and achievements that had occurred before it (Taras, cited in Asare, 2015). According to Berry (2008), AoL is allied to behaviourist learning perspective that seeks out to determine the level to which learners have attained the requirements of predetermined learning targets and hence places a premium on the products rather than on the processes of learning.

According to Brown (2003), in summative assessment paradigm, three key purposes existed: reporting student progress and attainment; summing up the achievement for certification, selection, and placement purposes; and providing data

for ascertaining the quality and effectiveness of a school, system and teacher. According to NaCCA (2019), the emphasis of summative assessment is to appraise the learner‟s development and achievement. In short, summative assessment provides evidence of a students‟ competence in a programme of study. According to Ministry of Education (MoE) (2018), AoL has well-established guidelines that include: (1) a number or letter grade (summative); (2) comparing a learner‟s achievement with the standards; and (3) communicating results to learner and parents, where necessary. In summary, from the above, the AoL approach is for monitoring learning mainly for accountability and certification purposes.

Assessment of learning is usually a one-shot activity at the ending of a study program of a given course(s) to examine what the students have learned. It can take the form of large scale assessment in a particular subject area, conducted by a body like the West African Examination Council, in which a certain grade level of students is assessed across the board with the same assessment tool (Asare, 2015). It may also be conducted on a minute scale within a class setting to report to parents about students learning (Earl, 2003 cited in Asare, 2015). Summative assessment may normally be but not always at the year ending. It is “based on the accumulation of the progress and achievements of the learner throughout the year in a given subject, together with any end-of-year tests or examinations” (Ministry of Education, 2018, p35). In this regard, formative and summative assessments are not in opposition; but interrelated and complementary.

According to NaCCA (2019) and MoE (2018), summative assessment in Ghana‟s schools should take the form of‟; (1) final examination (end of studying a programme; this is truly summative assessment); (2) end of term examination; (3)

projects (could be assessed for formative purposes); and (4) portfolios (also assessed for formative purpose during its development).

2.2.2 Assessment for learning (AfL)

Assessment for learning (AfL), a constructivist perspective of teaching and learning has originated in divergence to assessment of learning (AfL), a behaviourist perspective or traditional approach of teaching and learning in classrooms and schools (Assessment Reform Group, 2002; Berry, 2008; Flórez & Sammons, 2013). This means that in AfL there is a paradigm move from behaviouristic viewpoints of assessment that views assessment and instruction as separated from each other to an assessment philosophy where assessments are performed, both informally and formally, alongside classroom instruction to improve student learning (Davison & Leung, 2009; Earl, 2003; Flórez & Sammons, 2013). This means that, in AfL, the focus is shifted from summative assessment to formative assessment (Earl, 2003).

According to Assessment Reform Group (2002), AfL can be defined as "the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there" (p. 2). Klenowski (2009) described AfL as "part of everyday practice by students, teachers and peers that seeks, reflects upon and responds to information from dialogue, demonstration and observation in ways that enhance ongoing learning" (p. 264). Earl (2003) noted that AfL is interactive and occurs during the period of learning, usually on many times with assistance from teachers, and not at the end. According to Black, Harrison, Lee, Marshall, and Wiliam (2004), AfL is assessment for whose foremost priority is to promote the objective of advancing students‟ learning and hence at variance with assessment constructed mainly to be used for certifying students‟ competence or ranking students or make students accountable.

Laveault and Allal (2016), define AfL as "the collection and interpretation of assessment information whose intentional use enables teachers and students, acting individually or interactively, to reach decisions that have a positive impact on instruction and learning" (p.7). From the above definitions, the major focus of AfL is for improving teaching and learning.

According to Berry (2008), AfL is aligned to the constructivist notion of learning which "aims to understand how the learner learns, what the learner can do or cannot do, and makes some deliberations and decisions on how to help the learner learn" p. 10. AfL is meant to further improve student learning by carrying out assessment measures alongside instructional processes; as such, it is sometimes referred to as formative and diagnostic assessment (Sanga, 2016). According to Berry (2008), whiles AoL focuses on the product of learning; in contrast, AfL put more prominence on the process of learning.

According to Sanga (2016), in AFL, feedback is provided to students on the progress of their learning by teachers. Also, teachers adjust their instructions to cater to their students‟ needs. Thus, the primary aim of AfL or Formative Assessment is to monitor and improve upon students‟ learning during classroom interaction processes with them (Amua-Sekyi, 2016; Nsikak-Abasi & Akanaono, 2017; Nortvedt & Buchholtz, 2018; Okyere et al., 2018). The AfL perhaps is the more teacher-driven notion of evaluations and checks on how to improve student learning, engagement, and performance (Tulu et al. 2018, citing Black et al., 2007). Given that its main focus is to enhance students‟ learning, AfL to find students‟ learning deficiencies and appropriate remediation where needed to enhance the students‟ performance (Ajogbeje, 2013; Nortvedt & Buchholtz, 2018).

According to the Ministry of Education (2018), AfL in the Ghanaian context is: (1) both diagnostic or initial assessment and formative assessment; (2) focuses on multiple sources of information (e.g. informal and formal questions and answers, portfolios, teacher observation, conversation, reflection journals, in-class presentations); (3) involves the provision of descriptive verbal or written feedback that focuses on strengths, challenges, and the next steps; (4) involves teachers to verifying learners‟ understanding and amending their instruction to keep them on course; (5) involves giving no grades and keeping of detailed anecdotal records; and (6) happens during the learning process, in the beginning to the time of summative assessment in the course of study (MoE, 2018, p.35).

Examples of assessment for learning tools, which comprises of both diagnostic tests and formative assessments, are teacher observations, portfolios, class discussions, think-pair-share, concept maps, and works in progress with comments, oral questions, quizzes, presentations, journals, and rubrics (Berry, 2008; Brown, 2018; McMillan, 2018; Popham, 2017).

Teachers in classroom practice should employ three key AfL strategies. These are communicating learning targets, gathering evidence and providing feedback (McMillan, 2018). First, at the start lessons, teachers should make known to the students the learning intentions or outcomes and success criteria (McMillan, 2018 citing Cauley & McMillan; Lysaght & O‟Leary). The learning intentions consist of key contents that students should learn, and success criteria are used to determine the level to which students‟ learning has occurred. Sharing lesson intentions and success criteria allow both the teacher and students to know where students‟ learning is progressing towards and how these are assessed (Black &Wiliam; Wiliam & Leahy cited in McMillan, 2018). Second, the teacher can obtain evidence of students‟

learning (McMillan, 2018 citing Cauley & McMillan; Lysaght & O'Leary). This is done through the use of various methods, including formal and informal, in gathering evidence of students' learning process and products. Third, teachers can provide feedback to advance teaching and learning (McMillan, 2018 citing Black & Wiliam; Cauley & McMillan; Wiliam & Leahy). For instance, teachers can offer feedback to students on their progress in their learning and also adapt their teaching using evidence gathered on students learning.

2.2.3 Assessment as learning (AaL)

According to Berry (2008), both AfL and AaL highlight the purpose of assessment in supporting learning; however, AaL differs from AfL. Whereas AaL focuses on the learners' roles and encourages the active commitment of learners in their learning and therefore be understood to be "assessment as learning to learn paradigm", that of AfL emphasizes on the roles of teachers in advancing learning and thus said to be an "assessment in support of learning paradigm" (p 11).

AaL is an act of building and promoting student metacognition where students are vigorously engaged in the assessment process by scrutinising their learning, utilizing feedback from teachers, peers, and self to determine the next steps; and establish personal learning goals (Superior North Catholic DSB (SNCDSB), 2017). According to Bartllet (2015), AaL is "the term commonly used to imply assessment which involves the pupils making assessments of themselves or their peers during the learning process and is most commonly exemplified in classrooms through peer- and self-assessment" (p. 3).

Assessments as learning (AaL) place emphasis on students to monitor their learning and are urged to personally hold themselves accountable for their learning (Berry, 2008; Earl, 2003). The AaL emerges from the contemporary beliefs of

constructivist learning theory that view education as not just an issue of transmitting thoughts from, the teacher who is considered to be knowledgeable to students, but that it is a dynamic act of cognitive change that takes place when people share and work together with new thoughts (Tulu et al. 2018, citing Earl and Katz (2006). According to Gonzales and Aliponga (2012), AaL is put in to practice when teachers assess learners by giving them the chance to show what they have learned in class and also guide them to obtain personal feedback and monitoring of their learning process. According to Earl (2003) in AaL, students find out their errors and also, discover from their peers how to enhance their learning.

Studies have found that AaL benefits students in different ways. For instance, it encourages students to assume responsibility for learning, facilitates good interaction between students and teachers, presents opportunities for self-assessment and peer assessment for students, which helps them understand their next steps in learning (Earl, 2003; Mekonnen, 2014). The teachers‟ role is to promote students‟ independent learning through assessment as learning (Tulu et al. 2018, citing Earl and Katz, 2006). Examples of assessment as learning tools include peer assessments, self-assessments, teacher observations with feedback, and student-teacher conferences.

2.3 Kinds of Assessment Methods and Tools

Teachers employ various kinds of assessment tools to gather evidence on their students for varied uses or purposes. Some examples of assessment tools and methods are quizzes, observation, presentations, daily practice assignments, projects, portfolios, oral and written reports, group activities, student self-assessments, interviews, oral questions, conferences, rating scales, pencil-and-paper tests, and homework. It has to be noted that it is beyond the scope of this study to review all these assessment methods and tools. Only a few of them will be reviewed.

Berry (2008) has classified assessment methods either as traditional or alternative. Traditional methods like matching items, true-false, and multiple-choice do not take too much time in conducting and scoring them as compared to alternative methods like portfolios and observations. According to Berry (2008), paper-and-pencil tests as a traditional form of assessment have long been used as the main method for judging student achievement. Paper-and-pencil tests necessitate learners to answer in writing in a standardised test setting where administration procedures, scoring criteria and the content of the test papers are alike for every candidate (Berry, 2008). Selected response or objective test is the most common type of paper-pencil test. In the selected response test, students are asked questions with a range of responses for them to select the best answer or correct from the options given (Amedahe & Asamoah-Gyimah, 2016). Examples of the objective test are multiple-choice questions, true-false questions, and matching. Some merits of the objective test are that they are easy to score, objective, ensures much content sampling with limited time and space, and can measure knowledge, comprehensions, and application (Amedahe & Asamoah-Gyimah, 2016; Berry, 2008). However, paper and pencil test have been criticized because if caution is not taken, can result to largely measuring factual or recall of information and also it does not lend itself in assessing some essential learner outcomes and skills.

Another type of test is the supply type or constructed response type is subjected to various kinds of responses. Examples of the supply type are fill-in-the-blanks, short questions, and essays. An essay test requires students to compose their responses to questions using their own words. They are used to assess complex learning skills such as writing, communication and organization skills. However, they have a limited range of content coverage, requires a lot of time to take the test,

bluffing on the part of students when they do not know answers to a question and scoring is very subjective (Amedahe & Asamoah-Gyimah, 2016; Berry, 2008).

Similar to pencil and paper test, which is most at times is a formative assessment practice is quizzes. They are short and have fewer questions and can be done in a shorter time as compared to tests (Noori, Shafie, Mashwan, & Tareen, 2017). However, it must be noted that the various forms of paper and pencil tests can be used to gather information on students for formative and summative purposes.

Homework is regarded as a strategy of formative assessment that makes learners assess themselves. For instance, students can be assigned to answer questions on a particular website after schooling a day (Noori, Shafie, Mashwan, & Tareen, 2017). According to McMillan (2018), teachers use homework to diagnostically determine which particular areas of knowledge and skill need additional attention and to give students specific feedback. One benefit of assigning homework to students is that as it leads to mastery of skills through practice (Mierzwik, 2005 cited in Swanson, 2017). However, the administration of the students‟ work and scores can tremendously exert pressure on teachers, whereas parents consider homework assignments as too much work (Mierzwik, 2005 cited in Swanson, 2017).

According to Berry (2008), alternative assessments are meant to promote students‟ abilities to generate and apply a broad scope of knowledge either than merely memorizing facts and performing basic skills. Alternative assessments are different from traditional paper-and-pencil tests (McMillan, 2018). Various kinds of alternative tools include peer assessment, observations, presentations, portfolios, interviews, projects, experiments, self-assessment, and simulations. Alternative assessments are grouped into “product” and “performance”, in that at any point in

time, whatever learning outcome that is to be measured, it "will take the form of either a product, such as a research paper or a science report, or a performance, such as an oral presentation or a demonstration of a procedure in the lab" (Berry, 2008, p. 83). Some of these alternative assessment tools are explained next.

Projects require learners either in groups or individually to carry out an enquiry process on a selected topic through the application of complex skills such as collecting, analyzing and organizing information and presenting the results. It illustrates more than a final product but rather the many steps required in achieving the final product. Projects can be assessed based on the process, the product or both (Berry, 2008).

McMillan (2018) defined a portfolio as "a purposeful, systematic process of collecting and evaluating student formative and/or summative assessments to document progress toward the attainment of learning targets or show evidence that learning targets have been achieved" (p. 303). McMillan (2018, pp. 303-304) identifies the following features of an effective portfolio: (1) well stated purpose linked with learning outcomes, 21st-century skills, and standards; (2) logically structured compilation of student work products; (3) active student involvement and high enthusiasm; (4) pre-established guidelines used to determine contents; (5) clear and well-defined scoring criteria for evaluating students‟ products; (6) student self-reflection; and (7) review and evaluation conferences between teachers and students.

Popham (2017) noted that for teachers to make effective use of portfolios, they should make "ongoing collection and appraisal of students‟ work a central focus of the instructional program rather than a peripheral activity whereby students occasionally gather up their work to convince a teacher‟s supervisors or students‟ parents that good things have been going on in class" (p. 221). For a portfolio to be

successful, the student and teacher must collaborate effectively; however, the responsibility and ownership of the contents of the portfolio are left with the student (Brown, 2018).

Expressions like „performance assessment" and „authentic assessment" are occasionally used interchangeably with alternative assessment, but they essentially stand for something different. Performance assessment is defined as an assessment activity that involves "a student"s demonstration of a skill or competency in creating a product, constructing a response, or making a presentation" (McMillan, 2018, p. 268). Instead of asking students how something is done, students perform or put on display the skill or behaviour. The purpose is to highlight students" capability to utilize knowledge, attitudes and skills to produce their work or authentically perform a task. Performance assessment tasks can be organized into two categories: performance-based or performance-and-product. Examples of performance-based include performing keyboard skills in typing, debates, singing, playing a piano or performing gymnastics. Performance-and-product examples include a complete research paper, project, slide shows, reports, and videos. On the other hand, authentic assessment employs processes to judge a student"s capability to think, learn, and perform a task in a manner explicitly similar in real life or the real world (Brown, 2018; McMillan, 2018), authentic assessment enables students to apply thinking skills and also motivates them to learn since learning is related to real-world situations.

Checklists, rating scales, and rubrics are three common approaches in scoring or evaluating performance assessments or authentic assessments (McMillan, 2018). Checklists, rating scales and rubrics are both tools and assessment strategy.

A checklist consists of a listing of specific criteria or dimensions in terms of behaviours, attitudes, knowledge, and skills to be demonstrated for which the teacher

is to check whether or not each of them is met by simply ticking a „yes" or „no". For instance, checklists can be employed in evaluating a sequence of steps that are required in performing an action such as the proper steps in using a microscope.

According to McMillan (2018), rating scales are used to show the degree or frequency of the presence of a specific dimension, beyond a simple yes/no. Rating scales may be classified into numerical, qualitative, or numerical/quantitative combined scales. Rating scales that use numbers only on a continuum to depict the varying degrees of proficiency with regards to quality or frequency are called numerical scales. Qualitative scales use verbal descriptions to show the degree of student performance.

A rubric is an expanded form of rating scale that consists of a series of criteria that describe the degree of quality at each level of the scale (McMillan, 2018). Price, Pierson and Light (2011), note that apart from being used as summative assessments, rubrics can improve the whole learning process from the beginning and to the end by serving several purposes including sharing criteria for success for an assignment and giving purposeful feedback on an ongoing project. Also, they support self-monitoring and self-assessment towards the award of the final grade on an end product. Rubrics can be grouped into two main types: holistic and analytic. A holistic rubric is one in which dimension results in a single overall score, whiles the analytic rubric provides a separate score for each criterion (McMillan, 2018).

2.4 Meaning of Conception

Whiles some authors such as Remesal (2011) make a distinction between the terms „conceptions" and „beliefs" others such as Calveric (2010), Vardar (2010), Yidana and Anti Partey (2018) choose to use the two terms interchangeably. However, Brown (2004, 2008) and Thompson (1992) prefer the term „conceptions"

rather than „beliefs". There are different points of view among educational researchers on a working definition of conceptions. However, the term "conception" in this study has been drawn from Brown's (2004, 2008) and Thompson's (1992) definitions of conception. Brown (2004) explains conceptions as "the organizing framework by which an individual understands, responds to, and interacts with a phenomenon" (p.303). Thompson (1992) explains conceptions "as a more general mental structure, encompassing beliefs, meanings, concepts, propositions, rules, mental images, preferences, and the like" (p. 130). This means that conceptions denote "the ideas, values and attitudes people have toward what something is (i.e. what they think it is and how it is structured) and what it is for (i.e. its purpose)" (Brown & Gao, 2015, p. 4). Thus, the concept of conception fuses knowledge and belief into one construct and therefore eliminates the operational challenges researchers are confronted when they try to make a distinction between beliefs and conceptions (Barnes, Fives & Dacey, 2015; Barnes, Fives & Dacey, 2017). According to Opre (2015), "if we are to refer to teachers' beliefs about assessment, the preferred term and the most frequently used in the specialized literature is that of conceptions" (p. 230).

2.4.1 Importance of studying conceptions of assessment

Xu and Brown (2016) note that "conceptions of assessment denote the belief systems that teachers have about the nature and purposes of assessment, and that encompasses their cognitive and affective responses" (p. 56). Brown (2004) opined that the why and how we use assessment is what matters in assessment, and so how it is conceived matters a lot.

Studies concerning teachers' beliefs have recognized that teachers' beliefs about their practices shape how they carry out their activities (e.g. Barnes, Fives, & Dacey, 2015; Fives & Buehl, 2012). By implication, the conceptions teachers' hold of

assessment impinges on their preferences of assessment tools, interpretation, and use of assessment results (Brown, 2008). For instance, in China, the more would-be teachers approved the conception of assessment for examination achievement, so much they viewed assessment as not formative and diagnostic, not developing of life character, and irrelevant in the lives of students and work of teachers (Chen & Brown, 2013). Also, Yan (2014) stated that Hong Kong teachers generally had pessimistic notions of school-based assessment (SBA); however, they were confident to apply SBA and teachers who had with a conviction that SBA was valuable were more likely to indicate their plans of using SBA in their classes. Further, in the Iranian context, Pishghadam, Adamson, Shayesteh, Sadafian and Kan (2014) reported that English-language teachers who ascribed to the improvement conception of assessment reported a reduction in their perceived burnout, while those who believe assessment was irrelevant positively correlated with increased self-reported burnout. Additionally, Lin, Lee and Tsai (2014) established that Taiwan science teachers who held an improvement conception of assessment were prone to see science learning as increasing comprehension and applying knowledge rather than recalling of facts. The above examples demonstrate that conceptions assessments are important for teaching practice.

Harris and Brown (2009) have noted that the conceptions of assessment teachers‟ hold are of great consequence as they influence their assessment practices (p. 365). Also, Moiinvaziri (2015) opined that the techniques teachers employ in assessing students‟ learning differ based on their notion of assessment. Therefore, it is important to consider their assessment beliefs to appreciate their practices well and if necessary, find ways to improve their assessment practices (Brown, Lake & Matters, 2011). According to Brown (2008), teachers‟ positive notions of assessment such as

assessment improves students‟ learning has given rise to useful assessment practices; whiles their negative views of assessment of not relevant to students learning could play an important role in teachers‟ acceptance of assessment policies.

Evidence also exists to indicate that there are variations in teachers‟ assessment from society to another as conceptions have a propensity to be harmonious with the cultural practices and policies of a particular cultural context (Brown & Harris, 2009; Brown, Lake & Matters, 2009). In a high-stake examination environment, teachers conceive that tests motivate students for better learning (Susuwele - Banda, 2005; Brown, Hui, Yu & Kennedy, 2011). Also, in other environments, teacher assessment conceptions have been established to affect pedagogical practices and held back innovations (Remesal, 2011).

From the discussions mentioned above, it pre-supposes that, to change teachers‟ assessment practices; there is the need to alter their assessment conceptions. Ghana is currently undertaking curriculum and assessment reforms for all levels of education, beginning with the Kindergarten and Primary levels. It is therefore very essential to ascertain the teachers‟ conception of assessment since their conceptions can either support or hinder the effective implementation of the reforms.

2.5 Teachers Conception of Assessment

This part of the review concentrates on the body of global literature investigating teachers‟ conceptions of assessment. According to Barnes, Fives and Dacey (2015) and Opre (2015), in previous studies, the term “conception” has been adopted in the investigation of teachers‟ beliefs of assessment.

Barnes et al. (2015) and Azis (2015) review of empirical articles allied to this subject matter, subsumed teachers‟ assessment conceptions as existing on a continuum. They range from an „extreme pedagogical‟ point of view or assessment

for learning with the focus that assessment is for advancing students learning and improving teaching at one end, to „extreme accountability" purposes or assessment of learning with the focus that assessment hold schools accountable for students learning at the other side of the continuum. These studies examining teachers" assessment conceptions encompass diverse research objectives, methodology and participants.

Although there are numerous available frameworks that depict likely conceptions of assessment (e.g., Davis & Neitzel, 2011; Harris & Brown; 2009; Remesal, 2011), this study focuses on the use of the extensively cited framework developed by Brown (2004, 2006), Conceptions of Assessment (CoA-III), that was devised from existing studies to illustrate the purposes of assessment. Teachers in New Zealand and Australia were used in the initial studies using this instrument, but further studies have since been replicated in several international contexts. The original instrument with a 6-point agreement rating scale consisted of 50 Likert- type items. A 27 items abridged version (Conceptions of Assessment Abridged, CoA-IIIA) was subsequently validated (Brown, 2006). This has been used in this study. The framework provides four inter-correlated conceptions of assessment or purposes of assessments categorized as one „anti-purpose" and three „purposes". The three purposes are: assessment promotes teaching and learning (*improvement*); assessment ensures that students account for their learning (*student accountability*) and; assessment makes schools and teachers accountable for students" learning (*school Accountability*). The fourth purpose or the anti-purpose reflects the belief that assessment is basically of no significance (*Irrelevant*). However, by aligning the student and school accountability purposes, it is likely to contend that two main assessment purposes of improvement and accountability exist in every society.

According to Harris (2008), apart from the first conception, the remaining three conceptions are very much linked with assessment practices referred to as summative. Brown‟s theoretical perspective for the development of this scale is that teachers can and do hold contradictory or conflicting conceptions as teachers usually view assessment as fulfilling different purposes. In other words, teachers can concurrently hold multiple assessment conceptions. For instance, Brown (2004) reported that New Zealand teachers simultaneously held the assessment conceptions of improvement and school accountability. The model was subsequently adapted to suit Asian environments by adding examination as another vital element to suit high-stakes assessment backgrounds (Brown, Lake & Matters, 2009). Each of the four conceptions is further explained below. However, an in-depth description of the assessment conceptions model, as indicated by the Conceptions of Assessment Inventory, will be outlined in the methods section of this study.

2.5.1 Improvement conception

This conception originates from the notion of „assessment for learning‟ or „formative assessment‟. According to Brown (2006), teachers regard assessment as promoting the function of advancing their teaching and students‟ learning. For this reason, the conception of assessment as improvement can be equated to “formative assessment” or “assessment for learning” (Brown, Lake, & Matters, 2011). Here, the principal function of assessment is to improve teaching and learning by employing formative assessment techniques and strategies to provide relevant feedback to the instructor and the learner.

Twelve (12) items on the CoA – III are aligned to this conception put into four sub-scales: assessment is valid (e.g., “Assessment results can be depended on”); assessment describes student learning (e.g., “Assessment measures students‟ higher-

order thinking skills"); assessment improves teaching (e.g., "Assessment information modifies ongoing teaching of students"); and assessment improves learning (Brown, 2006, p. 168).

2.5.2 Student accountability

This conception is of the perspective that assessment holds students accountable by demanding that students individually assume control of their learning in acquiring the credentials that are necessary to advance to various levels of education. In this case, employers and parents are the main beneficiaries of this kind of assessment information. Brown (2002) noted that students‟ accountability implies that "the students are individually accountable for their learning through their performance on assessment" (p. 40). Moiinvaziri (2015) stated that the student accountability conception connotes assessment is used for the verification of learners‟ achievement on pre-established standards. The three CoA items that assess this assessment conception depict assessment as "assigning grades," "placing students into categories," and ascertaining "if students meet qualification standards" (Brown, 2006, p. 168).

2.5.3 School accountability

The school accountability conception denotes the use of assessment results to make schools and teachers accountable for their students‟ learning. This means that when assessment is used to hold students accountable, it is also used to assess schools‟ and teachers‟ performance by holding the two answerable for students‟ shortcomings in their performance. Moiinvaziri (2015) noted that school accountability conception alludes to "the use of assessment to see how well teachers or schools are doing in relation to the established standards" (p. 76).

The CoA-III instrument provides three items to assess this assessment conception namely; assessment "provides information on how well schools are doing", "an accurate indicator of a school"s quality," and "a good way to evaluate a school" (Brown, 2006 p. 168). The items in this conception make a judgment about teacher and school quality rather than to improve teaching and learning.

2.5.4 Conception of irrelevance

This fourth conception rejects the purpose of assessment and does not subscribe to the conviction that assessment has no logical place in the lives of students and teachers work. This can be referred to as an "anti-purpose of assessment". This conception is premised on the observation that assessment is inaccurate and unreliable and hence has no usefulness to teachers and students but rather harms them (Brown, 2002, 2004; Harris, 2008). This conception holds the point of view that assessment is unreliable, bad, inaccurate, and must be ignored (Brown et al., 2011). Nine items have been devised in the CoA –III instrument to assess this conception including assessment is bad for learners, teachers, and schools (e.g., "Assessment interferes with teaching," Brown, 2006 p.168); assessment is something to be ignored (e.g., "Assessment results are filed and ignored," Brown, 2006 p.168); and unreliable, inaccurate and not of use (e.g., "Assessment is an imprecise process," Brown, 2006, p.168).

2.6 Empirical Studies Employing TCoA and Other Related Studies

These studies are discussed under three sub-headings based on the methods employed viz: quantitative studies, qualitative studies, and mixed-method studies.

2.6.1 Quantitative studies

Several studies spanning many cultures, educational systems and jurisdictions have utilised both the full and abridged form of TCoA-III. Using the full version of the TCoA-III, Brown (2004) examined 525 primary teachers‟ assessment conceptions in New Zealand. The study was conducted at a period when assessment in primary schools in New Zealand was generally woven around low-stakes classroom-based assessment with emphasis placed on "voluntary, school-based assessment for the purpose of raising achievement and improving the quality of teaching programmes" (Brown, 2004, p.306). The results of the research revealed an endorsement of the school accountability and improvement conceptions by the teachers with the improvement conceptions as the primary reason for classroom assessment. The conceptions that assessment is irrelevant and assessment holds students accountable were rejected by the teachers. It was unsurprising that the New Zealand primary teachers endorsed the improvement conception of assessment because the assessment for learning practices was at that time ingrained at the primary level. The study findings also revealed that a moderate positive correlation (r =.58) between school accountability and improvement conceptions. This implies that teachers who endorsed the improvement conception of assessment were more likely to consent to the school accountability notion of assessment. According to Brown (2004), this is attributable to the management of New Zealand schools where the teachers were "accountable to their colleagues and to a school-based board of trustees made up of parents of pupils for the effectiveness of their work in changing student learning outcomes" (p.313).

Using a Chinese Translated version of the TCoA inventory and Practices of Assessment Inventory (PrAI), Brown, Kennedy, Fok, Chan & Yu (2009) examined the assessment conceptions and practices of 300 teachers in Hong Kong. In the Hong

Kong context, the education system is aligned with an examination-orientated culture that emphasizes high-stakes examinations in placing students into different educational levels. The findings revealed the use of assessment for improving teaching. The findings revealed that the teachers in Hong Kong use assessment practices to improve the learning outcomes of their students (Brown et al., 2009). Furthermore, a strong correlation (r =.91) was found between improvement and student accountability. This means that the teachers equated the improvement of learning to hold students accountable. Thus, making students accountable improves their learning.

Brown, Hui, Yu and Kennedy (2011) developed and employed a context-specific edition of Brown‟s (2006) TCoA inventory with two new constructs of development and control to investigate the Chinese context further. The instrument was used to investigate the conceptions of assessments of 1,912 primary and secondary teachers from Guangzhou (n=898) and Hong Kong (n=1014). An analysis of the results showed a hierarchical three-factor model of conceptions of assessment – improvement, accountability and irrelevant. Also, improvement and accountability conceptions were strongly correlated (r =.80). This finding was in harmony with Brown et al. (2009). Brown et al. (2011) noted that the results once more buttress the effect of "the Chinese tradition and policy of using examinations to drive teaching quality and student learning and as a force for merit based decisions" (p.307).

In Turkey, Vardar (2010) examined sixth to eighth-grade Turkish teachers‟ (*n*=414) assessment conceptions using the TCoA-IIIA. The findings of the study indicated that the teachers held students‟ accountability conceptions as the utmost priority. Vadar (2010) attributed this to the Turkish high-stakes education culture that puts students in a competitive manner in obtaining higher grades examinations. Also,

improvement, student accountability, and school accountability conceptions correlated significantly at a moderate level at each other. This implies that the teachers "conceived of assessment as assigning a grade or placing students into categories in order to increase their students" scores in assessments" (Vadar, 2010, p. 69). However, there was no significant relationship between Irrelevance conception with other conceptions. Irrelevance conceptions recorded the lowest mean score implying that "assessment was not seen as irrelevant in teaching and learning environment by these teachers" (Vadar, 2010, p. 70).

Brown (2011) employed quantitative methods using Brown"s (2006) original four-factor model to compare 573 primary and 404 secondary school teachers" conceptions of assessment in New Zealand. The results showed that both teacher samples did not differ in their levels of endorsement with respect to improvement, school accountability, and irrelevance conceptions. However, a statistically significant difference in mean scores was found in relation to the conception of assessment as holding students accountable, with the secondary teachers endorsing it. Brown (2011) noted that this finding was "consistent with real-world differences in how assessment is used at the primary and secondary levels of schooling in New Zealand" (p.14). During the period of the study, secondary school teachers in New Zealand were constantly engaged in the assessment of students based on the requirements of the state examination system.

Similarly, Brown, Lake and Matters (2011) using the TCoA-IIIA investigated primary (n=784) and secondary (n=614) teachers" conceptions of assessment in Queensland. The system of assessment practices in Queensland was similar to New Zealand where assessment practices are low stakes nature at the primary and lower secondary school and high stake at last two years of secondary school (Brown et al.,

2011). The findings revealed that whiles the primary teachers agreed that improvement of learning and teaching is the principal purpose of assessment; the secondary teachers placed somewhat more prominence on student accountability. This finding is aligning with Brown‟s (2011) New Zealand study. In both two study samples, school accountability assessment conception correlated moderately with improvement and student accountability assessment conceptions. This correlation implied that "accountability at the school level, assessing students and improvement were intertwined rather than juxtaposed" (Brown et al., 2011, p. 217) and that Queensland teachers‟ did not "exhibit the simplistic notion of formative assessment good, summative assessment bad" (p. 217).

Brown and Michaelides (2011) investigated primary and secondary school teachers‟ conceptions of assessment from Cyprus and New Zealand. The study examined the validity of the New Zealand TCoA-IIIA model with Greek-Cypriot teachers. In terms of assessment culture, both countries have low-stakes improvement-oriented assessment policies; therefore, under the assumption of ecological rationality, it was anticipated that teachers from both countries would have similar assessment conceptions. Confirmatory factor analysis showed that the Cyrus data did not fit the New Zealand model. Exploratory factor analysis yielded an inter-correlated model of positive and negative conceptions of assessment. The positive conception orientation towards assessment consisted of three subsidiary factors (assessment improves student learning, assessment improves teaching, and assessment holds schools accountable) and the negative conception consisted of two subordinate factors (assessment is bad, and assessment is ignored). The findings revealed that the Cypriot teachers approved to a greater extent, the positive conception of assessment than the negative one. The findings also revealed similar ratings for "teacher

improvement", "student learning", and "bad" factors in both Cyprus and New Zealand. This implies that some similarities exist across cultures in terms of teachers‟ conceptions of assessment. The authors noted that both countries have similar moderately low-stakes assessment policies in terms of school accountability and evaluation. The authors also indicated that the more endorsement of school accountability by the Cypriot teachers compared to the New Zealand teachers is highly probably related to the Cypriot educational system. They opined "that Cypriot teachers conceive that evaluating schools with assessments is legitimate, since the assessment system and policy are consistent with high respect for and trust in teachers‟ professionalism in evaluating, monitoring, and responding to student learning progressions" (Brown & Michaelides, 2011, p.331).

In a related study to Brown and Michaelides (2011) in Cyprus, Segers and Tillema (2011) conducted a study with a group of 351 Dutch secondary teachers in the Netherlands using the TCoA-IIIA. An exploratory factor analysis revealed a four-factor model that partially validates Brown‟s (2006) study. The Dutch secondary teachers expressed four main conceptions of assessment as; informing performance and learning; holding schools accountable; imprecise and contain measurement errors, and; directing instructional decisions and measures higher-order thinking skills. The findings indicated that teachers failed to distinguish between formative and summative assessment functions but did distinguish between classroom assessments serving summative and formative purposes from school accountability. The authors propose that this finding may be a manifestation of the Netherlands‟ secondary system that uses classroom assessments for both formative and summative purposes.

Daniels, Poth, Papile and Hutchison (2014) used the TCoA-IIIA to investigate 436 pre-service teachers‟ conceptions of assessment in Canada. Summative

accountability measures heavily characterize the Canadian context; however, teachers are given professional development courses in formative assessment and involved in the development of standardized tests (Daniels, Poth, Papile & Hutchison, 2014). A confirmatory factor analysis revealed that Canadian pre-service teachers‟ conceptions of assessment corresponded more or less with the nine first-order factors on the original TCoA-IIIA (Brown, 2006). Generally, the teacher trainees highly rated improvement–inclined factors and lowly rated the negative factors with the exception that assessment is an inaccurate factor. Daniel et al. (2014) suggested that the strong endorsement of inaccurate factor could be due to the pre-service teachers learning of assessment errors and inaccuracies in the programme of study and may have been "hypersensitive to these issues" (p.153).

Gebril and Brown (2014) examined practising teachers (n=202) and pre-service teachers (n=305) conceptions of assessment in Egypt using an Arabic translation version of the TCoA-IIIA. As in the case of China, the education system in Egypt is also examination-based at all educational levels characterized by summative assessments for the selection of students for further studies. Confirmatory factor analyses of the teachers‟ conception of assessment indicated a three-factor model of conceptions – improvement, school accountability, and irrelevance. The teachers in both groups certified the improvement conception as the highest priority. The findings also revealed improvement conception correlated strongly between with school accountability (r =.89). The strong correlation between the improvement and school accountability is harmonious with earlier findings in the Chinese context from studies by Brown et al. (2009) and that of Brown et al. (2011). This finding is in tandem with ecological rationality as a result of the high-stakes setting in Egypt. Hence, Gebril and Brown (2014) posited that "greater changes to the examination

system are required if teacher beliefs are expected to be more positive about the priority of formative, improvement-oriented uses of assessment" (p.16).

Using the TCoA-III and the control items, Brown, Chaudhry and Dhamija (2015) examined the conceptions of assessment of 1,645 Northern Indian secondary school teachers. A confirmatory and exploratory analysis found a four-factor model that indicated that teachers recognized assessment as a mechanism to control their teaching and lessons, for improvement, as an indicator of school quality, and irrelevant.

In another quantitative study, Yates and Johnston (2017) employed TCoA-IIIA (Brown, 2006) to examine 135 New Zealand secondary teachers‟ conceptions of assessment. The results from the study discovered a new factor - *assessment is for qualifications*. According to Yates and Johnston (2017), this factor as an indication of the ecological effect of "summative assessment for qualifications on high school teachers‟ conceptions of assessment" (p.15). Another finding of the study was the positive but weak correlations between the formative and summative assessment purposes. Yates and Johnston (2017) asserted that the correlations might "indicate a tendency for teachers to see a dual purpose for National Certificate of Educational Achievement (NCEA) school-based assessment" but may well also be a sign of "tensions between using assessment for both formative and summative purposes" (Yates & Johnston, 2017, p.14). However, they opined that the weak correlations between formative and summative assessment could lead to a confusion amongst teachers as to what essentially constitutes formative and summative assessment.

Furthermore, a fairly weak positive correlation existed between assessment for qualifications and assessment for school accountability (r = .165). With this, Yates and Johnson (2017) noted that the teachers might somewhat agree with the "notion

that school quality can be measured through assessment results, in particular when those assessments are also used to award qualifications" (p.11). Concluding, Yates and Johnston (2017) noted that, on the whole, the sample of teachers in their study exhibited conceptions of assessment that are parallel to Brown"s previous (2011) New Zealand sample of primary and secondary teachers but align more closely with the results from high-stakes examination contexts.

Barnes, Fives and Dacey (2017) investigated K-12 teachers (n=179) conceptions of assessment using TCoA-IIIA from a person-centred approach in the United States. In the US context, though there is no mandatory national examination, under the No Child Left Behind Act of 2001 all public schools are required "to administer state wide assessments, typically implemented with a single standardized test, annually to students in order to receive national funding" (Barnes, Fives & Dacey, 2017, p 110). Typically, teachers used classroom assessments for formative and summative purposes. An exploratory factor analysis found a three-factor model: accountability, improvement, and irrelevant. Further analysis results revealed that teachers could, and do, hold multiple conceptions of assessment simultaneously. The teacher showed that they regarded the purpose of assessment is for improvement of teaching and learning, making students, teachers and schools accountable, and as well as irrelevant to their work.

Implementing a non-experimental cross-sectional design, Darmody (2017) studied 489 post-primary teachers" conceptions of assessment in Ireland using TCoA-IIIA. The study was aimed at establishing baseline data about teachers" conception of assessment in the mix of major curriculum and assessment reforms at the post-primary level. Exploratory factor analysis resulted in a 5-element model that varied partially from Brown"s (2006) original model. The teachers conceived the purpose of

assessment as a diagnostic and formative tool; irrelevant; makes school accountable; a measurement and categorization tool; and a valid grading tool. Darmody (2017) noted that the five factors, "map readily onto a continuum of assessment purposes ranging from assessment for improvement purposes to assessment for grading and accountability purposes" (p. 120).

According to Darmody (2017), these continua of factors as obtained in the Irish context lend credence to the assertion by Brown and Harris (2009) that "teachers‟ conceptions of assessment are ecologically rational" (Darmody, 2017, p. 120). Also, the findings revealed a strong endorsement of assessment as a *measurement and categorisation tool*. The second most endorsed factor was assessment as a diagnostic and formative tool. There was a moderate positive correlation (r =.30) between *assessment as a measurement and categorisation tool,* and *assessment is a diagnostic and formative tool*. Additionally, there was a lack of correlation between *assessment is a diagnostic and formative tool* and *assessment is a valid grading tool*. This contrasted sharply with previous studies conducted by Brown et al. (2009) and Brown et al. (2011) that indicated strong correlations (r = .91/ r = .80 respectively) between the improvement conception of assessment and assessment for grading.

In Singapore, Fulmer, Tan and Lee (2017) investigated 229 secondary school teachers‟ conceptions of assessment and related contextual factors. The results revealed a teachers‟ support for the conception that assessment serves the purpose of student improvement, student accountability, and school accountability. They, however, did not endorse the irrelevance conception of assessment.

Yetkin (2017) studied 204 pre-service English teachers‟ conceptions of assessment using TCoA-IIIA. The results revealed that the highest endorsement value

was the improvement conception, and the lowest was the irrelevance conception. Also, there were strong and positive correlations among improvement, student accountability and school accountability conceptions. In contrast, a negative correlation was found between improvement and irrelevance conceptions.

In Ghana, Yidana and Anti Partey (2018) conducted a study involving 301 secondary school Economics teachers on their conception of assessment. The study adopted the 56-item version of TCoA inventory scale. The findings of the study showed that the Economics teachers conceived classroom assessment for improving teaching and learning, assuring school accountability and holding students accountable. However, the irrelevance conception of assessment was rejected by the respondents.

2.6.2 Qualitative studies

While several studies adopted Brown‟s CoA - III to look at assessment conceptions quantitatively; also, a range of qualitative studies are available. Some of these studies attempt to understand the idea of assessment conceptions as defined by Brown (2002) with a qualitative lens. Employing a qualitative methodology, Remesal (2011) in a study of 50 Spanish teachers (30 primary and 20 secondary mathematics teachers) examined interview transcripts and artefacts and found four factors of assessment purposes and subsumed them onto a continuum of pedagogical to accounting purposes. Although these conceptions are similar to Brown, she propounded that her teachers‟ conceptions fell into a bi-polar continuum of pedagogical conceptions (assessment for monitoring teaching and learning) at one side and the other side an extreme societal-accreditation conception (assessment for certification of learning and teachers‟ accountability) and in between the poles some mixed conceptions (Remesal, 2011). The continuum is founded on four functions of

assessment in learning, in teaching, in the certification of learning and for teaching accountability. The teachers‟ general conceptions of assessment were determined as follows. If all the beliefs of a participant could be put on one of the two poles for the four dimensions, then that participant was marked as possessing an extreme pedagogical or extreme societal conception of assessment. Those whose views were placed at various poles in a 3:1 ratio for the four elements were portrayed as having a mixed pedagogical or mixed social definition of evaluation depending on the dominant pole. The study revealed that more than twice as many teachers had mixed conception as extreme ones (i.e. 3:1 social or pedagogical). Remesal observed that this finding mirrors the multifaceted complexity of classroom assessment. While the conceptions of primary teachers were mostly pedagogical, the conceptions of secondary teachers were mostly mixed or pure societal conceptions. This result is aligned with the results of the quantitative studies described above (Brown, 2011; Brown et al., 2011), which revealed that summative assessment held the highest priority among teachers at the secondary level. Regardless of their research discrepancies, both Remesal and Brown consent that; assessment could and should be helpful to instruction and learning processes. Also, Remesal‟s pedagogical conceptions (i. e., assessment for monitoring teaching and learning) aligns with Brown‟s improvement conception of assessment, whereas, the societal conceptions align with Brown‟s school accountability and student accountability conceptions.

Employing, qualitative design, Haris (2008) examined 11 secondary Auckland teachers‟ conception of assessment and feedback. Results from the study revealed that the purpose of assessment and feedback could be conceived in one of three main ways: improving student learning; making teachers and school accountable to stakeholders by reporting students‟ performance, and; detrimental or irrelevant to

student learning. Contrary to Brown‟s (2006) study, the teachers did not subscribe to the belief that assessment gets students to be responsible for their learning, as envisaged by Brown. Instead, when it comes to assessment, the teachers rather reported being highly personally accountable for their students‟ successes and flops.

In the United States, Davis and Neitzel (2011) carried out a qualitative study with 15 middle school teachers using a semi-structured interview and identified ten purposes of assessment for four different audiences: teachers, students, parents, and "higher-ups" (i.e., state and district level audiences; p. 208). Four of the functions are related to teacher‟s audiences and described how teachers use assessment: (1) to evaluate and inform instruction, (2) identify students for remediation, (3) evaluate student learning and (4) gauge student investment in learning. Three of the purposes related assessment influence upon students: assessment is used to make students accountable, to guide and expand student knowledge and to provide feedback to students. Participants also conceived that assessment is used to inform parents and in the case of the district and state-level audiences that it is used to prepare for high-stakes testing and that it holds teachers accountable. The results indicated in this study once more points to the multiplicity in teachers‟ conceptions of assessment and hence align with the supposition of a continuum of assessment purposes with some aligned to pedagogically focused purposes end and others aligning more with the accountability end of the continuum (Darmody, 2017).

Also, in the United States, Karp and Woods (2008) studied 17 pre-service physical education teachers‟ conceptions about assessment multiple times (before, during, and after implementing a field-based unit) and using multiple sources (i.e., interview, survey, artefacts) in a semester-long course in a physical education curriculum. The investigation revealed the pre-service teachers held separate beliefs

about the purposes of assessment for teachers and students (as a result of their observation and experiences in high school). They also conceived the purpose of assessment as promoting student learning, determining the achievement of standards, evaluating teacher effectiveness, and determining students‟ level of knowledge and skills. With reference to students, the purposes of assessment were to motivate them and to make them know where they are with regards to set goals or standards.

Sethusha (2012) used qualitative methods (observations, semi-structured interviews and document analyses) to explore the teachers‟ (n-2) conceptions of assessment and their classroom assessment practices. The findings showed that assessment was essentially planned for improvement of teaching and learning and school accountability. Also, their practices were in tandem with the two conceptions. Another finding of the study was that the cultural and education system in South Africa, as well as teachers‟ personal experiences of assessment, influenced their conceptions of assessment.

Employing qualitative methods, Dayal and Lingam (2015) studied the conceptions of assessment of 43 in-service and 27 pre-service Fijian teachers who were participating in an assessment module in a Fijian university. The results revealed Fijian pre-service teachers commonly held an assessment of learning notion. In contrast, the majority of in-service teachers held an assessment for learning view.

2.6.3 Mixed method studies

In a mixed study, Harris and Brown (2009) interviewed 26 New Zealand teachers from a sample of 161 participant teachers who had completed TCoA-IIIA inventory to investigate their conceptions of the purpose of assessments. This was to assess the TCoA instrument‟s ability to adequately assess the full spectrum of teachers‟ beliefs about the purposes of assessment. Seven conceptions of assessment

were identified. They were external reporting, compliance, reporting to parents, facilitating group instruction, extrinsically motivating students, teacher use for individualising learning, and joint teacher and student use for individualising learning. According to Harris and Brown (2009), these seven identified purposes can be put under three key assessment purposes – student improvement, accountability and irrelevance. Based on this finding, the authors viewed it as an independent confirmation for the factors in TCoA-IIIA (Brown, 2006). Reporting to parents, external reporting and extrinsically motivating students were all conceptually aligned with the perspective of accountability, with the reporting purposes specifically associated with school accountability and extrinsic motivation by grades and qualifications linked to student accountability.

Furthermore, the categories of teacher use for individualising learning, joint teacher and student use for individualising learning and facilitating group instruction were subsumed under improvement purpose towards assessment. The compliance purpose was regarded to be associated under the irrelevance conception.

Moreover, the study demonstrated that teachers conceive assessment as having a multifaceted array of conflicting purposes. In this regard, teachers must consider harmonizing the desires of stakeholders such as the pupil, the school, and the society when embarking on classroom assessment. Some tensions emphasized in the study included those between student and school, and improvement and compliance.

Using a questionnaire, semi-structured interviews, and document analysis, Azis (2014) studied the conceptions of assessment of 107 Indonesian junior high English teachers. The findings showed that the teachers conceived the purpose of classroom assessment as improving teaching and learning and as well as holding students and school accountable. However, the notion that assessment is irrelevant

was rejected. Also, the findings indicated that a high level of enthusiasm among teachers to apply practices of assessment to aid and enhance their classroom teaching; however, their efforts were hindered by state-wide examination policy. Similarly, in an Iranian context, Moiinvaziri (2015) employed a mixed-method design in a study of 147 university teachers revealed that the purpose of assessment was to improve the quality of teaching and learning for the majority of participants.

2.7 Teacher Variables Influencing Teachers' Conceptions of Assessment

Studies on classroom assessment show that, teachers‟ conceptions of assessment are affected by some individual variables such as teacher‟ gender, age, teaching experience, and exposure to professional training in assessment among others.

Brown (2004) found that teacher variables like "teacher gender, years of training, years of experience, and the role in school were irrelevant to mean scale scores on the teachers‟ conceptions of assessment inventory" (Brown, 2004, p.311). Also, school variables like school locality (urban or rural) and schools‟ socio-economic status were immaterial to the teachers‟ conceptions of assessment.

An investigation by Vardar (2010) involving 414 teachers in Turkey using the TCoA-IIIA, found no statistically significant difference in teachers‟ conceptions of assessment based on in-service training and teaching subject. However, significant differences existed in teachers‟ conceptions of assessment with respect to years of teaching experience and undergraduate institution teachers attended. Again, Yetkin (2018) found a no statistically significant difference in teachers‟ conceptions among 204 prospective Turkish English teachers based on age, gender, and teaching experience. In contrast, Sahikarakas (2012) found a significant difference in the assessment conception of Language teachers with respect to years of teaching

experience. Teachers with more experience, see assessment in a negative way than, their less experienced counterparts. According to Sahikarakas (2012), the differences are due to the experienced teachers highly valuing themselves to a level that there is no need for them to obtain evidence of their teaching efficacy through assessment.

A study by Brown and Gao (2015) found differences in teachers‟ assessment conception with regards to teachers‟ teaching experience and gender. Male teachers and those with twenty and above years‟ experience endorsed the notion that assessment should be used to inspect and control students, teachers, and the school to ensure effective teaching and learning. Also, Ndalichako (2015) discovered that more female teachers possessed a favourable view of classroom assessment compared to their male counterparts. A significant statistical difference between male and female teachers was found concerning the utilization of assessment for facilitating and supporting teaching.

On his part, Benson (2014) investigated 6th to 8th-grade teachers‟ beliefs about assessment and discovered that gender was unrelated to teachers‟ assessment conceptions. He found that female and male teachers held similar beliefs on assessment. In connection with teaching experience, Benson (2014) found that older teachers (above 43 years) and younger teachers (25 to 30 years) held similar beliefs regarding the irrelevance conception of assessment. Similarly, Daniel et al. (2014) discovered that gender or level teacher was trained for has no impact on Canadian pre-service teachers‟ conception of assessment.

Mehrgan, Hayati and Alavi (2017) examined the influences of EFL teachers‟ age, teaching experience, gender and educational background on their beliefs of formative assessment. Findings from the study indicated that age had no statistically significant effect on teachers‟ belief about formative assessment. Also, gender had no

effect on the teachers‟ beliefs about formative assessment. However, teachers‟ teaching experience significantly influences their beliefs about formative assessment. Yidana and Anti Partey (2018) investigating the effects of Economics teachers‟ age, experience, and gender on their conception of assessment, found that gender and age did not affect teachers‟ conception of assessment. Fulmer, Tan and Lee (2017) study of Singaporean secondary school teachers found no significant relationship with teachers‟ teaching experience and their conception of assessment. Also, no significant statistical differences existed between teachers according to the subject area or by the school.

Izci and Caliskan (2017) employing an action research method explored the influence of attending an assessment course "Assessment and Evaluation in Education" on 118 soon-to-be teachers‟ conceptions of assessment. The findings indicated that except for the irrelevance conception, teachers‟ attendance in an assessment course and secured in-depth knowledge of assessment did not significantly change their assessment conceptions of improvement, student accountability, and school accountability. Similarly, studies by Brown and Hirschfeld (2008), Levy-Vered and Alhija (2015) and Vadar (2010) discovered that having more training in assessment or attending an assessment course did not enhance teachers‟ assessment conceptions. Nonetheless, some studies like DeLuca, Chavez and Cao (2013), and Smith, Hill, Cowie and Gilmore (2014) revealed that teachers‟ conception of assessment improved after getting periodic professional training in assessment.

Some research studies have shown that teachers‟ perceptions about assessment differ with the level at which they teach (Brown et al., 2011; Remesal, 2007), however, it remains uncertain whether this variation is as a result of the arrangement and policies related with different levels of schooling (e.g., primary and secondary),

or whether it is related to previous beliefs about teaching, learning, and assessment (Bonner, 2016). A study by Remesal (2007) of primary and secondary teachers in Spain revealed primary school teachers were more oriented to consider assessment is for instructional purposes. In contrast, secondary school teachers often held an „accounting" conception of assessment in certifying student performance. These perceived differences have been attributed to policy differences at the primary and secondary school levels (Remesal, 2011). Similar differences were noted among Queensland, Australia, primary and secondary teachers by Brown et al. (2011) in that, conceptions of primary teachers leaned towards improvement conception while conceptions of secondary teachers inclined towards student accountability. These differences might be related to policy differences between the primary and secondary levels where a rigorous, externally monitored school-based assessment system existed only at the upper secondary level at the time in some subject areas. However, the difference could be related to other factors.

Vandeyar and Killen (2007) revealed that educators" assessment conceptions are affected by several factors, such as the teacher"s knowledge of his or her subject and the system within which educators operate. A case in point is if the institutional arrangement stresses on content, compliance, and high stakes examinations, it will not be out of place to unexpected for teachers to conceive assessment as principally about school and learner accountability.

From the above review, it appears that the formation of teacher conception about assessment, in general, is complicated and differs by individual teacher factors, policy context, and student development level. There is a paucity of studies on how these factors shape teachers" conception of assessment in Ghana.

2.8 Teacher Assessment Practices

Two main approaches have been used in studies investigating teacher classroom assessment practices because "teacher‟s classroom assessment practices are like any observable phenomena: they can be investigated with either the teachers‟ self-reported practices or with independent observations of the assessment practices themselves" (Snyder, 2017, pp. 22-23). The two approaches claim to explore the actual assessment practices used in the classroom to varying levels of accuracy. Snyder (2017), citing Bachor and Anderson, suggested that none of the two approaches would be devoid of prejudices "as the difference between observer bias and self-report inaccuracy is unknown" (p.23). The underlying principle in using self-reported surveys in studying teachers‟ classroom assessment practices is that those teachers who show a positive viewpoint toward a particular practice are more probable to engage in that same assessment in their classroom. This study used both approaches to grasp teachers‟ classroom assessment practices, as such literature employing both perspectives to study teachers, various assessment practices would be reviewed. Studies that employed surveys to explore teachers‟ classroom assessment practices have paid attention to two domains of assessment use: the function of such practices in the classroom and the frequency they reportedly use them in their classrooms.

Research has indicated that teachers employ various assessment tools and methods in their classrooms, ranging from standardized tests, commercially developed tests and quizzes, textbook tests and quizzes, district-developed assessments, and informal classroom assessment strategies (McNair, Bhargava, Adams, Edgerton & Kypros, 2003; McMillan, Myran & Workman, 2002; Sajjad, Nasir, Nasir & Saif, 2019). Sajjad, Nasir, Nasir and Saif (2019) investigated 235

secondary school grade 10 English language teachers‟ classroom assessment practices and the challenges and opportunities faced by them. Results from the study revealed that teachers mostly follow traditional assessment practice such as; oral presentations, objective type test, question answering, and homework during the instruction, and disregarding alternative assessment practices such as - group projects, one-minute test, presentation, portfolio, self and, peer assessment practices.

Onyefulu (2018) conducted a study in Jamaica to determine the classroom assessment of primary (n=64) and secondary (93) school teachers. The results revealed that the teachers often used restricted essay, multiple-choice, fill-in-the-blanks, short answer, closed-book test, and portfolio. Similarly, Suah and Ong (2012) examined the assessment practices of Malaysian in-service teachers (n=406) and found that teacher trainees often use traditional assessment methods.

McNair, Bhargava, Adams, Edgerton, and Kypros (2003) investigated the grading practices of 157 primary teachers to ascertain the types and frequency of assessment tools used. The results indicated that the frequency with which paper and pencil tests are used differs significantly by grade. Third- and fourth-grade teachers regularly used paper and pencil tests, but rarely by teachers in lower grades. Forms of assessment, such as checklists, portfolios and observation, were used less frequently and principally for summative purposes of external accountability and reporting.

McMillan and Nash (2000) found that the majority of teachers employ four main tools in determining grades. They are quizzes, tests, projects or papers and homework. A few teachers make use of participation in-class work and effort in their determination of their students‟ grades. In a subsequent study to replicate these findings, McMillan, Myran and Workman (2002) indicated that the major factors teachers employ for grading were academic performance, effort, and improvement;

and minor factors were homework, comparing students with other students, other teacher‟s scores and borderline. In a situation where a student is at the borderline of getting a higher letter grade, the teachers take into consideration the student‟s effort, improvement, class behaviour, among others, when determining the grade. In a similar study, Alsarimi (2000) investigated 246 third preparatory science classroom assessment practices in Oman and found that teachers reported using multiple-choice items, oral exams, completion, short answer, and extended answer formats.

Gonzales and Aliponga (2012) investigated Japanese English teachers (N=55) and Philippine Japanese teachers (N=61) assessment practice preferences. The assessment uses or practices were classified along three broad categories: „assessment of learning,‟ „assessment for learning,‟ and „assessment as learning.‟ The study discovered that the dominant favoured assessment practices of teachers from the two countries were those linked with the conception of „assessment as learning‟ and „assessment to inform‟ as the least preferred. Also, the results depicted that English teachers in Japan showed a greater preference with practices that aligned with „assessment of learning‟ than those in the Philippines, in contrast, the Japanese teachers in the Philippines preferred *assessment for learning* than English teachers in Japan. The researchers attributed the culture of standardized language examinations in Japanese society as a mediating factor. The limitation of this study is the lack of qualitative data and the small sample size.

Bekoe, Eshun and Bordoh (2013) used interviews and classroom observation to investigate the formative assessment techniques that Colleges of Education Social Studies tutors employ to assess teacher-trainees‟ in the Central Region of Ghana. A case study research design was adopted, and data used together to form one case. Purposive and convenience sampling were employed to select both colleges and tutors

for the study. The findings revealed that the major techniques of formative assessment tutors used were diagnostic assessment, peer assessment, portfolio assessment and self-assessment. Furthermore, the study indicated that as a result of the rushed nature in devising formative assessment and scoring, it resulted in a situation where there was over-concentration on the cognitive domain of learning and ignoring the psychomotor and affective domains.

Asare (2015) employed the sequential mixed-methods design to examine the classroom practices of formative assessment with 192 private and public kindergarten teachers in six regions of Ghana. Teachers‟ classroom formative assessment practices were categorized into two dimensions: (a) assessment modes frequently used, and (b) reasons for using them. Interviews were used to obtain qualitative data from three participants chosen from the sample that initially completed a questionnaire. The findings indicated that the often most used mode of assessment by the teachers was paper- and- pencil test. Also, teachers employed a particular assessment technique just to satisfy the expectations of stakeholders (i.e., educational leaders and parents) to the neglect of the curriculum assessment recommendations. Furthermore, the findings revealed that no significant disparities existed between the private and public kindergarten teachers on nearly all the items in the two categories used in the study; however, significant differences were found on four reasons for choosing a specific kind of assessment.

Amoako (2018) investigated the formative assessment practices among 150 Distance Education course-tutors in Ghana using a self-administered questionnaire. The findings revealed that the common formative assessment practices of on-site Distance Education course tutors in Ghana were „oral questioning,‟ „tutor made test‟, „observation, „peer-assessment‟, and „student self-assessment‟. Furthermore, the

findings indicated that the majority of the tutors employed multiple formative assessment measures.

2.9 Teacher Factors Influencing Teacher's Assessment Practices

Research studies point out that many contextual factors influence teachers‟ assessment practices (Fulmer, Lee & Tan, 2015; Fulmer, Tan & Lee, 2017). These factors exist at three levels; individual, school and societal levels are known respectively as micro-, meso- and macro-levels (Fulmer, Lee & Tan, 2015; Fulmer, Tan & Lee, 2017). However, the focus of this study is on the micro-level, specifically on teacher variables and their influence on assessment practices.

Bol, Stephenson, O‟Connell and Nunnery (1998) examined 893 teachers‟ frequency of use of alternative assessment and traditional methods with respect to teaching experience, subject area, and grade level. The alternative methods of assessment investigated were observation-based and performance assessment methods. The traditional modes of assessment were quizzes, written assignments and close-ended examinations. The study findings revealed that the more experienced teachers more frequently employ alternative assessment than the less experienced teachers. Also, Koloi-Keaikitse (2012) investigated 691 teachers‟ classroom assessment practices in Botswana. The study found that teacher-related factors such as teaching experience, academic level, and preparation in assessment positively contributed to their skills, beliefs, attitudes and use of appropriate assessment methods in the classroom.

Furthermore, in Uganda, Matovu and Zubairi (2014) discovered that academic qualifications and training in assessment significantly predicted university lecturers‟ assessment practices. They remarked that teachers with more experience in teaching

and higher academic qualifications possess desirable assessment practices due to their constant dealings with learners‟ assessment activities.

Moreover, Susuwele-Banda (2005) found that the superior the teacher‟s academic qualification, the better the teaching skills and assessment practices. Suah and Ong (2012) discovered that years of teaching experience influenced the assessment practices of teachers, as beginner teachers have a higher inclination of utilizing questions developed by other teachers. This signifies a lower perception of assessment competency. However, Gonzales and Aliponga (2012) found that academic qualifications do not influence academic staff‟s assessment practices. Gonzales and Aliponga (2012) further revealed that assessment practices of teachers depended principally on the purpose they had set for the class, rather than their educational qualifications.

According to Al-Nouh, Taqi and Abdul-Kareem (2014), teacher professional development programmes play a crucial role in enhancing practising teachers‟ knowledge and skills of assessing learners, especially in this era of a paradigm change from summative to formative assessment practices. Also, Susuwele-Banda (2005) and Matovu and Zubairi (2014) have found that assessment-based training influences teachers‟ assessment practices. Furthermore, Zhang and Burry-Stock (2003) indicated that teachers‟ ability to put into practice classroom assessment activities depended largely on the degree of their training in conducting student assessments. Therefore, it is imperative that assessment-based training is provided to teachers to equip them with skills and knowledge of assessment practices.

The teaching level of teachers has been found to influence the assessment practices of teachers. Trepanier-Street, McNair and Donegan (2001) investigated the assessment practices of elementary teachers to uncover their use and importance of

various kinds of assessment. The results of the study indicated that both the lower and upper elementary teachers value and use various modes of assessment; though, some disparities and preferences existed. Whiles lower elementary teachers used and cherished checklists, rating scales, written observational notes, one-on-one assessments, and portfolios, on the contrary, upper elementary teachers put more value on tests published from reading series and textbooks, teacher-made tests, paper-pencil assessments, and conferencing with students. These differences between the groups may be as a result of the maturity levels of the students being taught by them (Trepanier-Street et al., 2001). Zhan and Burry-Stock (2003) also investigated 297 teachers on their classroom assessment activities across grades, and subject areas found that the higher the grade levels, the more teachers used objective types of items. Whereas secondary teachers often rely on paper-pencil tests, primary teachers often use performance assessment. The abovementioned studies seem to prove that teacher assessment practices can be exclusive of one academic qualification, teaching experience, assessment training, and grade level to another. Therefore, teachers' classroom assessment activities call for considerable investigation.

2.10 Teacher Assessment Conceptions and Practices Relationship

An area of research that has attracted attention among educators is the association between assessment practices of teachers and their conceptions (Brown, 2009; Buyukkraci, 2014; Brown et al., 2015; Ndalichako, 2015; Othman, 2018; Amoako, Asamoah and Bortey, 2019). For example, the results showed a clear relationship between practices of assessment and assessment conceptions of teachers (Brown, 2009; Brown et al., 2015; Othman; 2018).

In New Zealand, Brown (2009) explored the association between the assessment beliefs of teachers and their self-reported assessment practices among

primary school teachers. The study revealed that the more the teachers view assessment as student accountability, the more they use formal traditional assessment practices that measure superficial learning outcomes like the remembering of information and facts. On the contrary, increased use of measures of deep learning that calls for students to construct new meanings from materials was associated with the notion that assessment is a sign of school quality. Also, the assumption that assessment improves learning and the assumption that assessment is of no use; were highly associated with the increased use of informal assessment techniques like a peer and student self- assessment.

Likewise, Brown et al. (2009) carried out a study in Hong Kong on primary (n=114) and secondary (n=38) teachers to determine the teachers‟ assessment conceptions and practices relationship with the use of the TCoA-IIIA and a self-report assessment practice measure, the Practice of Assessment Inventory (PrAI). The results revealed that assessment practices correspond with teachers‟ conceptions with regards to the purpose of assessment with a strong predictive validity between teachers‟ assessment conceptions and practices. Besides, the study further found that the notion that assessment is for improvement was associated with the use of diagnostic practices (β=.55) and improvement of teaching assessment practices (β=.73) such as providing formative feedback, modifying teaching plans and analysing student strengths and weaknesses. Also, the belief that assessments make schools accountable was associated with the use of practices calculated to depict the quality and effectiveness of the school, such as using external exam results (β=.43) as a quality indicator. Moreover, prominence placed on student accountability conception made teachers adopt measures that purposely groom students for external examinations (β=.65) such as teaching students exam-taking skills and exam

requirements. Lastly, the “assessment is irrelevant” conception correlated with “irrelevant assessment practices” (β=.71). Thus, the more teachers conceive assessment as irrelevant to their work and students, the more they reported staying glued to their instructional plans and disregarding the use of tests in their lessons. However, the “Improvement” conception did not meaningfully regress with practices associated with “Improve student learning”.

In a similar study, Brown et al. (2015) used the TCoA-III with the assessment practice inventory to explore the practices and conceptions of 1695 Indian teachers. The study revealed similar findings to that of Brown et al. (2009) study with a positive association between teachers‟ assessment conceptions and practices. The teachers use assessment generally to train their students for examinations for the reason that they regard this as an essential part of improvement.

In Malaysia, Othman (2018) studied 174 teachers‟ beliefs and practices of school-based assessment (SBA) and found a positive association between their beliefs about SBA and their assessment practices. Amoako, Asamoah and Bortey (2019) investigated the knowledge of formative assessment practices among 148 secondary school mathematics teachers in the Cape Coast Metropolis of Ghana. The study revealed a strong positive relationship between teachers' knowledge of formative assessment and the practice of it.

A study by Vandeyar and Killen (2007) showed that teachers who conceive assessment as a valuable means of collecting information for decision making would employ assessment in their instructional activities. Teachers who consider assessment as a means to hold students responsible for their learning endorsed formal and summative assessment. Additionally, teachers who perceive assessment as obligatory but not worthy will approve quasi-formative assessment and summative practices for

producing grades for reporting purposes. Finally, teachers who tend to see assessment as basically irrelevant will most likely evade formative assessment (Vandeyar & Killen, 2007).

Even though there are several studies connecting teachers beliefs‟ to their teaching practices with evidence to support the relation (Brown, Chaudhry & Dhamija, 2015; Othman; 2018), an equal number suggests inconsistency between beliefs and assessment practices (Buyukkarci, 2014; Ndalichako, 2015; Susuwele-Banda, 2005). Among Malawi‟s mathematics teachers, Susuwele-Banda (2005) discovered a discrepancy between classroom assessment perception and classroom assessment practices of the teachers. Buyukkarci (2014) discovered that while teachers views were positive of formative assessment, their practices of it were inconsistent or ineffective. Similarly, Ndalichako (2015) reported that despite the favourable perception of assessment by secondary school teachers, their classroom assessment practices conflicted with their perception. Also, James and Pedder (2006) found a discrepancy between beliefs and reported practices among England teachers. Though these teachers cherished the activities which support and advance learning autonomy, their practices aligned to procedures that espoused performance assessment orientation.

Acar-Edol and Yidzi (2018) studied the assessment practices of 288 Turkish teachers and found that teachers had adopted an assessment for learning perspective to make an assessment, but they largely adopted traditional methods in classroom assessment practices. Also, teachers reported students‟ characteristics were the main factor influencing their classroom assessment practices; however, this did not reflect in their practice.

In Ghana, basic school teachers evaluate their students in very limited ways, as such, some of them are unenthusiastic in appropriately assessing students to enhance their learning. At best, they mostly emphasize on students‟ performance in examinations. As current literature has recorded that teachers‟ conceptions influence their assessment practices, it is important, therefore, to establish such relationships in the Ghanaian context.

2.11 Theoretical Perspective and Framework

This section of the review is about the theoretical underpinnings on which this study stands. This study is driven by the theoretical underpinnings of Clark and Peterson's (1986) teachers‟ thought processes model.

Clark and Peterson (1986) developed the teacher thought process model (see Figure 1). This model indicates that the thought processes of a teacher can influence their classroom behaviours. In their model, two domains that are of importance are depicted in the two circles – teachers‟ thought processes and teachers‟ action and their observable effects. According to Clark and Peterson (1986), teachers‟ thought processes are principally the dynamics occurring in the teachers‟ cognitive structure, which includes; their preparation, decision-making during teaching and theories and beliefs. They noted that these thought processes indicate how teachers conceptualize teaching; but these are not quite observable because these exist in their minds. These thought processes are then reproduced in the teachers‟ actions and observable effects. These include teachers‟ and pupils' behaviour in the classroom as well as pupils‟ achievements. Clark and Peterson stressed that these actions are influenced by the teachers‟ thought processes and vice versa, as signified by the double-headed arrow linking the two domains. Thus, there is a reciprocal relationship between the two

domains. Also, these two domains in some way are influenced by external constraints and opportunities, which may be attributable to school culture, school administration, the community, or the policy-makers. As indicated in the unidirectional arrows, such factors influence how they think and how they behave.

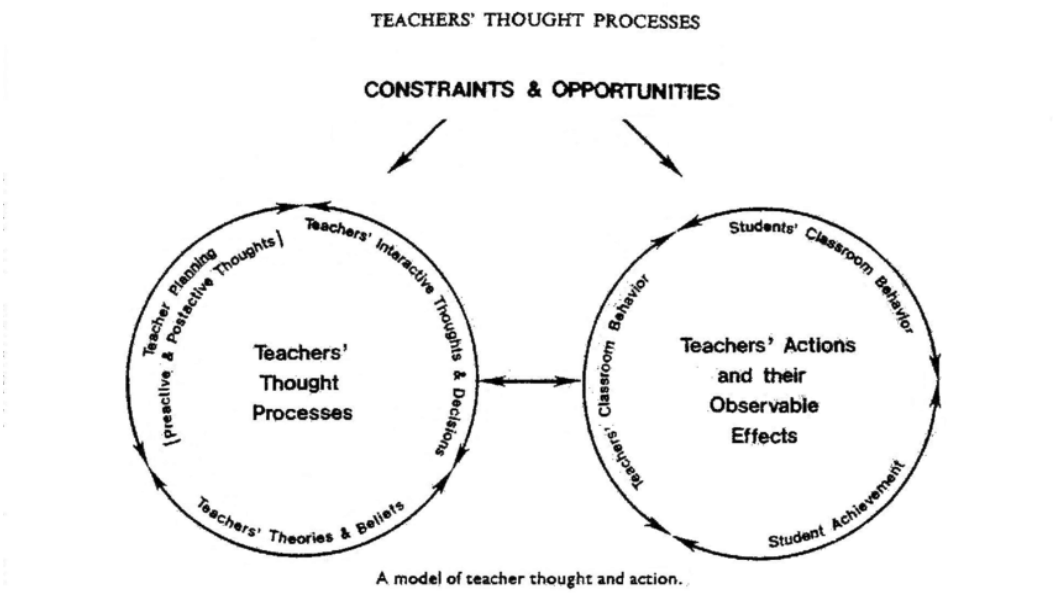
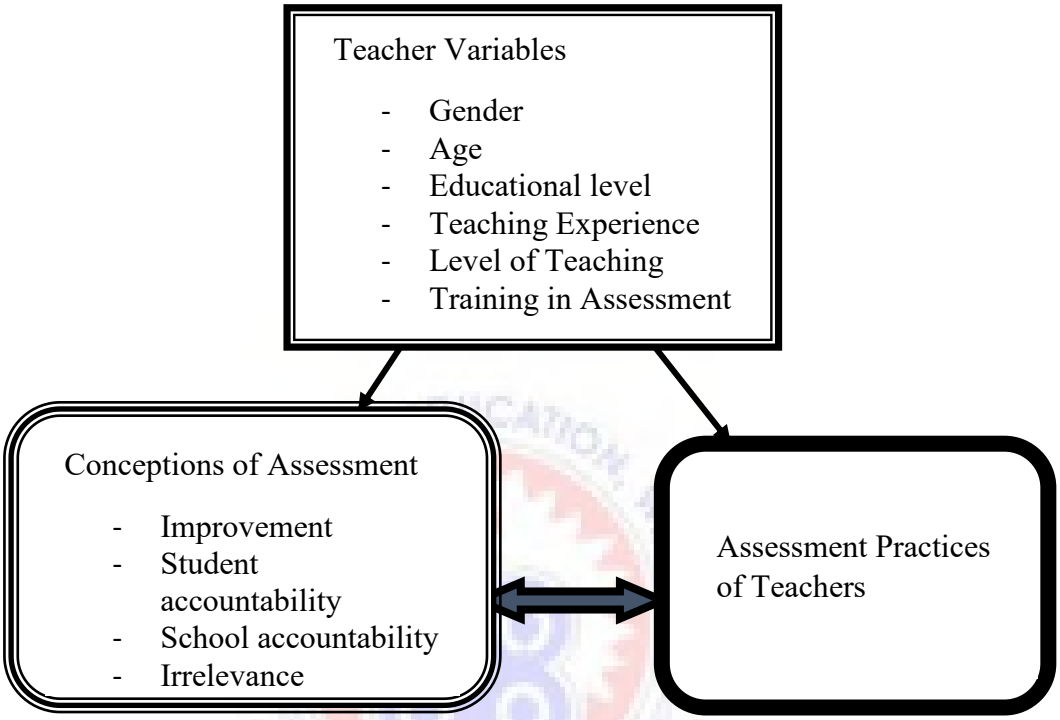


Figure 1: Teacher's thought processes model (Clark & Peterson, 1986).

2.12 Application of the Theoretical Perspective and Framework to the Study

The teacher‟s thought model illustrates the connection between teachers' thinking processes and their teaching actions. However, assessment is inseparable with instruction (Black & Wiliam, 1998); therefore, this model will be used to emphasize the association between their thought processes (conceptions) and intended practices in the assessment aspect. The intended assessment practices are expressions of the teachers‟ thought processes in the model of Clark and Peterson (1986). On this basis, what happens in the classroom begins with what is thought-out or perceived by the teachers themselves. This also holds concerning the teachers‟ assessment intentions or purposes.

Many factors may influence the practices and conceptions of teachers. Figure 2 identifies these variables and presents the relationships that constitute this study's conceptual framework.



Source: Author‟s Construct; Adapted from Clark and Peterson (1986)

Figure 2: Conceptual framework of the study.

In general, teachers have their individual and professional assessment conceptions that affect their intended assessment practices (Azis, 2015; Opre, 2015). This can be derived from their undergraduate studies, professional development and training programmes or their own field experience when interacting with their students (Brown, 2002; Calveric, 2010). The relationship of the teachers‟ assessment conceptions and their intended assessment practices is indicated by the double-headed arrow between the two. The present study aims to provide research-based proof that the conceptions of assessment and the intended assessment practices of the basic teachers are influenced by teacher variables (personal and professional). This is

indicated by the arrows pointing to the teachers‟ conceptions of assessment and their intended assessment practices.

2.13 Summary and Gaps in the Literature

This chapter dealt with concepts of assessment, conceptions, research findings on teachers‟ conceptions and practices of assessment, teacher variables that influence their conceptions and practices, the relationship between conceptions and practices, as well as the theoretical perspective that underpin the study. Numerous researches have been carried out by various researchers on the conception and the practice of assessment, teacher variables that influence teacher assessment conception and their practices of assessment and the relationship between assessment conceptions and practices.

The literature analyzed shows that teachers have different conceptions on classroom assessment purposes. The dominant conceptions are; improvement in teaching and learning, accountability of schools and students, and the notion of irrelevance. The dominant principles are; improvement in teaching and learning, transparency for schools and students, and the notion of irrelevance.

The review also showed that teachers‟ gender, academic qualification, years of teaching experience and training in assessment are variables that are capable of influencing conceptions and practices of classroom assessment. The review also revealed that teachers‟ assessment conceptions are related to their assessment practices.

Most of these studies have been quantitative and therefore, do not integrate the participants‟ voices to explain the connotations and denotations behind their conceptions and practices. This, therefore, means that quantitative results may not entirely express and clarify the assessment conceptions of teachers. Moreover, not

much research has been carried out on assessment conceptions and practices of teachers in the Ghanaian context.

This study using a mixed sequential explanatory method anticipates illustrating basic school teachers‟ conception of assessment, and how their conceptions relate to their practices. For this reason, the following research questions have been formulated to direct this study:

1. How do basic school teachers in the Sissala East Municipality conceive of assessment?
2. What are the assessment practices of basic school teachers in the Sissala East Municipality?
3. To what extent do basic school teachers‟ conceptions of assessment and classroom practices differ based on individual demographic characteristics and experience (e.g., level of teaching, teaching experience, gender, and age)?
4. To what extent do basic school teachers‟ conceptions of assessment relate to their classroom practices?

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes how the study was conducted. It describes the research philosophy, approach and design. It also explains the justification for the design and specifies the strengths and weaknesses of the design. Furthermore, it describes the population and the sampling techniques for the study. Moreover, it provides a description of the instruments employed as well as the data collection procedure. Finally, it details the data analysis tools that were employed to analyse the data collected.

3.1 Research Philosophy

The foundations for conducting research studies are philosophical beliefs, worldviews, and expertise (Creswell & Plano Clark, 2018). This study utilizes a pragmatist philosophical view that does not view any single method strictly but "to mix research components in a way that you believe will work for your research problem, research question, and research circumstance" (Johnson & Christensen, 2017, p. 971). A key principle of pragmatism is the compatibility between quantitative and qualitative methods in the sense that qualitative and quantitative data collection and analysis procedures can be combined (Creswell & Creswell, 2018; Creswell & Plano Clark, 2018; Johnson & Christensen, 2017). In other words, the blend is intended to provide strengths that compensate for the shortcomings of both quantitative and qualitative studies (Creswell & Plano Clark, 2011, p. 12).

3.2 Research Approach

The research approach of this study is mixed methods. Mixed methods involve combining or integrating into a research study qualitative and quantitative methods and data (Creswell & Creswell, 2018). Mixed methods is where the researcher collects and analyses both quantitative and qualitative data and combines all data types simultaneously or sequentially, prioritizing one or both data forms in a single study or multiple research phases (Creswell & Creswell, 2018, Creswell & Plano Clark, 2018) and "therefore may result in a more comprehensive understanding of the phenomenon under investigation" (Leavy, 2017, p.164). The assumption of the combination is to provide "a more complete understanding of the research problem than either approach alone" (Creswell & Plano Clark, 2018, p. 56).

The use of mixed methods for this research is justified for many reasons. First, the complementary role of a mixed-method approach helps the researcher to obtain "elaboration, enhancement, illustration, and clarification of the result of one method with results from the other method" (Johnson & Christensen, 2017, p. 994). Second, earlier researches on the topic of teachers‟ conceptions and practices of assessment used either a quantitative survey paradigm or a qualitative perspective. According to Johnson and Christensen (2017), while large-scale quantitative studies make it possible to generalise the results, they do not provide a thorough understanding of such a phenomenon, such as the meanings behind teachers‟ conceptions of assessment.

On the other hand, while qualitative methods provide information for a thorough understanding of the condition under investigation, they cannot be extended to other individuals or environments (Creswell & Plano Clark, 2018; Johnson & Christensen, 2017). The combination of quantitative and qualitative data provides a

better understanding of the problem of analysis than one type of data, and mixed research contributes to improving research quality (Creswell & Creswell, 2018; Creswell & Plano Clark, 2018; Johnson & Christensen, 2017; Leavy, 2017). In this regard, this study employed both quantitative and qualitative methods with quantitative analysis preceding the qualitative data collection to explore patterns arising from the survey results. This research used a questionnaire to provide the respondents‟ conceptions, and practices of assessment and qualitative interview to provide additional data to affirm or challenge the survey results. Accordingly, the use of mixed methods ensured that the study incorporated data from the survey, interview, observation and documents about the assessment and to obtain a better understanding of the research problem.

3.3 Research Design

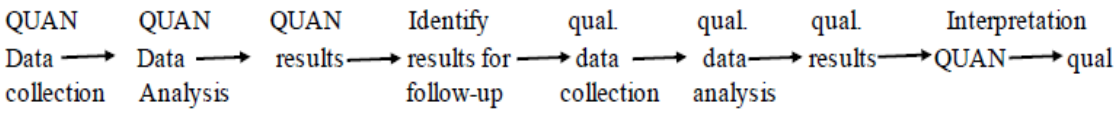
According to Creswell and Creswell (2018) and Creswell and Plano Clark (2018), there are three core mixed-method designs: the convergent design, the explanatory design, and the exploratory design. Creswell and Plano Clark (2018, pp 152 - 154) explains the three core designs that:

(1) a convergent mixed methods design aims to concurrently collect both quantitative and qualitative data, compare or merge the data, and use the results to understand a research problem, or to validate one set of findings with another, or to verify if respondents responded in similar ways during the quantitative and qualitative phases; (2) an explanatory mixed methods design consists of initially gathering and analysing quantitative data and followed by gathering qualitative data to assist explain the quantitative results; (3) an exploratory mixed methods design is to initially collect and analyse qualitative data to explore an issue, and then gather quantitative data to

create new variables, develop an instrument, devise an intervention plan or a digital product.

This study adopted Creswell and Creswell (2018), Creswell and Plano Clark (2011, 2018) and Johnson and Christensen (2017) sequential explanatory mixed methods design, which utilizes qualitative information to explain the initial quantitative results. The design starts with the quantitative data collection and analysis of findings that have the priority to answer the questions of the research and then continues with a corresponding qualitative data collection and analysis. The investigator interprets how the qualitative results help explain the initial quantitative results (Creswell & Creswell 2018; Creswell & Plano Clark, 2011, 2018). The main challenges of this design, however, are on determining which qualitative results to use and the selection of samples for both phases (Creswell & Creswell, 2018).

A visual model of how the study will be integrated is presented in Figure 3.



(source: Creswell & Plano Clark, 2011)

Figure 3: Visual Diagram of Sequential Explanatory Design

3.4 Population and Sample

All 796 professional basic school teachers from the nine circuits in the Sissala East Municipality constituted the population of this study. Based on Krejcie and Morgan‟s (1970) table for determining sample size, 260 teachers were sampled for the study. However, 224 teachers completed and returned the questionnaire resulting in about 86% returned rate. The researcher used multistage sampling methods. Multi-stage sampling involves splitting the population into stages, sampling the stages and then re-sampling, repeating the process until the final level of the hierarchy is selected

(Goldstein as cited in Nafiu, 2012). Thus, in multistage sampling, the sample population changes at each phase or stage of the research (Cohen, Manion & Morrison, 2018). In the quantitative stage of the study, firstly, a convenience sampling technique was applied to select four (4) circuits with a population of 441 teachers. Convenience sampling technique is an approach where a sample is selected according to the suitability of the researcher in respect of the availability of data, accessibility of the subjects, among others (Agyedu, Donkor & Obeng, 2013; Cohen, Manion & Morrison, 2018; Neuman, 2014). These four circuits were conveniently chosen due to their accessibility and proximity to the researcher. Secondly, all the basic school teachers in the four circuits were stratified into Lower Primary, Upper Primary and JHS and from which 260 teachers were purposively sampled. In purposive sampling, the investigator chooses the cases to be included in the survey based on the study purpose, and people of interest are chosen as a sample and leaving out those who do not meet the intent (Cohen, Manion & Morrison, 2018).

Nested sampling (sample sampling) was used to select teachers for the qualitative segment of the study. The criterion used was to identify all teachers who showed the strongest agreement on the questionnaire items as per Brown 2006 predetermined classroom assessment conceptions. As such, the participants in this phase were purposively selected to reflect various demographics of respondents in the quantitative phase as well as assessment conception categories.

3.5 Instruments for Data Collection

To collect relevant data on the Sissala East Municipal basic school teachers‟ conceptions and practices of assessments, two instruments were used, namely: questionnaire and structured interview guide. The integration of multiple data collection tools or methods allows for triangulation (Creswell & Creswell, 2018).

Triangulation involves confirming evidence from multiple sources to explain a particular issue or topic (Creswell & Creswell, 2018). Moreover, these instruments were used to offset the weaknesses of each other. To recognize the participants freedom to participate in this research, they were given consent to participate in both quantitative and qualitative phases

In the quantitative stage of this study, a questionnaire was utilized to explore teachers‟ conceptions and practices of assessment. A questionnaire is a written instrument that is made up of a list of questions or statements called items that attempt to gather information on a particular issue (Agyedu, Donkor & Obeng, 2013). A questionnaire was used in the study because it is a data collection instrument that is completed by individual research participant for a research study to obtain useful information of beliefs, perceptions, feelings, thoughts, values and behavioural actions and measure multiple kinds of personalities in large samples (Johnson & Christensen, 2017, p. 415) while ensuring anonymity for participants (McMillan & Schumacker, 2014).

A structured questionnaire was used to collect numeric data on Sissala East Municipality's basic school teachers‟ assessment conceptions and practices. According to Kusi (2012), a structured questionnaire consists of predetermined standardized questions or items with the intent to collect numerical data for statistical analysis. In this regard, the respondents were limited to a list of options from which they chose one as a response to each item.

The questionnaire consisted of three sections. The first section (Part A) contained the demographic details of the respondents adapted from the study of Calveric (2010). These items were adapted because the reflected the context and objectives of this research work. The demographics consisted of gender, age group,

educational level attained, years of teaching experience, grade level(s) currently teaching, and training in assessment. This information was required to provide a profile of the respondents and also to select participants for the interview as well as to inferential statistical analysis.

The second section, Section B, consisted of 27 items in which the basic school teachers‟ assessment conceptions were determined. The items were adapted from the Conceptions of Assessment III (TCoA-IIIA) Abridged Survey (Brown, 2006). The TCoA-IIIA was adapted to reflect the context and objectives of this research work. The tool is a 27-point, self-report questionnaire in which teachers are asked to indicate their level of agreement with statements concerning four overarching educational assessment purposes. This inventory is well known and has been used in various international studies, as stated previously, in the literature review (Brown, 2011; Brown & Michaelides, 2011; Daniels et al., 2014; Gebril & Brown, 2014; Segers & Tillema, 2011). I choose to use the validated TCoA-IIIA (Brown, 2006), because anticipated that Ghanaian teachers might hold similar conceptions to teachers in other jurisdictions.

This questionnaire focused on the conceptions of assessment of the teachers under (1) School accountability, (2) Students accountability, (3) Improvement of teaching and learning, and (4) Irrelevance. The questionnaire presented these items in a 6-point Likert scale (1 for strongly disagree, 2 for slightly disagree, 3 for slightly agree, 4 for moderately agree, 5 for mostly agree, and 6 for strongly agree). There was no reverse scoring in the instrument.

Section C of the questionnaire identified various assessment methods employed by teachers in their classes. They were chosen from McMillian et al (2002) and Titty (2015) studies. The adapted items reflected the objective and context of this

study. The respondents rated the frequency of use of each method in a 5-point Likert scale. The ranges of the scale were the following: almost never (1 – once a year), rarely (2 – once every grading period), sometimes (3 – monthly/ once or twice a month), often (4 – weekly/ once a week), and almost always (5 – every session/ more than once a week). This instrument offered an outline and the frequency of the assessment methods used by the teachers to facilitate students‟ learning. It could also provide additional details about the alignment of their conceptions with that of their practices.

In the qualitative phase, an interview guide was used. An interview is a method of data collection in which an interviewer (researcher) asks an interviewee (participant) questions (Johnson & Christensen, 2017, p. 501; Mitchell & Jolley, 2010). The major objective of using interview is to confirm and elaborate on information gathered from other instruments (McMillan & Schumacker, 2014) such as documents or/and questionnaires. A semi-structured interview guide was used to gather qualitative data on Sissala East municipality‟s basic school teachers‟ assessment practices and conceptions. Mitchell and Jolley (2010) explained that a semi-structured interview is a form of an interview in which a core of standard questions is asked to all respondents; however, the interviewer can expand on any question to explore the answer in greater depth. Hence, the interview route enabled me to gain a more profound understanding of the issues under investigation. The guide was designed based on the issues emerging out of the results of quantitative data. The interview was conducted on a one-on-one basis.

3.5.1 Validity and reliability for qualitative instrument

Validity of a research instrument is defined by the degree to which it measures the concept(s) it is purported to measure (Awanta & Asiedu-Addo, 2008; Ruland,

Bakken & Roislien, 2007). In order to establish the validity of the research instrument, face and content validity test were carried out.

After developing the research instruments, colleague graduate students from the University of Education, Winneba and some Tutors from Tumu College of Education as well as some basic school teachers in Tumu were requested to carefully and systematically scrutinize and assess the instrument for its relevance and face validity. The feedback from the graduate students and teachers were factored into the final preparation of the instrument. Issues such as the length of the items and the general format of the questionnaire were some of the concern pointed out to the researcher during the pilot stage.

Content validity of an instrument focuses on the extent to which the content of the instrument corresponds to the concepts it is designed to measure (Agyedu, Donkor & Obeng, 2013). They opine that the usual process of establishing content validity is to examine the objectives of the instrument and compare to its content. Cooper and Schindler (2008) offered two ways to determine content validity. Firstly, it can be determined by the designer by carefully defining the topic of concern, the items to be scaled, and the scale to be used. Secondly, an expert can assess how well the instrument meets the standard. Based on this knowledge, suggestions of my supervisor and other lecturers who are experts were sought to validate the instrument.

The term reliability refers to the point where the same outcomes of repeated trials are obtained through an experiment, study or other measurement technique (Ruland, Bakken & Roislien, 2007). To ensure the reliability of the research instruments, they were pre-tested on 40 basic school teachers from Sissala West District. The researcher chose the municipality because it was deemed to have exhibited similar characteristics as the district of interest to the researcher. A

reliability analysis using Cronbach‟s Alpha statistics was performed to determine the internal consistency of the items on the questionnaire. Reliability of the questionnaire was established through the use of the Statistical Product for the Service Solution (SPSS). The reliability measurements for each section of the piloted instrument were calculated. For Teachers‟ Conception of Classroom Assessment = 0.74, and Assessment Methods and Tools had = 0. 70. According to Mujis (2011) Cronbach‟s Alpha reliability coefficient values of 0.70 or more are considered acceptable and reliable levels.

3.5.2 Trustworthiness of qualitative instrument

To guarantee the trustworthiness of the qualitative phase, the factors considered were dependability, transferability, confirmability and credibility of findings. Credibility is the study‟s capacity to measure what it is supposed to measure (Shenton, 2004). This is similar to quantitative studies with validity. To ensure this, I used member-checking to provide participants with the opportunity to confirm or question transcriptions of what they had said. Transferability means to what extent findings can be transferred to a different context (Guba, 1981; Merriam, 2001). In order to address this, I have provided extensive descriptions that allow me to present the demographic information of my participants so that the readers can acquaint themselves with the phenomenon (Shenton, 2004). A thick description will enable readers to compare with other similar situations or contexts (Guba 1981). I also compared my findings in various settings with past related studies. The use of purposive sampling was also another strategy. The participants were then chosen based on their responses in the quantitative phase. They were assumed to have core phenomena knowledge (Creswell, 2007). Dependability shows results stability over time (Guba & Lincoln, 1989). The problem is addressed by clearly explaining the

methods employed. I discussed in detail the design of the research, the data collection and the analysis process (Shenton, 2004). Confirmability implies data consistency and interpretation (Guba, 1981). This can be addressed by triangulation and carrying out a confirmability audit (Guba & Lincoln, 1989). To ensure this, I carefully kept all the research journals.

3.6 Data Analysis

Data analysis in a mixed-method study involves the analysis of both quantitative and qualitative data (Creswell & Creswell, 2018). The various data sets were analysed using appropriate data analysis methods with quantitative data analysed quantitatively and qualitative data qualitatively. Since this study employed sequential explanatory design, initially sequential data analysis was used, followed by the final phase of data integration and analysis.

The Statistical Product for Service Solutions (SPSS) software program was used to analyse the data. The data were analyzed for missing values before descriptive statistics analysis could be performed. No missing values were detected. Earlier, before entering the data, all questionnaires with any omission especially in demographic variables were not entered. This resulted in 10 questionnaires being rejected from the 224 returned questionnaires.

Furthermore, the data was explored to determine whether data was normal or non-normal distribution as the distribution of data calls for completely different analytical methods. Both, the Kolmogorov-Smirnov and Shapiro-Wilk normality tests showed non-normal distribution of data in three of the four scales with the exception of irrelevance conception which significant value was above the p – value of 0.05. According to Pallant (2016), the breach of the assumption of normality should not lead to significant problems with large enough samples (> 30 or 40); this means that

we may use parametric analytical tools even when the data are not distributable normally (Elliott & Woodward, 2007). However, as these tests were not the only means of testing normality, the researcher concentrated on finding further evidence to fulfill this assumption. Statistics of skewness and kurtosis were translated to z-scores by dividing each statistic by their standard errors respectively. Values of the skewness and kurtosis *z*-scores greater than 1.96 are significant and would indicate a potential problem (Pallant, 2016; Tabachnick & Fidell, 2013). The student accountability was the only conception that violated this recommendation with a kurtosis of .26(SE = .34) and a skewness of .84 (SE = .17). The review of histograms with normal curves plot indicated that the data was normally distributed with a slightly skewed direction to proceed with the analysis.

Furthermore, seven univariate outliers and four multivariate outliers were discarded in order to optimize test results for normality which resulted in remaining 203 cases for further analysis. Then, the scale was analyzed for reliability. For the inventory Cronbach's alpha coefficients were estimated as 0.74. This result showed a reasonable degree of reliability for the inventory and its objects.

The data was subject to descriptive statistics after checking for normality and reliability analysis. Mean values were calculated and interpreted for the individual items and sub-scales (student accountability, school accountability, improvement and irrelevance). For each item or subscale, the higher mean value implies that the participants have higher rates of agreement or vice versa with that particular conception.

Pearson product-moment correlation coefficient was applied to investigate the direction and strength of relationship among the dependent variables. This was done after preliminary analysis and assumptions of linearity and normality were performed; and correlation results were interpreted.

For inferential analysis on teachers‟ conceptions of assessment, Multivariate Analysis of Variance (MANOVA) Tests were conducted since there were more than one dependent variable. MANOVA was desirable to the Independent Sample-t Test and Analysis of Variance Analysis (ANOVA) test because, according to Pallant (2016) and Tabachnick and Fidell (2013), a MANOVA is conducted on variable means to guard against increasing the Type 1 error rate when a series of t-test or ANOVAs are performed. In such conditions, the likelihood of experiencing Type 1 error may be large, finding significant differences after multiple analysis even though in reality there was no statistically significant difference.

Prior to MANOVA data analysis, the data were explored for the purpose of assessing whether or not the data met any of MANOVA 's assumptions. In order to guarantee normality, 11outliers were omitted. Secondly, The Mahalanobis distance revealed no violation of multivariate normality. Thirdly, linearity analysis shows no serious violation of the assumption of linearity. The assumption of multicollinearity was fulfilled as the dependent variables are correlated at low to moderate range with each other (i.e., up around .8; Pallant, 2016). Additionally, Box‟s Test of Covariance Equality was conducted to examine whether the data contravenes the assumption of homogeneity of covariance matrices. Also, the Levene‟s Test of Error Variance Equality was performed to check the assumption of equality of variance. It is widely recognized that when the value Sig is bigger than .001, then it does not flout the assumption that the variance matrices are homogeneous. The data were subjected to

the Manova test once all assumptions were fulfilled. Before taking account of the multivariate test results and Wilks' Lambda values, all assumptions were investigated for each dependent variable. The results of the Multivariate Test and Wilks' Lambdas were then calculated, verified and interpreted if the dependent variable met all of the assumptions. Finally, ANOVA and t – test were used to explore whether there were significant differences in the use of assessment methods by teacher variables.

The thematic analysis method was used as the primary method of analysis for the qualitative interview. The thematic analysis involved identifying, analyzing and reporting themes or patterns within a data set (Braun & Clarke, 2006). The interview data were transcribed word-for-word by listening to the recorded audio interviews. An interpretive analytic approach was applied to the interview data set. The steps in the qualitative analysis included: (1) Listening to the audio-file, (2) Reading the transcript and checking it with the participants, (3) Coding the data by segmenting and labelling the text according to the main ideas, (3) Merging the codes by sorting, cutting and pasting, (4) Naming themes, (5) Checking the themes and sub-themes, (6) Renaming themes, (7) Writing the report, and (8) Renaming themes (Braun & Clarke, 2006; Creswell & Creswell, 2018).

The audio recordings were transcribed after several played backs. Individual transcripts were read and re-read several times, followed by a writing process where meaning units were grouped together and eventually organized into themes and sub-themes.

3.7 Ethical Considerations

One of the important ethical considerations the researcher considered was ensuring the anonymity of respondents. This means information obtained from participants did not include collecting identification information about individual

subjects (e.g., name, address, Email address, etc.), or the study did not link responses of participants with their identities (McMillan & Schumackher, 2014**).** In this study, the researcher did not seek any information that was likely to reveal the identity of the respondents.

The researcher also ensured participants of confidentiality. According to McMillan and Schumacher (2014), confidentiality ensures people do not have access to the names of the participants or their data except the researcher(s) and that the participants are informed as to who will see the data before they participate. They added that confidentiality is guaranteed by making sure that the data cannot be linked by name to individual subjects. The researcher ensured that the information provided by participants were treated with care so that it did not get to unauthorized persons who are not connected to the study in any way. Moreover, the contributions of all the individuals whose research influenced and contributed to this present study have been acknowledged.

CHAPTER FOUR

RESULTS

4.1 Introduction

The chapter presents the analysis of the data and research findings from both the quantitative and qualitative phases. The quantitative data were explored, analyzed and interpreted using descriptive statistics, t-test, analysis of variance, correlation and multivariate analysis tests and thematic analysis employed for the qualitative data.

The study was intended to explore basic school teachers' conception of assessment and their assessment practices in the Sissala East Municipality of Ghana. The following research questions guided the study:

1. How do basic school teachers in the Sissala East Municipality conceive of assessment?
2. What assessment methods and tools do basic school teachers use in assessing learners in the Sissala East Municipality?
3. To what extent do basic school teachers' assessment conceptions and classroom practices differ based on teacher variables (e.g., level of teaching, teaching experience, training in assessment, gender, and age)?
4. To what extent do basic school teachers' assessment conceptions relate to their classroom practices?

4.2 Demographic Characteristics of the Respondents

A structured questionnaire was administered to basic school teachers in the Sissala East Municipality in the Upper West Region of Ghana. Section A of the questionnaire consisted of questions 1 to 6 that requested the respondents to provide their demographic characteristics centered on their gender, age, academic qualification, grade level of teaching during time of the research, number of years of

teaching, and level of training in assessment. Their respondents were organized into frequencies and percentages and shown in Table 1. Table 1 indicates that out of a total of 203 respondents, the majority were females (n=104, 51.2%) compared to males (n=99, 48.8%). In terms of age, 9.3% (n = 19) of the respondents specified that they were within the 21 – 25, 51 of them representing 25.1% were within the age range of 26 – 30, while the majority (n=55, 27.1%) were within the 31 – 35 age range, 29 (14.3%) respondents were within the 36 -40 age range, 26 respondents representing 12.8% fell within the 41 – 46 age range and the rest of 23 (11.3%) were in the 46 and above age range. This indicates that about 76% of the respondents were below 41 years. With regard to the highest qualification of the respondents, majority (n= 108, 53.2%) of them were bachelor degree holders, 95 (45.3%) of them were diploma holders, and finally, three of them representing 1.5% had obtained their second degrees.

Table 1 further revealed that majority (n=106, 52.3%) of the respondents were teaching at the primary level (60, representing 29.6% at the lower primary and 46 representing 22.7% at the upper primary) and 97 representing 47.8% at the JHS level during the period of the study. Also, concerning the number of years of teaching, a majority (n=68, 33.5%) have taught for less than five years, 62 (30.5%) have taught for five to 10 years, 40 (19.7%) have taught for 11 to 15, and 33 representing 16.3% have taught for over 15 years.

Again from Table 1, in terms of training in educational assessment, a majority (n=102, 50.2%) indicated that they had training in assessment during their preservice studies (Diploma and Bachelor), while 101 (49.8%) indicated that in addition to their preservice studies, they had at least half a day training in assessment organized by the Ghana Education Service (GES).

Table 1: Demographic Characteristics of Respondents

Variable	Category	Frequency	Percent
Gender	Male	99	48.8
	Female	104	51.2
	Total	203	100.0
Age Range	21 - 25	19	9.4
	26 - 30	51	25.1
	31 - 35	55	27.1
	36 - 40	29	14.3
	41 - 45	26	12.8
	46 above	23	11.3
	Total	203	100.0
Highest educational qualification	Diploma (DBE)	92	45.3
	Bachelor	108	53.2
	Masters	3	1.5
	Total	203	100.0
Current Teaching Level	Lower Primary	60	29.6
	Upper Primary	46	22.7
	JHS	97	47.8
	Total	203	100.0
Teaching Experience	Less than 5 years	68	33.5
	5 - 10 years	62	30.5
	11 - 15 years	40	19.7
	Over 15 years	33	16.3
	Total	203	100.0
Training (s) in educational assessment attended	During preservice	102	50.2
	During and after preservice	101	49.8
	Total	203	100.0

(Source: Field Data, 2020)

4.3 Basic School Teachers' Conceptions of Assessment

The research question "***What are the basic school teachers' conceptions of classroom assessment in the Sissala East Municipality?***" sought to explore what the intentions of basic school teachers' are in conducting classroom assessments. It specifically intended to expose their conception of classroom assessment and its degree. There are essentially four domains of conceptions of assessment. These are improving teaching and learning, making schools accountable, making students accountable for their learning and viewing assessment as irrelevant to teaching and learning (Brown, 2006). For each segment of Teacher Conceptions of Assessment Abridged Scale (TCoA- IIIA- Version 3- Abridged), descriptive statistics (frequency, mean, and standard deviation) were used to analyse respondents' responses. The higher the mean rating of conception, the greater their agreement of the particular conception, which means that the study respondents are most likely to possess the conception. The standard deviation (SD) gives an indication of how widespread the agreement in the conception. The lower the value of SD, the higher the degree of agreement among the respondents. This implies that a teacher is very likely to have the conception if he or she is selected randomly from the study location on this particular conception. In contrast, when the spread of deviation becomes relatively large, it means that the teachers are not homogenously sharing that conception.

All the items were rated according to the degree of agreement of the participants on a six-point Likert scale. The scale used two negatives (1 = strongly disagree and 2 = mostly disagree) and four positive patterns (3 = slightly agree, 4= moderately agree, 5 = mostly agree, and 6 = strongly agree). The first two degrees are classified as disagreement, and the other four are grouped as agreement. There was no

reverse coding. Table 2 presents the overall results of the levels of the conception of assessment of TCoA- IIIA- Version 3- Abridged.

As seen in Table 2, the conception subscales mean scores varied from 2.85 to 4.99, indicating that some variability existed levels of assessment conceptions. Student accountability conception (M = 4.99, SD = .87) recorded the highest degree of rank and agreement among all the four assessment conception subscales and is followed by school accountability (M = 4.84, SD = .83) and improvement conception (M = 4.74, SD = .58). These three conceptions all have mostly agreement level. Irrelevance conception (M = 2.85, SD = .72) reflected the lowest average score and is measured around a moderate disagreement level.

Table 2: Agreement Levels of Basic School Teachers Conception of Assessment

Assessment conceptions subscales	n	M	SD
Student Accountability	203	4.99	.87
School Accountability	203	4.84	.83
Improvement	203	4.74	.58
Irrelevance	203	2.85	.72

Source: Field Data, (2020).

The standard deviation indicated Student Accountability (SD =.87) had the greatest degree of variation, and it is followed by School Accountability (SD =. 83). These imply that responses in these two conceptions are widely distributed from the grand mean. The two remaining subgroups, Improvement (SD = .58) and Irrelevance (SD = .72), showed limited variation compared to Student Accountability and School Accountability, with the Improvement conception recording the least degree of variation. The standard deviation in the improvement conception is the least among the four domains, which means that teachers' conception in this domain is much homogeneous among the respondents.

Table 3 presents results on conceptions of classroom assessment by respondents for school accountability. As indicated in Table 3, concerning school accountability conception of assessment, the highest agreement was recorded with the assertion that *"Assessment provides information on how well schools are doing"* (M = 5.27, SD = 1.13). This signifies that the basic school teachers "mostly agree" that assessment offers sufficient details about the schools' happenings and how well they are faring. Also, the respondents are slightly above a mostly disagreement level that assessment may also be used to check and measure the accomplishments of schools (M = 4.76, SD = 1.24). The lowest agreement was given to item 10 with regards to "Assessment is an accurate indicator of a school's quality" (M = 4.49, SD =1.31). This score is considered to be a moderate agreement. Considering the range of mean values from 4.49 to 5.27, it signifies that the basic school teachers supported the conception that assessment ensures the accountability of schools.

Table 3: Descriptive Statistics on Teacher's Conception with regard to School Accountability

No	Item	N	M	SD
1	Assessment provides information on how well schools are doing	203	5.27	1.13
19	Assessment is a good way to evaluate a school	203	4.76	1.24
10	Assessment is an accurate indicator of a school's quality	203	4.49	1.31

Source: Field Data, (2020).

Table 4 depicts the results of the analysis of respondents regarding assessment as holding students accountable for their learning.

Table 4: Descriptive Statistics on Student Accountability Conception

No	Item	N	M	SD
2	Assessment places students into categories	203	5.34	1.01
20	Assessment determines if students meet qualifications standards	203	5.06	1.19
11	Assessment is assigning a grade or level to student work	203	4.57	1.56

Source: Field Data, (2020).

Table 4 shows that participants in the study believed in the importance of student accountability. Concerning student accountability conception, the highest mean score reported was on the conception of assessment that it positions students into groups or categories (M = 5.34, SD = 1.01). This implies the respondents mostly agree that assessment is used to classify students into various categories such as high, medium and low achievement levels. Likewise, the respondents mostly agree with the idea that assessment can be used to determine the extent to which students meet qualifications standards (M = 5.06, SD = 1.19). It can, therefore, be deduced that the teachers support the assessment roles of categorizing and certifying the performance of their students and thus support the conception that assessments make students responsible for their learning.

Table 5 depicts the results of the analysis of respondents' conceptions regarding assessment as improving teaching and learning. As indicated in Table 5, with regards to the improvement conception, item 4, recorded the highest mean score followed by items 3 and 22 with mean values above 5.30. Item 4 mean value recorded was (M = 5.55, SD = .87), to the effect that *"Assessment provides feedback to students about their performance"* and item 3 mean value (M = 5.44, SD = .97) that "*Assessment is a way to determine how much students have learned from teaching."* The third rank item is item 22 with a mean value of (M = 5.32, SD = 1.00) that

"Assessment helps students improve their learning." This means that most respondents believed that assessment is a tool for improving student learning by providing the needed feedback on students' performance.

Again, as seen in Table 5, lower agreements were recorded for all items concerning assessment accuracy (items 15, 6 and 24). Item 15 recorded the lowest agreement value (M = 3.13, SD = 1.69) to the effect that "*assessment results are consistent*". This means that most respondents slightly disagree that assessment results are consistent. It must be noted that, apart from item 15, the rest of the items under this conception recorded a mean value above 4.10. On the whole, the mean scores ranged from 3.13 to 5.55, which imply that the basic school teachers viewed the purpose of assessment as improving teaching and learning. Hence, the respondents supported the improvement conception of assessment.

Table 5: Descriptive Statistics on Improvement Conception of Assessment

No	Item	N	M	SD
4	Assessment provides feedback to students about their performance	203	5.55	.87
3	Assessment is a way to determine how much students have learned from teaching	203	5.44	.97
22	Assessment helps students improve their learning	203	5.32	1.00
12	Assessment establishes what students have learned	203	5.09	1.01
5	Assessment is integrated with teaching practice	203	5.06	1.02
14	Assessment information modifies ongoing teaching of students	203	5.05	1.07
13	Assessment feeds back to students learning needs	203	5.03	1.21
21	Assessment measures students' higher-order thinking skills	203	4.70	1.24
23	Assessment allows different students to get different instruction	203	4.21	1.54
24	Assessment results can be depended on	203	4.13	1.36
6	Assessment results are trustworthy	203	4.11	1.36
15	Assessment results are consistent	203	3.13	1.69

Source: Field Data, (2020).

Table 6 shows the results of the analysis concerning the irrelevance conception. As observed in Table 6, under the irrelevance conception subscale, the basic school teachers moderately agree with the assertion that "*Assessment results should be treated cautiously because of measurement error*" (M= 4.38, SD= 1.50). Also, the teachers moderately agree with the statement that *"Teachers should take into account the error and imprecision in all assessment"* of irrelevance conception (M=4.37, SD= 1.61).

Table 6: Descriptive Statistics on Irrelevance Conception of Assessment.

No	Item	N	M	SD
9	Assessment results should be treated cautiously because of measurement error	203	4.38	1.50
18	Teachers should take into account the error and imprecision in all assessment	203	4.37	1.61
8	Teachers conduct assessments but make little use of the results	203	2.89	1.49
27	Assessment is an imprecise process	203	2.86	1.52
7	Assessment forces teachers to teach in a way against their beliefs	203	2.67	1.63
25	Assessment interferes with teaching	203	2.33	1.62
17	Assessment results are filed and ignored	203	2.19	1.41
16	Assessment is unfair to students	203	2.01	1.36
26	Assessment has little impact on teaching	203	1.89	1.37

Source: Field Data, (2020).

Again, from Table 6, items, 8, 27, and 7 recorded an average agreement of 2.89, 2.86 and 2.63, respectively, these values fell between mostly disagree and slightly agree according to the Likert scale used in this study. This shows that the respondents in this study slightly disagree that assessment is irrelevant as it "*forces teachers to teach in a way against their beliefs",* as teachers *"conduct assessments but make little use of the results"* and "*assessment is an imprecise process*." Four remaining items (items 26, 16, 17, 25) received a low-value range from 1.89 to 2.23.

This shows that, in this study, the basic school teachers do not believe strongly that assessment is of no value and hence are prone to view assessment as an essential part of their teaching functions, realistic to students and utilized to inform the value of teaching and learning.

A Pearson Correlation analysis was carried out to determine whether the conceptions of assessment categories are interrelated. Table 7 shows the relationships using the Pearson correlation coefficient between different levels of assessment conceptions-: conceptions of Student Accountability, School Accountability, Improvement, and Irrelevance.

Table 7: Correlations among Teacher Conceptions of Assessment (N=203)

Conceptions subscales	1	2	3	4
Student Accountability	1			
School Accountability	.55**	1		
Improvement	.49**	.53**	1	
Irrelevance	-.05	-.06	-.13	1

Source: Field Data, (2020).

** p< 0.01 (2-tailed).

Cohen's standard was used to assess the strength of the relationships, where coefficients between .10 and .29 indicate a small effect size, coefficients between .30 and .49 indicate a moderate effect size, and coefficients above .50 represent a large effect size (Cohen, 1988). The results of the analysis indicate a significant positive correlation between Student Accountability and School Accountability ($r = 0.55$, $p <$ .001). The coefficient between Student Accountability and School Accountability was 0.55, representing a large effect size. This relationship shows that as Student Accountability increases, School Accountability tends to increase. Likewise, a significant positive correlation was recorded between Student Accountability and

Improvement conceptions (r = 0.49, p < .001). The Student Accountability and Improvement correlation coefficient was 0.49, indicating a moderate effect size. This correlation indicates that Student Accountability tends to increase as Improvement increases. Also, Improvement and School Accountability were significantly positively correlated (r= 0.53, p <.001). The coefficient of correlation between Improvement and School Accountability was 0.53, which suggest a large effect size. This correlation suggests that School Accountability tends to increase as Improvement increases. Additionally, the Irrelevance assessment conception was found to be negatively correlated with the Student Accountability conception (r = -.05), School Accountability conception (r =.-.06), and Improvement conception (r -.13). These relationships were not significant.

4.4 Methods and Tools Employed in Assessing Learners

The research question ***"What assessment methods and tools do basic school teachers use in assessing learners in the Sissala East Municipality?"*** was intended to enable participants rate the extent to which they use some under listed methods and tools of assessment in the classroom subsumed under two broad domains: Traditional (formal) assessment and Alternative (informal) assessment. Six items, namely class test, class exercises, oral questions, objective assessments, homework and essay questions, made up the traditional assessment construct. In comparison, the alternative assessment construct had six items (performance assessments, authentic assessments, oral presentation, individual project work, group project work and portfolio assessment). The participants' responses were analysed using frequencies, percentages, mean rating and their standard deviations. The results are depicted in Table 8.

From Table 8, the items mean scores range from 2.4 (1.2) to 4.7 (0.6), while the frequencies and percentages of the respondents ranged from 0 (0.5%) to 154 (75.9%). The results from Table 8 further revealed that out of the 12 items rated by the teachers, five of these had a mean score higher than the mean of means score (3.5). These items include class exercises (*M* = 4.7, *SD* = 0.6), oral questions (M = 4.5, SD = .9), homework (M = 4.3, SD = .8), objective assessments (*M* = 3.7, *SD* = 1.0), and class test (M = 3.6, SD = .8). Among these five items, more than half (50% or more) of the respondent indicated they used these tools and methods often or very often (class exercises about 96%, oral questions about 88%, homework about 85%, objective test about 60%, and class test about 51%). One item, oral presentation (M = 3.5, SD = 1.12) had a mean that equals to the mean of means scores.

Table 8: Frequencies, Percentages, Mean Rating and their Standard Deviation of assessment tools and methods (n = 203).

	Never		Rarely		Sometimes		Often		Very Often			
	n	**(%)**	**n**	**%**	**n**	**(%)**	**n**	**%**	**n**	**(%)**	**M**	**SD**
Class exercises	1	(0.5)	0	(0.0)	7	(3.4)	41	(20.2)	154	(75.9)	**4.71**	**.58**
Oral questions	1	(0.5)	9	(4.4)	15	(7.4)	35	(17.2)	143	(70.4)	**4.53**	**.85**
Home work	2	(1.0)	5	(2.5)	23	(11.3)	80	(39.4)	93	(45.8)	**4.27**	**.83**
Objective assessments	2	(1.0)	21	(10.3)	58	(28.6)	72	(35.5)	50	(24.6)	**3.72**	**.98**
Class Test	1	(0.5)	6	(3.0)	91	(44.8)	79	(38.9)	26	(12.8)	**3.61**	**.77**
Oral presentations	11	(5.4)	27	(13.3)	62	(30.5)	61	(30.0)	42	(20.7)	**3.47**	**1.12**
Essay type questions	11	(5.4)	28	(13.8)	68	(33.5)	62	(30.5)	34	(16.7)	**3.39**	**1.09**
Performance assessments	21	(10.3)	36	(17.7)	84	(41.4)	38	(18.7)	24	(11.8)	**3.04**	**1.12**
Group Project work	24	(11.8)	53	(26.1)	68	(33.5)	46	(22.7)	12	(5.9)	**2.85**	**1.09**
Individual Project	23	(11.3)	57	(28.1)	71	(35.0)	38	(18.7)	14	(6.9)	**2.82**	**1.08**
Authentic assessments	27	(13.3)	57	(28.1)	82	(40.4)	31	(15.3)	6	(3.0)	**2.67**	**.99**
Portfolios Assessment	55	(27.1)	65	(32.0)	40	(19.7)	29	(14.3)	14	(6.9)	**2.42**	**1.22**

Source: Field Data, (2020).
Mean of means = 3.46

Again, Table 8 indicates that six items had a mean score less than the item mean of means score (3.5). The items include essay type questions (M = 3.39, SD = 1.09), performance assessments (M = 3.04, SD = 1.12), group project work (M = 2.85, SD = 1.09), individual project work (M = 2.82, SD = 1.08), authentic assessment (M = 2.67, SD = .99), and portfolio assessment (M = 2.42, SD = 1.22). These items' mean scores were less because the majority of the respondents indicated that they sometimes, seldom, or never use these assessment tools and methods.

4.5 Conception of Assessment and Classroom Practices Based on Teacher Variables

Composite scores for assessment conceptions and practices were disaggregated according to each independent variable: gender, age, level of education, teaching level, years of experience, and assessment training. Descriptive analyses were computed to conduct a mean score comparison among the independent variables (gender, age, educational level, teaching level, years of experience, and assessment training) and assessment conceptions and practices. Multivariate Analysis of Variance test was performed for each level of the independent variable to determine if there was significant variation between teachers' ratings of assessment conceptions.

According to Pallant (2016) and Tabachnick and Fidell (2013), a MANOVA is conducted on variable means to guard against increasing the Type 1 error rate when a series of t-test or ANOVAs are performed. However, to check the MANOVA assumption of multicollinearity that the dependent variables are correlated at low to moderate range with each other (i.e., the correlation should not be above .80; Pallant 2016) a series of Pearson correlations were made among all dependent variables before the MANOVA was performed. The results of the correlation matrix show a significant display of correlations among the majority of the dependent variables,

which indicate that the appropriateness of a MANOVA is unlikely significantly influenced by multicollinearity. ANOVA and t-tests were also used to analyse assessment methods and the varying demographic characteristics, and the statistical results were presented.

4.5.1 Conceptions of assessment and gender

Mean aggregate values were compared for the two different levels of the independent variable, gender for each assessment conception subgroup. The two levels of this variable were: male and female. Table 9 provides a summary of the mean values for each gender level by the conception of assessment subcategory. The data showed a general trend whereby females had the highest average values for school accountability, student accountability and improvement conceptions. However, males had the largest mean for conception of irrelevance. Standard deviations for each subcategory revealed that the most variability of responses was related to student accountability, while the least variability of responses was related to the improvement conception.

Table 9: Mean Scores of Conceptions of Assessment by Gender

Gender		School Accountability		Student Accountability		Improvement		Irrelevance	
	N	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Male	99	4.76	.86	4.95	.81	4.63	.59	2.95	.71
Female	104	4.92	.81	5.04	.92	4.84	.55	2.73	.71

Source: Field Data, (2020).

A one-way multivariate analysis of variance (MANOVA) was conducted to see if the mean differences were significant statistically. A Box's Test of Covariance Equality was conducted to examine whether the data flouts the hypothesis of homogeneity of covariance matrices. A p-value of 450, based on an alpha value of

0.05, was correlated with the Box M value of 10.114. This suggested that each sex group of covariance matrices was identical to each other, and the assumption has been fulfilled. Again, the Levene's Test of Error Variance Equality was performed to check the assumption of and equality of variance. The test results of Levene, as shown in Table 10 revealed that all the *p* values were greater than .05, indicating that the assumption of the equality of variance was satisfied. Furthermore, tests for linearity, normality and multivariate and univariate outliers were performed with no grave contraventions.

Table 10: Levene's Test of Equality of Error Variances (Gender)

	F	df1	df2	Sig.
School Accountability	.725	1	201	.396
Student Accountability	1.242	1	201	.266
Improvement	.000	1	201	.997
Irrelevance	.019	1	201	.890

Source: Field Data, (2020).

A MANOVA was performed to examine mean differences between gender levels (male and female) and conception of assessment (School Accountability, Improvement, Student Accountability and Irrelevance) scores. The results revealed that the main effect for Gender was significant, Wilks‟ Lambda = .95, F (4, 198) = 2.53, $p < .05$; multivariate $\eta^2 = 0.05$. The effect size valued at.05 means that gender accounted for 5.0 percent of the variance in the dependent variable. The details of the MANOVA results are presented in Table 11.

Table 11: MANOVA Results for School Accountability, Student Accountability, Improvement, and Irrelevance by Gender

Variable	Wilks' Lambda	*F*	Hypothesis df	Error df	*p*	Partial Eta Squared
Gender	.951	2.53	4	198	.042	0.05

Source: Field Data, (2020).

The significant value of the Wilks' Lambda statistics required a follow-up analysis test of a post hoc multiple comparisons. However, to guard against the Type 1 error (Pallant, 2016), a Bonferroni procedure was used to test each ANOVA at a p-value of 0.0125 (0.05 divided by the number of dependent variables). Based on this adjusted alpha value of 0.013), the univariate ANOVA results for the dependent variables were verified individually, and the only variable to attain a difference in statistical significance was Improvement, F (1, 201) = 6.56, p = .011, partial eta squared = .03. The details of each variable are shown in Table 12. An analysis of the mean scores revealed that females recorded marginally higher levels of Improvement conception (M = 4.84, SD = .55) than males (M = 4.63, SD = .59).

Table 12: Tests of Between-Subjects for Gender

Source	Dependent Variable	df	F	p.	η^2
Gender	School Accountability	1	1.86	.174	.01
	Student Accountability	1	.53	.466	.00
	Improvement	1	6.56	.011	.03
	Irrelevance	1	4.27	.040	.02

(Source: Field Data, 2020)

4.5.2 Conceptions of assessment and age group

For the analysis of significant differences in mean scores according to age, age was categorized into three groups. These are low (21 – 30 years), mid (31 – 40 years), and high (41 and above years) age groups. Mean aggregate values were compared for

the three different levels of the independent variable, age for each assessment conception subgroup. Table 13 provides a summary of the mean values for each age group by the conception of assessment subcategories. The data showed a general trend whereby those in the mid (31 – 40 years) age group had the highest average values for all the dependent variables except school accountability, where those with a low age group scored the highest. Standard deviations for each subcategory revealed that the most variability of responses was related to student accountability for low (21 – 30 years) age group and high (40 – 60 years) group, while the least variability of responses was related to the improvement conception.

Table 13: Comparison of Mean Scores of Conceptions of Assessment by Age

Age (years)	N	School Accountability		Student Accountability		Improvement		Irrelevance	
		M	SD	M	SD	M	SD	M	SD
21 - 30	70	4.90	.89	4.90	.87	4.73	.50	2.88	.68
31 - 40	84	4.82	.78	5.08	.84	4.75	.62	2.91	.76
41 - 60	49	4.80	.85	4.97	.91	4.73	.52	2.77	.70

Source: Field Data, (2020).

A one-way multivariate analysis of variance (MANOVA) was conducted to see if the mean differences were significant statistically. A Box's Test of Covariance Equality was conducted to examine whether the data flouts the hypothesis of homogeneity of covariance matrices. A p-value of 0.320, based on an alpha value of 0.05, was correlated with the Box M value of 28.084. This suggested that each age group of covariance matrices was identical to each other, and the assumption has been fulfilled. Again, the Levene's Test of Error Variance Equality was performed to check the assumption of and equality of variance. The test results of Levene, as shown in Table 14, revealed that all the *p* values were greater than .05, indicating that the assumption of the equality of variance was satisfied. Furthermore, tests for linearity,

normality and multivariate and univariate outliers were performed with no grave violations.

Table 14: Levene's Test of Equality of Error Variances (Age Group)

	F	df1	df2	Sig.
School Accountability	1.043	2	200	.354
Student Accountability	.057	2	200	.945
Improvement	1.214	2	200	.299
Irrelevance	.742	2	200	.477

(Source: Field Data, 2020)

The MANOVA test results revealed that there were no statistically significant differences among participant's years of age on the combined dependent variables, F (8, 396) = .68, p = .705; Wilks Lambda =.97; partial eta squared = .01. This suggests that the linear combination of School Accountability, Student Accountability, Improvement, and Irrelevance was similar for each level of age group. The MANOVA results are presented in Table 15. Since there were no significant predictors, additional testing was not performed.

Table 15: MANOVA Results for School Accountability, Student Accountability, Improvement, and Irrelevance by Age

Variable	Wilks' Lambda	*F*	Hypothesis df	Error df	*p*	Partial Eta Squared
Age	.973	.68	8	394	.705	0.01

(Source: Field Data, 2020)

4.5.3 Conceptions of assessment and educational level.

Mean aggregate scores were compared for the two different levels of the independent variable, educational level for each assessment conception subgroup. The two levels of this variable were: diploma and, Bachelor and above. There were only

three respondents who attained a master's degree, so this number was added to the bachelor group because of their small number. Table 16 provides a summary of the mean values for each educational level by the conception of assessment subcategories.

Table 16: Comparison of Mean Scores of Conceptions of Assessment by Educational Level

Highest Qualification	N	School Accountability		Student Accountability		Improvement		Irrelevance	
		M	SD	M	SD	M	SD	M	SD
Diploma	92	4.91	.80	4.99	.84	4.79	.58	2.85	.70
Bachelor & above	111	4.78	.85	5.00	.89	4.69	.58	2.84	.73

Source: Field Data, (2020).

The data showed a general trend whereby teachers with only diploma qualification had the highest mean scores for school accountability, improvement and irrelevance conceptions. However, those with a bachelor's degree and above had the highest mean for student accountability conception. Standard deviations for each subcategory revealed that the most variability of responses was related to student accountability, while the least variability of responses was related to the improvement conception.

A one-way multivariate analysis of variance (MANOVA) was conducted to see if the mean differences were significant statistically. A Box's Test of Covariance Equality was conducted to examine whether the data flouts the hypothesis of homogeneity of covariance matrices. A p-value of 0.656, based on an alpha value of 0.05, was correlated with the Box M value of 7.891. This suggested that each educational level group of covariance matrices was identical to each other, and the assumption has been fulfilled. Again, the Levene's Test of Error Variance Equality was performed to check the assumption of and equality of variance. The test results of

Levene, as shown in Table 17, revealed that all the *p* values were greater than .05, indicating that the assumption of the equality of variance was satisfied. Furthermore, tests for linearity, normality and multivariate and univariate outliers and multicollinearity were performed with no grave contraventions.

Table 17: Levene's Test of Equality of Error Variances (Educational Level)

	F	df1	df2	Sig.
School Accountability	.347	1	201	.556
Student Accountability	.230	1	201	.632
Improvement	.199	1	201	.656
Irrelevance	.551	1	201	.459

Source: Field Data, (2020).

The MANOVA test results revealed that the main effect for educational level was not significant, $F(4, 198) = .72$, $p = .58$; Wilks' Lambda = .99; partial eta squared = .01, suggesting the linear combination of School Accountability, Student Accountability, Improvement and Irrelevance was not significantly different between the educational levels. The results are presented in Table 18.

Table 18: MANOVA Results for School Accountability, Student Accountability, Improvement, and Irrelevance by Educational Level

Variable	Wilks' Lambda	*F*	Hypothesis df	Error df	*p*	η^2
Gender	.986	.717	4	198	.58	0.01

(Source: Field Data, 2020)

4.5.4 Conceptions of assessment and class level of teaching

Mean aggregate scores were compared for the three different levels of the independent variable, level of teaching for each assessment conception subgroup. The three levels of this variable were: lower primary, upper primary and JHS. Table 19 provides a summary of the mean values for each level of teaching by the conception

of assessment subcategories. The data showed a general trend whereby those teaching at lower primary level had the highest mean values for the school accountability, student accountability and improvement conceptions sub-dimensions with the mean scores declining to their lowest level at the JHS level except for student accountability conception. However, the reverse is true for the irrelevance conception, where those at the JHS level had the highest and the lower primary level, the lowest. Standard deviations for each subcategory revealed that the most variability of responses was related to student accountability, while the least variability of responses was related to the improvement conception.

Table 19: Comparison of Mean Scores of Conceptions of Assessment by Age

Age (years)	N	School Accountability		Student Accountability		Improvement		Irrelevance	
		M	SD	M	SD	M	SD	M	SD
Lower Primary	60	5.01	.77	5.12	.82	4.88	.55	2.76	.71
Upper Primary	46	4.89	.83	4.93	.89	4.72	.51	2.82	.67
JHS	97	4.71	.86	4.94	.98	4.66	.62	2.91	.72

Source: Field Data, (2020).

A one-way multivariate analysis of variance (MANOVA) was conducted to see if the mean differences were significant statistically. A Box's Test of Covariance Equality was conducted to examine whether the data flouts the hypothesis of homogeneity of covariance matrices. A p-value of 0.748, based on an alpha value of 0.05, was correlated with the Box M value of 15.997. This suggested that each level of teaching group of covariance matrices was identical to each other, and the assumption has been fulfilled. Again, the Levene's Test of Error Variance Equality was performed to check the assumption of and equality of variance. The test results of Levene, as shown in Table 20, revealed that all the *p* values were greater than .05,

indicating that the assumption of *the* equality of variance was satisfied. Furthermore, tests for linearity, normality and multivariate and univariate outliers and multicollinearity were performed with no grave contraventions.

Table 20: Levene's Test of Equality of Error Variances (Class Level of Teaching)

	F	df1	df2	Sig.
School Accountability	1.210	2	200	.300
Student Accountability	.107	2	200	.899
Improvement	.924	2	200	.399
Irrelevance	.284	2	200	.753

Source: Field Data, (2020).

The MANOVA results show that there were no statistically significant differences among participant"s level of teaching on the combined dependent variables, F (8, 394) = .1.134, p = .339; Wilks Lambda = .96; partial eta squared = .02. The results are shown in Table 21. Since there were no significant predictors, additional testing was not performed.

Table 21: MANOVA Results for School Accountability, Student Accountability, Improvement, and Irrelevance by Class Level of Teaching

Variable	Wilks' Lambda	*F*	Hypothesis df	Error df	*p*	Partial Eta Squared
Class Level of Teaching	.955	1.134	8	394	.399	0.02

Source: Field Data, (2020).

4.5.5 Conceptions of assessment and years of teaching experience

Mean aggregate scores were compared for the three different levels of the independent variable, years of teaching experience for each assessment conception subgroup. The three levels of this variable were: low (less than five years), mid (5 – 10 years) and long (over ten years) teaching experience. Table 22 provides a summary

of the mean values for each level of years of teaching experience by the conception of assessment subcategories. The data showed a general trend whereby those with low (less than five years) teaching experience had the highest mean values for school accountability. Those with mid (5 – 10 years) teaching experience had the highest mean value for student accountability and irrelevance conceptions while those with high (over ten years) teaching experiences had the highest mean score in improvement conception.

Table 22: Comparison of Mean Scores of Conceptions of Assessment by Years of Teaching Experience

Teaching Experience (years)	N	School Accountability		Student Accountability		Improvement		Irrelevance	
		M	SD	M	SD	M	SD	M	SD
< 5 years (low)	68	4.89	.79	4.91	.84	4.74	.64	2.86	.66
5 – 10 years(mid)	62	4.87	.87	5.14	.86	4.72	.56	2.89	.79
>10 years (high)	73	4.76	.85	4.94	.90	4.75	.54	2.79	.70

Source: Field Data, (2020).

Also, teachers with low teaching experience scored the lowest mean value for student accountability conception, and those with long teaching experience had the lowest mean value in school accountability and irrelevance conceptions. Standard deviations for each subcategory revealed that the most variability of responses was related to student accountability among the high teaching experience group. In contrast, the least variability of responses was related to the improvement conception among those with high teaching experience.

A one-way multivariate analysis of variance (MANOVA) was conducted to see if the mean differences were significant statistically. A Box's Test of Covariance Equality was conducted to examine whether the data flouts the assumption of homogeneity of covariance matrices. A p-value of 0.086, based on an alpha value of 0.05, was correlated with the Box M value of 29.938. This suggested that each level

of teaching group of covariance matrices was identical to each other, and the assumption has been fulfilled. Again, the Levene's Test of Error Variance Equality was performed to check the assumption of and equality of variance. The test results of Levene, as shown in Table 23, revealed that all the *p* values were greater than .05, indicating that the assumption of *the* equality of variance was satisfied. Furthermore, tests for linearity, normality and multivariate and univariate outliers and multicollinearity were performed with no grave contraventions.

Table 23: Levene's Test of Equality of Error Variances (Years of Experience)

	F	df1	df2	Sig.
School Accountability	.299	2	200	.742
Student Accountability	.592	2	200	.554
Improvement	.438	2	200	.646
Irrelevance	2.521	2	200	.083

Source: Field Data, (2020).

The MANOVA results show that there were no statistically significant differences among participant's level of years of teaching experience on the combined dependent variables, F (8, 394) = .812, p = .593; Wilks Lambda = .97; partial eta squared = .02. The results are shown in Table 24. Since there were no significant predictors, additional testing was not performed.

Table 24: MANOVA Results for School Accountability, Student Accountability, Improvement, and Irrelevance by Years of Teaching Experience

Variable	Wilks' Lambda	*F*	Hypothesis df	Error df	*p*	Partial Eta Squared
Teaching Experience	.968	.812	8	394	.593	0.02

Source: Field Data, (2020).

4.5.6 Conceptions of assessment and training in assessment.

Training in assessment was categorized into two levels as: training during pre-service only and training during and after pre-service. Table 25 summarizes the mean scores for each category of training in assessment by the conception sub-dimensions: Student accountability, School accountability, Improvement and Irrelevance. The data revealed that teachers with training in assessment during and after pre-service recorded the highest mean scores for all the levels of assessment conceptions. Standard deviations for each subgroup indicated that the most variability in responses was associated with school accountability.

Table 25: Comparison of Mean Scores of Conceptions of Assessment by Training in Assessment

Assessment Training		School Accountability		Student Accountability		Improvement		Irrelevance	
	N	M	SD	M	SD	M	SD	M	SD
During pre-service	102	4.81	.83	4.94	.91	4.66	.63	2.82	.71
During & after pre-service	101	4.86	.84	5.04	.83	4.82	.52	2.87	.73

Source: Field Data, (2020).

A one-way multivariate analysis of variance (MANOVA) was conducted to see if the mean differences were significant statistically. A Box's Test of Covariance Equality was conducted to examine whether the data violates the hypothesis of homogeneity of covariance matrices. A p-value of 0.686, based on an alpha value of 0.05, was correlated with the Box M value of 7.572. This suggested that each educational level group of covariance matrices was identical to each other, and the assumption has been fulfilled. Again, the Levene's Test of Error Variance Equality was performed to check the assumption of and equality of variance. The test results of Levene, as shown in Table 26, revealed that all the *p* values were greater than .05,

indicating that the assumption of the equality of variance was satisfied. Furthermore, tests for linearity, normality and multivariate and univariate outliers and multicollinearity were performed with no grave contraventions.

Table 26: Levene's Test of Equality of Error Variances (Assessment Training)

	F	df1	df2	Sig.
School Accountability	.986	1	201	.322
Student Accountability	3.441	1	201	.065
Improvement	.038	1	201	.845
Irrelevance	.001	1	201	.973

Source: Field Data, (2020).

The MANOVA test results revealed that the main effect for training in assessment was not significant, $F(4, 198) = .1.22$, $p = .30$; Wilks' Lambda = .98; partial eta squared = .02, suggesting the linear combination of School Accountability, Student Accountability, Improvement and Irrelevance was not significantly different between the levels of assessment training. The results are presented in Table 27.

Table 27: MANOVA Results for School Accountability, Student Accountability, Improvement, and Irrelevance by Educational Level

Variable	Wilks' Lambda	*F*	Hypothesis df	Error df	*p*	η^2
Gender	.976	1.219	4	198	.30	0.02

Source: Field Data, (2020).

4.5.7 Assessment practices and gender

Mean aggregate values were compared for the two different levels of the independent variable, gender for each assessment practice. The two levels of this variable were: male and female. Table 28 provides a summary of the mean values for each gender level by assessment practice as well as an independent t-test. The data showed that females had the highest average values objective assessments, oral

questions, homework, class exercises, performance assessments, oral presentations, individual project work, group project work and portfolio assessments. The males also had the highest mean scores for Class tests, Essay type questions and Authentic assessments. Standard deviations for each assessment practice revealed that the most variability of responses was related to portfolio assessment, while the least variability of responses was related to the class exercises.

Table 28: T-test Analysis of Assessment Practice Means by Gender

Variable	Male			Female			Independent t-test		
	n	M	SD	n	M	SD	t	df	sig
Class test	99	3.62	.80	104	3.61	.73	.10	201	.92
Objective assessment	99	3.55	.95	104	3.91	.95	-2.76	201	.01*
Essay type questions	99	3.61	1.00	104	3.20	1.12	2.71	201	.01*
Oral questions	99	4.45	.86	104	4.62	.78	-1.40	201	.16
Homework	99	4.20	.83	104	4.37	.71	-1.51	201	.13
Class exercises	99	4.58	.61	104	4.86	.40	-3.88	201	.00*
Performance assessments	99	3.01	1.09	104	3.07	1.15	-.36	201	.72
Authentic assessments	99	2.67	1.02	104	2.66	.96	.02	201	.98
Oral presentations	99	3.32	1.17	104	3.62	1.06	-1.87	201	.06
Individual Project work	99	2.80	1.11	104	2.84	1.07	-.25	201	.80
Group Project work	99	2.83	1.11	104	2.87	1.07	-.24	201	.81
Portfolio Assessment	99	2.40	1.23	104	2.43	1.22	-.17	201	.87

Source: Field Data, (2020).

* $p < .05$

An independent t-test was performed to find out whether differences existed in the mean scores of assessment practices by gender. As indicated in Table 28, the t-test revealed a significant difference between male and female teachers in the use of Objective assessments, essay type questions and class exercises. The t-test revealed a statistically significant difference between males and females in their objective item assessment practices ($t(201) = -2.76$, $p < .05$). Females ($M = 3.91$, $SD = .95$) had

significantly higher values than Males (M = 3.55, SD= .62). Also, the t-test results revealed a statistically significant difference between males and females in their use of essay type questions (t (201) = 2.71, p < .05). Males (M = 3.61, SD = 1.00) had significantly higher levels of essay types questions than females (M = 3.20, SD= .1.12). Again, the t-test revealed a statistically significant difference between males and females in their use of class exercises (t (201) = -3.88, p< .05). Females (M = 4.86, SD = .40) had significantly higher values than Males (M = 4.58, SD= .61).

4.5.8 Assessment practices by age

For the analysis of significant differences in mean scores according to age, age was categorized into three groups. These are low (21 – 30 years), mid (31 – 40 years), and high (41 and above years) age groups. Mean aggregate values were compared for the three different levels of the independent variable, age for each assessment practice. Table 29 provides a summary of the mean values for each age group by the assessment practice. The data showed a general trend whereby those in low (21 – 30 years) age group had the highest average values for traditional assessment methods such as Class test, Essay type questions, Oral questions, homework, and Class exercises. In contrast, those in high (41 -60 years) age group scored the highest values in alternative assessment practices such as Performance assessment, Authentic assessment, project works, portfolio and oral presentation and a traditional assessment practice of objective assessments. Standard deviations for each practice revealed that the most variability of responses was related to portfolio assessment for mid (31 – 40 years) age group, while the least variability of responses was related to the use of class exercises among the low (21 – 30 years) age group.

Table 29: Comparison of Assessment Practice Means by Age

Variable	21 – 30 years (Low)			31 – 40 years (Mid)			41 – 60 years (High)		
	n	M	SD	n	M	SD	n	M	SD
Class test	70	3.70	.84	84	3.57	.73	49	3.55	.71
Objective assessment	70	3.53	1.00	84	3.79	.95	49	3.94	.90
Essay type questions	70	3.50	1.15	84	3.26	1.03	49	3.49	1.04
Oral questions	70	4.69	.67	84	4.50	.81	49	4.39	1.00
Homework	70	4.37	.77	84	4.30	.77	49	4.14	.79
Class exercises	70	4.74	.50	84	4.73	.52	49	4.67	.59
Performance assessments	70	2.94	1.17	84	3.00	1.11	49	3.24	1.07
Authentic assessments	70	2.69	1.04	84	2.51	.95	49	2.90	.94
Oral presentations	70	3.43	1.15	84	3.40	1.15	49	3.65	1.03
Individual Project work	70	2.70	1.08	84	2.75	1.05	49	3.10	1.14
Group Project work	70	2.89	1.11	84	2.64	.99	49	3.14	1.16
Portfolio Assessment	70	2.24	1.14	84	2.36	1.30	49	2.78	1.16

Source: Field Data, (2020).

One-way ANOVA was used to test for the differences between the age groups for the categories of assessment practices and the results shown in Table 30. The results showed a significant difference in assessment practice by age. Precisely, there was a significant difference in group project work. A Scheffe post hoc analysis (see Table 31) showed a significant mean difference for group project work between teachers with mid (31-40 years) and high (41 – 60 years) (M = 3.14, age groups. Teachers with high (41 – 60 years) age score was significantly higher than those with mid (31 -40 years) age group by a difference of .500.

Table 30: ANOVA of Assessment Practices for Age

Practice		df	F	Sig.
	Between Groups	2	.74	.48
Class Test	Within Groups	200		
	Total	202		
	Between Groups	2	2.87	.06
Objective assessments	Within Groups	200		
	Total	202		
	Between Groups	2	1.16	.32
Essay type questions	Within Groups	200		
	Total	202		
	Between Groups	2	2.06	.13
Oral questions	Within Groups	200		
	Total	202		
	Between Groups	2	1.27	.28
Homework	Within Groups	200		
	Total	202		
	Between Groups	2	.26	.77
Class exercises	Within Groups	200		
	Total	202		
	Between Groups	2	1.14	.32
Performance assessments	Within Groups	200		
	Total	202		
	Between Groups	2	2.42	.09
Authentic assessments	Within Groups	200		
	Total	202		
	Between Groups	2	.84	.43
Oral presentations	Within Groups	200		
	Total	202		
	Between Groups	2	2.30	.10
Individual Project work	Within Groups	200		
	Total	202		
	Between Groups	2	3.43	.03*
Group Project work	Within Groups	200		
	Total	202		
	Between Groups	2	2.98	.05
Portfolios Assessment	Within Groups	200		
	Total	202		

(Source: Field Data, 2020)

*P < .05

Table 31: Scheffe Post Hoc for-Assessment Practice (Group Project Work) and Age

(I) Age Group	(J) Age Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
21 - 30	31 - 40	.243	.174	.378	-.19	.67
	41 - 60	-.257	.200	.439	-.75	.24
31 - 40	21 - 30	-.243	.174	.378	-.67	.19
	41 - 60	-.500*	.193	.037	-.98	-.02
41 - 60	21 - 30	.257	.200	.439	-.24	.75
	31 - 40	.500*	.193	.037	.02	.98

*. The mean difference is significant at the 0.05 level.
(Source: Field Data, 2020)

4.5.9 Assessment practices and educational level

Mean aggregate scores were compared for the two different levels of the independent variable, educational level for each assessment practice. The two levels of this variable were: diploma and Bachelor and above. There were only three respondents who attained a master's degree, so this number was added to the bachelor group because of their small number. Table 32 provides a summary of the mean values for each educational level by assessment practices as well as results of an independent t-test. The data revealed that teachers with a diploma educational level had the highest mean scores for class tests, oral questions, homework, class exercises, performance assessments, authentic assessments, and oral presentations. However, those with a bachelor's degree and above had the highest mean values for objective assessment, essay type questions, individual project work, group project work and portfolio assessments. Standard deviations for each dependent variable revealed that the most variability of responses was related to portfolio assessment, while the least variability of responses was related to the class exercises.

Table 32: T- test analysis of Assessment Practice Means by Educational Level

Variable	Diploma			Bachelor and above			Independent t-test		
	n	M	SD	n	M	SD	t	df	sig
Class test	92	3.66	.83	111	3.57	.71	.89	201	.38
Objective assessment	92	3.71	1.02	111	3.76	.92	-.37	201	.71
Essay type questions	92	3.37	1.11	111	3.42	1.01	-.35	201	.72
Oral questions	92	4.63	.66	111	4.46	.93	1.48	201	.14
Homework	92	4.35	.76	111	4.23	.79	1.04	201	.30
Class exercises	92	4.75	.48	111	4.69	.57	.75	201	.45
Performance assessments	92	3.10	1.10	111	2.99	1.14	.68	201	.50
Authentic assessments	92	2.74	1.05	111	2.60	.94	.97	201	.33
Oral presentations	92	3.53	1.16	111	3.42	1.09	.69	201	.49
Individual Project work	92	2.68	1.16	111	2.93	1.01	-1.60	201	.11
Group Project work	92	2.84	1.13	111	2.86	1.05	-.12	201	.90
Portfolio Assessment	92	2.26	1.23	111	2.55	1.20	-1.68	201	.09

Source: Field Data, (2020).

An independent t-test was conducted to find out whether there were differences in assessment practice by educational level. The test revealed that there was no significant difference between teachers with diploma educational level and those with a bachelor's degree in all the assessment practices. The mean of those with diploma qualification was not significantly different from those with bachelor and above qualification in all the assessment practices. In other words, teacher qualification or educational level does not affect teachers' assessment practices.

4.5.10 Assessment practices and class level of teaching

Mean aggregate scores were compared for the three different levels of the independent variable, level of teaching for each assessment practice. The three levels of this variable were: lower primary, upper primary and JHS. Table 33 provides a summary of the mean values for each level of teaching by the assessment practices.

Table 33: Comparison of Assessment Practices Means by Grade Level of Teaching

Variable	Lower Primary			Upper Primary			JHS		
	n	M	SD	n	M	SD	n	M	SD
Class test	60	3.60	.79	46	3.63	.85	97	3.61	.72
Objective assessment	60	3.98	1.00	46	3.85	.92	97	3.53	.93
Essay type questions	60	2.97	1.31	46	3.43	1.05	97	3.65	.83
Oral questions	60	4.57	.75	46	4.65	.82	97	4.46	.87
Homework	60	4.35	.78	46	4.41	.62	97	4.19	.83
Class exercises	60	4.80	.44	46	4.87	.40	97	4.60	.61
Performance assessments	60	3.12	1.22	46	3.26	1.00	97	2.89	1.10
Authentic assessments	60	2.75	.93	46	2.83	.93	97	2.54	1.04
Oral presentations	60	3.42	1.09	46	3.72	1.11	97	3.39	1.14
Individual Project work	60	2.75	1.20	46	2.96	1.05	97	2.79	1.02
Group Project work	60	2.95	1.19	46	2.98	1.09	97	2.72	1.02
Portfolio Assessment	60	2.58	1.34	46	2.33	1.10	97	2.36	1.20

Source: Field Data, (2020).

* $p < .05$

The data from Table 33 showed those teaching at lower primary level had the highest mean values for objective assessment and portfolio assessment practices. Also, those at the upper-grade level recorded the highest mean scores for class tests, oral questions, homework, class exercises, performance assessments, authentic assessments, oral presentations, individual project work, and group project work; whiles those at the JHS level had the highest mean value for the use of essay type questions. Standard deviations for each assessment practice revealed that the most variability of responses was related to portfolio assessment within the lower grade level. In contrast, the least variability of responses was related to the class exercises within the upper-grade level.

One-way ANOVA was used to test for the differences between the age groups for the categories of assessment practices and the results shown in Table 34. The result showed a significant difference in assessment practice by age. Precisely, there was a significant difference in objective assessment. A Scheffe post hoc analysis (see Table.35) showed a significant mean difference for objective assessment between teachers teaching at the lower grades and those teaching at the JHS level. Teachers teaching at the lower primary level (M = 3.98, SD = 1.00) had a significantly higher mean score in their reported usage of objective assessments than those teaching at the JHS level (M = 3.53, SD = .93). Also, there was a significant difference in essay type assessments. A Scheffe post hoc analysis (see Table 35) showed a significant mean difference for essay type assessments between teachers teaching at the lower grades and those teaching at the JHS level. Teachers teaching at the lower level (M = 2.97, SD = 1.31) had a significantly lower mean score in their reported usage of essay type assessments than those teaching at the JHS level (M = 3.65, SD = .83).

Table 34: ANOVA of Assessment Practices for Grade Level of Teaching

Practice		df	F	Sig.
Class Test	Between Groups	2	.021	.98
	Within Groups	200		
	Total	202		
Objective assessments	Between Groups	2	4.76	.01*
	Within Groups	200		
	Total	202		
Essay type questions	Between Groups	2	7.99	.00*
	Within Groups	200		
	Total	202		
Oral questions	Between Groups	2	.87	.42
	Within Groups	200		
	Total	202		
Homework	Between Groups	2	1.65	.20
	Within Groups	200		
	Total	202		
Class exercises	Between Groups	2	5.28	.01*
	Within Groups	200		
	Total	202		
Performance assessments	Between Groups	2	1.96	.14
	Within Groups	200		
	Total	202		
Authentic assessments	Between Groups	2	1.67	.19
	Within Groups	200		
	Total	202		
Oral presentations	Between Groups	2	1.43	.24
	Within Groups	200		
	Total	202		
Individual Project work	Between Groups	2	.52	.60
	Within Groups	200		
	Total	202		
Group Project work	Between Groups	2	1.26	.29
	Within Groups	200		
	Total	202		
Portfolios Assessment	Between Groups	2	.78	.46
	Within Groups	200		
	Total	202		

Source: Field Data, (2020).

*p < .05

Again, there was a significant difference in class exercises assessments practices. A Scheffe post hoc analysis (see Table 35) showed a significant mean difference for class exercises assessments between teachers teaching at the upper primary grades and those teaching at the JHS level. Teachers teaching at the upper Primary level (M = 4.87, SD = .40) had a significantly higher mean score in their reported usage of class exercises than those teaching at the JHS level (M = 4.60, SD = .61).

Table 35: Scheffe Post Hoc for-Assessment Practice (Objective Assessment, Essay Type Questions and Class Exercises) and Grade Levels of Teaching

Dependent Variable	(I) Current Teaching Level	(J) Current Teaching Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Objective assessments	Lower Primary	Upper Primary	.136	.185	.766	-.32	.59
		JHS	.458*	.155	.014	.07	.84
	Upper Primary	Lower Primary	-.136	.185	.766	-.59	.32
		JHS	.322	.169	.167	-.10	.74
	JHS	Lower Primary	-.458*	.155	.014	-.84	-.07
		Upper Primary	-.322	.169	.167	-.74	.10
Essay type questions	Lower Primary	Upper Primary	-.468	.204	.075	-.97	.04
		JHS	-.683*	.171	.000	-1.11	-.26
	Upper Primary	Lower Primary	.468	.204	.075	-.04	.97
		JHS	-.215	.187	.517	-.67	.25
	JHS	Lower Primary	.683*	.171	.000	.26	1.11
		Upper Primary	.215	.187	.517	-.25	.67
Class exercises	Lower Primary	Upper Primary	-.070	.102	.793	-.32	.18
		JHS	.202	.085	.063	-.01	.41
	Upper Primary	Lower Primary	.070	.102	.793	-.18	.32
		JHS	.272*	.093	.016	.04	.50
	JHS	Lower Primary	-.202	.085	.063	-.41	.01
		Upper Primary	-.272*	.093	.016	-.50	-.04

Source: Field Data, (2020).
*. The mean difference is significant at the 0.05 level.

4.5.11 Assessment practice and years of teaching experience

Mean aggregate scores were compared for the three different levels of the independent variable, years of teaching experience for each assessment practice. The three levels of this variable were: low (less than 5 years), mid (5 – 10 years) and high (over 10 years) teaching experience. Table 36 provides a summary of the mean values for each level of years of teaching experience by the assessment practices.

Table 36: Comparison of Assessment Practices Means by Years of Teaching Experience

Variable	< 5 years (Low)			5 - 10 years (Mid)			>10 years (High)		
	n	M	SD	n	M	SD	n	M	SD
Class test	68	3.66	.84	62	3.58	.71	73	3.59	.74
Objective assessment	68	3.65	.99	62	3.73	.1.03	73	3.82	.89
Essay type questions	68	3.50	1.00	62	3.24	1.12	73	3.44	1.03
Oral questions	68	4.65	.64	62	4.55	.80	73	4.42	.97
Homework	68	4.43	.78	62	4.15	.77	73	4.27	.77
Class exercises	68	4.75	.47	62	4.76	.47	73	4.66	.63
Performance assessments	68	3.07	1.11	62	2.95	1.22	73	3.08	1.05
Authentic assessments	68	2.72	1.09	62	2.53	.99	73	2.73	.89
Oral presentations	68	3.46	1.22	62	3.35	1.07	73	3.59	1.08
Individual Project work	68	2.72	1.14	62	2.56	1.02	73	3.12	1.03
Group Project work	68	2.82	1.11	62	2.60	1.05	73	3.08	1.06
Portfolio Assessment	68	2.32	1.29	62	2.21	1.16	73	2.68	1.18

Source: Field Data, (2020).

The data showed that those with low (less than 5 years) teaching experience had the highest mean values for class tests, essay type questions, oral questions and homework. Those with mid (5 – 10 years) teaching experience had the highest mean value for class exercises while those with high (over 10 years) teaching experiences had the highest mean score in performance assessments, authentic assessments, oral presentations, individual project work, group project work, portfolio assessment and

objective assessment. Standard deviation for each assessment practice revealed that, the most widely spread of responses was related to portfolio among the low teaching experience group. In contrast, the least variability of responses was related to the class exercises among those with low and mid teaching experience.

One-way ANOVA was used to test for the differences between the years of teaching experience groups for the categories of assessment practices and the results shown in Table 37. The result showed a significant difference in assessment practice by teaching experience. In particular, a significant difference was realized in both individual projects and group project work. A Scheffe post hoc analysis (see Table 38) showed a significant mean difference for both individual project work and group project work between teachers with mid (5 - 10 years) teaching experience and high (over 10 years) teaching experience. Teachers with high (over 10 years) teaching experience scores in both individual and group project works were significantly higher than those with mid (5 - 10 years) teaching by a difference of 0.56 and 0.49, respectively.

Table 37: ANOVA of Assessment Practices for Years of Teaching Experience

Practice		df	F	Sig.
	Between Groups	2	.23	.80
Class Test	Within Groups	200		
	Total	**202**		
	Between Groups	2	.58	.56
Objective assessments	Within Groups	200		
	Total	**202**		
	Between Groups	2	1.01	.37
Essay type questions	Within Groups	200		
	Total	**202**		
	Between Groups	2	1.30	.27
Oral questions	Within Groups	200		
	Total	**202**		
	Between Groups	2	2.17	.12
Homework	Within Groups	200		
	Total	**202**		
	Between Groups	2	.77	.46
Class exercises	Within Groups	200		
	Total	**202**		
	Between Groups	2	.27	.76
Performance assessments	Within Groups	200		
	Total	**202**		
	Between Groups	2	.81	.45
Authentic assessments	Within Groups	200		
	Total	**202**		
	Between Groups	2	.74	.48
Oral presentations	Within Groups	200		
	Total	**202**		
	Between Groups	2	5.09	.01*
Individual Project work	Within Groups	200		
	Total	**202**		
	Between Groups	2	3.46	.03*
Group Project work	Within Groups	200		
	Total	**202**		
	Between Groups	2	2.90	.06
Portfolios Assessment	Within Groups	200		
	Total	**202**		

Source: Field Data, (2020).

*P < .05

Table 38: Scheffe Post Hoc for-Assessment Practice (Individual Group work, Group Project Work) and Years of Teaching Experience

Dependent Variable	(I) Teaching Experience	(J) Teaching Experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Individual Project work	< 5 years	5 - 10 years	.156	.186	.704	-.30	.62
		> 10 years	-.403	.179	.081	-.84	.04
	5 - 10 years	< 5 years	-.156	.186	.704	-.62	.30
		> 10 years	-.559*	.183	.011	-1.01	-.11
	> 10 years	< 5 years	.403	.179	.081	-.04	.84
		5 - 10 years	.559*	.183	.011	.11	1.01
Group Project work	< 5 years	5 - 10 years	.227	.188	.486	-.24	.69
		> 10 years	-.259	.181	.361	-.70	.19
	5 - 10 years	< 5 years	-.227	.188	.486	-.69	.24
		> 10 years	-.485*	.185	.034	-.94	-.03
	> 10 years	< 5 years	.259	.181	.361	-.19	.70
		5 - 10 years	.485*	.185	.034	.03	.94

Source: Field Data, (2020).

*. The mean difference is significant at the 0.05 level.

4.5.12 Assessment practices and training in assessment

Training in assessment was categorized into two levels as training during undergraduate studies only (pre-service training) and training during and after undergraduates (pre-service and in-service). Table 39 summarizes the mean scores for each category of training in assessment by the assessment practices. The data revealed that teachers with training in assessment during pre-service only had the highest mean values for class tests, essay type questions, oral questions, homework, class exercises, performance assessments, and those with assessment training in both pre-service and in-service recorded the highest mean scores for objective assessment, oral presentations, individual project work, group project work, portfolio assessment. Standard deviations for each subgroup indicated that the most variability in responses was associated with portfolio assessment among those with pre-service and in-service training, and the least spread group in responses was associated with class exercise among the pre-service group.

An independent t-test was performed to find out whether differences existed in the mean scores of assessment practices by training in assessment. As indicated in Table 39, the t-test revealed a significant difference between teachers with training in assessment during pre-service only and teachers with training in assessment during and after pre-service in the use of homework assessments, group project work and portfolio assessment. The t-test revealed a statistically significant difference between teachers with only pre-service training in assessment and those with training in assessment during and after pre-service in their usage of homework assessment practices (t (201) = 2.17, p< .05). Teachers with only pre-service training in assessment (M = 4.40, SD = .76) had significantly higher values in the usage of homework than teachers with assessment training during and after pre-service (M = 4.17, SD= .78).

Table 39: T- test analysis of Assessment Practice Means by Training in Assessment

Variable	During pre-service			During and after pre-service			Independent t-test		
	n	M	SD	n	M	SD	t	df	sig
Class test	102	3.67	.74	101	3.55	.79	1.05	201	.30
Objective assessment	102	3.64	.98	101	3.83	.94	-1.44	201	.15
Essay type questions	102	3.45	1.01	101	3.35	1.14	.69	201	.49
Oral questions	102	4.59	.78	101	4.49	.87	.89	201	.37
Homework	102	4.40	.76	101	4.17	.78	2.17	201	.03*
Class exercises	102	4.76	.49	101	4.67	.57	1.23	196.36	.22
Performance assessments	102	3.06	1.14	101	3.02	1.10	.25	201	.81
Authentic assessments	102	2.67	1.01	101	2.66	.97	.024	201	.98
Oral presentations	102	3.34	1.13	101	3.60	1.11	-1.66	201	.10
Individual Project work	102	2.68	1.11	101	2.96	1.04	-1.88	201	.06
Group Project work	102	2.69	1.07	101	3.01	1.08	-2.14	201	.03*
Portfolio Assessment	102	2.23	1.17	101	2.61	1.25	-2.29	201	.02*

Source: Field Data, (2020).

* p < .05

Also, the t-test results revealed a statistically significant difference between teachers with only pre-service training in assessment and teachers with assessment training during and after pre-service in their project work done in groups ($t(201) = -2.14$, $p < .05$). Teachers with only pre-service training in assessment ($M = 2.69$, $SD = 1.07$) had significantly lower levels of project work done in groups than teachers with assessment training during and after pre-service ($M = 3.01$, $SD = .1.108$). Again, the t-test revealed a statistically significant difference between teachers with only pre-service training in assessment and teachers with assessment training during and after pre-service in their use of portfolio assessments ($t(201) = -2.29$, $p < .05$). Teachers with only pre-service training in assessment ($M = 2.23$, $SD = 1.17$) had significantly lower values in their use of portfolio assessments than teachers with assessment training during and after pre-service ($M = 2.63$, $SD = 1.25$).

4.6 Basic School Teachers Assessment conceptions and their Classroom Practices

The research question ***"To what extent do basic school teachers' assessment conceptions relate to their assessment practices?"*** sought to establish if there existed any significant relationship between Basic school teachers' conceptions of classroom assessment and their assessment practices. In this regard, a bivariate correlational analysis using Pearson product-moment correlation was conducted on the data set (Conceptions and Practices of assessment). The results are presented in the correlational matrix in Table 40. Results from Table 40 revealed that a weak positive correlation but statistically significant relationships were detected between school accountability assessment conception and the following assessment practices: homework ($r = .15$, $n = 203$, $p < 0.05$), authentic assessments ($r = .20$, $n = 203$, $p < 0.01$) and oral presentations ($r = .22$, $n = 203$, $p < 0.01$). The coefficient of

determination (R^2) for homework, authentic assessments and oral presentation are 0.02, 0.04 and 0.05, respectively. It, therefore, suggests that teachers' school accountability conception of assessment helps to explain about 2%, 4% and 5% of the variance in teachers' assessment practices of homework, authentic assessment and oral presentations, respectively. The coefficient of determination (R^2), according to Field (2009), is a measure of the amount of variability in one variable that is shared by the other. Field suggests that the R^2 value can be converted or expressed in percentage form by multiplying the coefficient of determination by 100. He, however, cautioned that direct conclusions about causality from a correlation based on the coefficient of determination (R^2) value could not be made.

Table 40: Assessment Conceptions and Practices Correlation Matrix

		Conceptions				Practices										
Item		**1**	**2**	**3**	**4**	**I**	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VII**	**IX**	**X**	**XI**	**XII**
SHAC	**1**	1														
STAC	**2**	.54**	1													
IMP	**3**	.55**	.50**	1												
IRR	**4**	-.08	-.12	-.10	1											
CT	**I**	-.05	-.06	-.09	.17*	1										
OA	**II**	.04	.08	.07	-.02	.16*	1									
EQ	**III**	-.01	-.09	-.06	.04	.07	.07	1								
OQ	**IV**	.11	.18*	.08	-.11	-.08	-.04	-.09	1							
HW	**V**	.15*	.11	.16*	.01	.09	.13	.04	.23**	1						
CE	**VI**	.11	.08	.19**	-.05	-.04	.16*	-.04	.26**	.39**	1					
PA	**VII**	.04	.07	.07	.04	.02	.15*	.05	.24**	.18**	.06	1				
AA	**VIII**	.20**	.05	.22**	-.06	-.06	.11	.10	.01	.12	-.02	.41**	1			
OP	**IX**	.22**	.12	.29**	-.08	-.13	.03	.12	.17*	.27**	.15*	.33**	.40**	1		
IP	**X**	.06	.10	.20**	-.08	.07	.14*	.01	-.04	.07	-.03	.24**	.26**	.31**	1	
GP	**XI**	.12	.19**	.19**	-.04	-.06	.20**	.04	-.01	.11	-.02	.20**	.26**	.30**	.69**	1
PFA	**XII**	-.08	-.09	-.06	.02	.08	.11	-.12	-.07	-.07	-.09	.12	.26**	.06	.40**	.33**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Source: Field Data, (2020).

NB: SHAC= School Accountability, STAC = Student Accountability, IMP = Improvement, IRR = Irrelevance, CT = Class Test, OA = Objective Assessments, EQ= Essay questions, OQ = Oral Questions, HW = Homework, CE = Class Exercises, PA = Performance Assessments, AA = Authentic Assessments, OP = Oral Presentations, IP = Individual Projects, GP = Group Projects, PFA = Portfolio Assessments

Also, there was a weak positive correlation between teachers‟ student accountability conception and oral questions (r = .18, n = 203, p < 0.05) and group project work (r = .19, n = 203, p < 0.01) practices of assessment. The magnitude of the relationship between the means of student accountability conception and oral questions was small (R^2 = 0.03) and between student accountability and group projects was also small (.R^2 = 0.04) Thus, when the coefficient of determination is expressed as a percentage, it shows that 3% of the variance in teachers' use of oral question assessment practices of classroom assessment and 4% of the variance in teachers' use of group projects assessment practices of classroom assessment were explained by their conception of student accountability of classroom assessment.

Additionally, results in Table 40 show that there was a weak but statistically significant positive relationship between teachers‟ improvement conception of classroom assessment and the following assessment practices: homework (r = .16, n = 203, p < 0.05), class exercises (r = .19, n = 203, p < 0.01), authentic assessments (r = .22, n = 203, p < 0.01), oral presentations (r = .29, n = 203, p < 0.01), projects by individuals (r = .20, n = 203, p < 0.01) and group projects (r = .19, n = 203, p < 0.01). The R^2 (coefficient determinant) for homework is 0.03, for class exercises is 0.04, for authentic assessments is 0.05, for oral presentations is 0.08, for projects by individuals is 0.04 and for group projects is 0.04.

Finally, there was a weak but statistically significant positive relationship between teachers' irrelevance conception of classroom assessment and class test/quizzes practices: (r = .17, n = 203, p < 0.05). The R^2 (coefficient determinant) for class test is 0.03, which implies that 3% of the variance in teachers' use of class test/ quizzes practices of classroom assessment is explained by their irrelevance conception of classroom assessment.

4.7 Interview Data Results

This section of this study aimed at obtaining qualitative data using a semi-structured interview that could explain in greater depth the issues that were emerging from the quantitative phase (teachers' conceptions and practices of assessment) of this research. The interview was conducted on 12 lower primary, upper primary and Junior High School teachers. These interviewees were selected from the 203 teachers who responded to the questionnaire instrument. Although the number of participants in this qualitative phase was small (n = 12), Cohen, Manion and Morrison (2018) opine that this is not unusual in qualitative studies. The themes around which the qualitative data (interview) was collected were:

1. Basic school teachers' conceptions of classroom assessment.
2. Basic school teachers' methods of assessment.
3. Teachers' conceptions and practices of classroom assessment by demographic characteristics.
4. Relationship of assessment conception with practices.

Nested sampling (sample sampling) was used to select teachers for the qualitative segment of the study. The criterion used was to identify all teachers who showed the strongest agreement on the questionnaire items as per Brown (2006) predetermined classroom assessment conceptions. As such, the participants in this phase were purposively selected to reflect various demographics of respondents in the quantitative phase as well as assessment conception categories. Table 41 shows the purposive sample which includes five teachers in the accountability domain, four in the improvement domain and three in the irrelevance domain of various demographic elements.

Table 41: Demographic Information of Interview Participants

Cluster	Participant	Gender	Level assigned	Age Group	Teaching experience	Educational level	Assessment training
Accountability	Atika (LPT 1)	F	LP	Over 40	Over 10 years	Bachelor	Pre- and in-service
	Samad (UPT 1)	M	UP	21 – 30	< 5 years	Diploma	Pre-service only
	Najo (JHT 1)	M	JHS	31 – 40	5 – 10 years	Bachelor	Pre-service only
	Salma (JHT 2)	F	JHS	21 – 30	< 5 years	Diploma	Pre-service only
	Diana (LPT 2)	F	LP	31 – 40	5 – 10 years	Diploma	Pre- and in-service
Improvement	Rose (LPT 3)	F	LP	Over 40	Over 10 years	Masters	Pre- and in-service
	Fauzia (JHS 3)	F	JHS	31- 40	5 - 10 years	Bachelor	Pre-service only
	Moses (UPT 2)	M	UP	Over 40	Over 10 years	Bachelor	Pre- and in-service
	Issak (JHT 4)	M	JHS	21 – 30	< years	Diploma	pre-service only
Irrelevance	Halitie (LPT 3)	M	LP	21 - 30	< 5 years	Diploma	Pre- and in-service
	Dimbie (UPT 3)	M	UP	31 - 40	Over 10 years	Bachelor	Pre- and in-service
	Kojo (JHT 5)	F	JHS	31 - 40	< 5 years	Diploma	Pre-service only

Source: Field Data, (2020).

LP = Lower Primary, UP= Upper Primary, JHS = Junior High School.

Out of the twelve teachers selected, four were teaching at the lower primary, three at the upper primary and five at the Junior High School. In terms of gender, six were females and six males. Five of the participants had teaching experiences for less than five years, and three had between 5 – 10 years, and four had over ten years' experience. Six of them had obtained a diploma, five a bachelor's degree, and one a master's degree. In terms of assessment training, four of the participants had assessment training during their pre-service and seven had assessment training during both pre-service and in-service.

In order to hide the identities of the interviewees, each of them has been given a false name. Besides, the abbreviation LPT, followed by a number in the write-up, gives the identity of participant teaching at lower primary, while UPT followed by a number in the write up also identifies the respondent as teaching at upper primary and

finally, JHT followed by a number in the write up is an identity of a Junior High School teacher respondent. For example, LPT 1 means first lower primary school teacher interviewee, UPT 2 means, second upper primary teacher interviewee and JHT 3 means, third Junior High School teacher interviewee.

4.7.1 Basic school teachers' conceptions of classroom assessment

As a follow up on basic teachers' conception of classroom assessment, twelve (12) basic school teachers were interviewed on the following questions:

Question: In your view, what is the purpose of classroom assessment?

This question was intended to obtain respondents' views about the purpose of classroom assessment. It was evident from the responses that the majority (six) of the interviewees conceived classroom assessment as an instrument that serves formative purposes for improving teaching and learning.

It was evident from the responses that the main themes emanating from the interviews were classroom assessment as a mechanism to hold pupils accountable for learning, ensuring school quality and compliance and improving teaching and learning. Specifically, three out of five teachers who held accountability assessment conception at the survey stage, their responses during the interview shows that they believed that assessment ensures that pupils are made to account for their learning and also depicts the quality of teachers and schools. The following excerpts are some typical responses:

> *For me, I view the purpose of assessment is to ensure that students are kept on their toes to learn. You see, students are such that if you teach them without assessing them, they will not learn* (Najo, JHST 1, Interviewed data, 2020).

> *Errrrr, the purpose of assessment is to find out whether the students have been able to accomplish the standard set out for them* (Salma, JHT 2, Interviewed data, 2020).

> *The purpose of assessment is to find out how best teaching is taking place in the school* (Samad, UPT 1, Interviewed data, 2020).

However, the remaining two, who are both female teachers and teaching at the lower primary, held a mixed conception of improvement and accountability. The following are the excerpts of their responses:

> *I see the main purpose of assessment as a means use to verify the effectiveness of our teaching methods and also to provide information to parents of the performance of their children* (Atika, LPT 1, Interviewed data, 2020).

> *Assessment enables teachers to know how much their students have understood their lessons and also use to categorize students into their* abilities (Diana, LPT 2, Interviewed data, 2020).

Also, regarding the improvement conception, those who were identified to belong to this domain, believed that assessment was an integral part of teaching and learning. This cluster of teachers was of the view that assessment is a mechanism to establish how much students have learned from the lesson, establish what they have learned from their teaching-learning experiences, identify the students' strengths and weaknesses. It is also a way to find out how effective one's teaching is. The following excerpts are some typical responses:

> *Ok, emmm, to me, the purpose of assessment is to know how well the pupils understood the lesson delivered and the accuracy of the teacher's methodology applied in delivering the lesson* (Rose, LPT 1, Interviewed data, 2020).

> *Well, the purpose of assessment to me, errrrr is to improve students learning, and teachers' teaching as both the students and teachers are involved in the process of assessment* (Moses UPT 2, Interviewed data, 2020).

> *Personally, assessment enables teachers to diagnose our students learning needs so that we can plan and teach to suit such needs* (Fauzia, JHT 3, Interviewed data, 2020).

Surprisingly, none of the three irrelevance cluster participants did express any view to show that assessment is irrelevant. Rather two of them conceived assessment as making students accountable and the remaining one as supporting teaching and learning. The following excerpts are their responses.

> *To me, the purpose of assessment is to provide evidence of the extent to which students are learning* (Kojok, JHT 5, Interviewed data, 2020).
>
> *To me, assessment confirms that a learner has gained knowledge and can prove his or her competencies and skills* (Dimbie, UPT 3, Interviewed data, 2020).
>
> *The purpose of assessment to me is to inform students of their progress and also teachers about how hard they need to work for their students to progress* (Halitie, LPT 3, Interviewed data, 2020).

The results revealed that out of 12 respondents selected from the three conceptions clusters, six of them view the purpose of assessment for improvement of teaching and learning, four as for accountability purposes, and the remaining two held a mixed conception of improvement and accountability. These results confirm the quantitative results, as it has been demonstrated that the teachers hold a mixed conception of assessment. However, whereas in the quantitative results, accountability purposes of assessment held the highest priority, in the qualitative results, the majority of the participants held an improvement conception of assessment. This is not surprising because, in the quantitative results, the standard deviation in the improvement conception is the least among the four domains, which means that teachers' conception in this domain is much homogeneous among the respondents. This means that the teachers in this sample agreed with the improvement and accountability conceptions. Again, the high rating of the student and school accountability conceptions could also be due to the number of items used to measure them in the survey. For instance, whereas three (3) items each were used to measure

the student, and school accountability conceptions, twelve (12) were used to measure the improvement conception.

4.7.2 Basic school teachers' methods of assessment

The teachers were interviewed on their practices of classroom assessment on the following questions:

Question: What kinds of assessment techniques/methods do you use to assess your students' learning? How frequently do you use each of these assessment techniques/methods?

These questions were intended to obtain respondents' views about the techniques/methods they use to assess their students and the frequency they use them. The respondents mostly gave answers that were within the traditional methods of assessment range, as expressed below:

> *I usually use class exercises, homework and class test, which is mainly an objective test* (Samad, UPT 1, Interview data).

> *Mmmm, ok, the method I use mostly is 'portmanteau questions,' I mean objective questions in the form of class exercises and also oral questions. You know, it is very easy to mark such questions* (Fauzia JHT 3, Interview data).

> *For every lesson, I give my pupils a simple test to assess their understanding. ...my pupils are very young, so I just use TRUE or FALSE questions or just two answers, that is one correct answer and one wrong answer* (Diana, LPT 2, Interview data, 2020).

> *I use observation, interviews and sometimes test. The test is done four times in a term* (Rose, LPT 3, Interview data)

> *I mostly use oral questions, objective tests and essay questions* (Kojo, Interview data, 2020).

> *I do use oral questions in class and homework for after classes. The homework is usually in the form of an essay so that the students learn more* (Issak, JHT 4, Interview data, 2020).

> *There are many assessment methods I use to assess my learners, including essays, projects and portfolios* (Moses, UPT 2, Interview data).

From the above results, only a few number of teachers do employ alternative assessments like observations, interviews, projects and portfolios. The preference for mostly traditional assessment techniques was mainly due to their ease of usage.

4.7.3 Teachers' demographic characteristics and classroom assessment conceptions and practices

The extent to which teacher variables shape teachers' assessment conceptions and practices were examined. However, only results that yielded significant differences during the quantitative phase will be looked at in greater depth in this section.

In terms of gender, out of the six female participants interviewed, 3 (50%) held an improvement conception compared with only two (33%) out of six male participants. Also, whereas 4 (67%) of males held accountability conceptions, only one (17%) of females held this belief. Moreover, 2 (33%) of females held a mixed conception of improvement and accountability. When asked the role of assessment regarding their students' learning and their teaching, the interview indicated that females had feelings that assessment plays the role of supporting their students to learn. Excerpts of some the females' responses are produced below:

> *I see the role of assessment of my students' learning is that it motivates them to learn……In my teaching assessment enables me to gain insight into what my learners understand to plan instruction* (Atika, LPT 1, Interview data, 2020).

> *Assessment encourages them to learn better, especially when it is continuous…..It helps me identify the weak students and therefore help them to catch up with their colleagues* (Rose, LPT 3, Interview data, 2020).

Excerpts of some male responses are produced below:

> *The role of assessment in my students' learning is that it helps them to know their achievement at a certain point in time for them to celebrate their successes and progress. … in my teaching I use assessment to*

> *help me check the extent to which my students have understood the demands of the lesson* (Moses, UPT 2, Interview data).
>
> *Assessment helps my students to study hard to achieve their aims……For me, as a JHS Science teacher, I see the role of assessment in my teaching as something very important to me. For instance, when the BECE results are out and my students obtained good grades, or none of them failed in my subject, it makes me happy and raises my image amongst the students and my colleague teachers* (Najo, JHT 1, Interview data).

The excerpts imply that their gender may have been shaped their conceptions. The above seems to support the quantitative data that females possessed to a greater extent, an improvement conception of assessment than their male counterparts.

Also, with regards with irrelevance conception and gender, when the question was asked "in your view do you think assessment results provide an accurate measure of students' performance?", all the teachers except Moses (not his real name), a male teacher with over ten years teaching experience who opined that assessment results are not always accurate.

His response is shown below:

> *No, because it is based on the assessment conditions like timing, testing environment, monitoring and supervision. For example, a test where students were allowed to copy will produce results that do not reflect the actual performance of the pupils* (Moses, UPT 2, Interview data).

In terms of frequency of usage of assessment methods, the interview results indicated that females employ more often objective assessments than essay assessments because objective assessments take less time to score. Comparatively, male respondents use essay assessments more than their female counterparts. Some excerpts are shown below:

> *For every lesson, I give my pupils a simple test to assess their understanding. …my pupils are very young, so I just use TRUE or FALSE questions or just two answers; that is one correct answer and one wrong answer* (Diana, LPT 2, Interview data, 2020).

> *Mmmm, ok, the method I mostly use is 'portmanteau questions'; I mean objective questions in the form of class exercises and also oral questions. You know, it is very easy to mark such questions* (Fauzia JHT 3, Interview data).

> *I do use oral questions in class and homework for after classes. The homework is usually in the form of an essay so that the students learn more* (Issak, JHT 4, Interview data, 2020).

Further, teaching experience and in-service classroom assessment training featured as some of the factors that influence teachers' assessment practices. Teachers who had earned an in-service assessment training and had over ten years of teaching experience reported that using alternative assessment methods such as projects and portfolio assessment. An example of a response to this view from Moses, a teacher with over ten years' experience was as follows:

> *There are many assessment methods I use to assess my learners, including essays, projects and portfolios. ..... From my experience in teaching and workshops I have attended, these methods can make students acquire deep learning and skills which some methods of assessment do not provide* (Moses, UPT 2, Interview data).

In a similar vein, teachers who had not received classroom assessment training after graduating seemed to employ homework, a traditional assessment method to enable their students to acquire deep learning of materials taught in class. A typical remark was from Issak, a diploma teacher with less than five years' experience and with no training in assessment after graduation, who said: "*I do use oral questions in class and homework for after classes. The homework is usually in the form of an essay so that the students learn more"* (Issak, JHT 4, Interview data, 2020).

4.7.4 Relationship of conception and practices of assessment

The teachers were interviewed on the following questions to establish the relationship between teachers' assessment conceptions and their practices.

Question: Which part in your classroom instruction do you implement those methods (based on answers in no. 5)? What is/are your intention/s in conducting that particular assessment method/s?

The responses from the interviews indicated that teachers utilized various assessment methods purposely to improve their students' learning and their teaching. Their responses revealed that they make use of a multiplicity of assessment methods purposely to improve their students learning and their teaching. The excerpts of their responses are below:

> *When I am teaching learners through the main activities in the lesson, I use oral test to find out how best the pupils are following the lesson* (Atika, LPT 1, Interview data, 2020).
>
> *For me, before, during and after the lesson, and I do that to know whether or not my students understand the topic* (Dimbie, UPT 3, Interview data, 2020).
>
> *I use observation during lesson delivery to check the behaviour of students in the class. I also interview to know students' problems for poor performance. As for tests, I do that every four weeks to know how best the pupils have learned what has been taught them* (Rose, LPT 3, Interview data, 2020).
>
> *I mostly use oral questions right from the beginning to the end of the lesson. The intention of using oral questions is to monitor the progress or otherwise of lessons throughout the lesson* (Halitie, JHT 5, Interview data, 2020).

Furthermore, the teachers employed assessment methods for compliance and accountability purposes. Typical responses in this regard are as follows:

> *I mostly give class exercises at the end of the lesson. I do these for two reasons; first, to find out if my lesson objectives have been achieved and second, also to show evidence that I have been teaching and assessing my students because our current circuit supervisor inspects the number of exercises you have given to your students* (Diana, LPT 2, Interview data, 2020).
>
> *For me, I give homework for parents to know that their wards are learning. I am a parent myself; I always expect my children teachers to give them homework* (Issak, JHT 4, Interview data, 2020).

From the above results, teachers use a variety of assessment methods to help their students improve their learning and also help them improve their teaching. They also do use some specific methods to prove to authorities and other stakeholders that they are performing their duties as expected.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.0 Introduction

This chapter discusses the findings or results of the study. It discusses the basic school teachers‟ conceptions and practices of assessments involving the methods and tools they use in assessing learners. It also discusses teacher variables and their influence on their assessment conceptions and practices. Finally, it discusses the relationship between the teachers‟ assessment conceptions and practice.

5.1 Discussion of Basic School Teachers Conceptions of Assessment

The question ***"What are the basic school teachers' conceptions of classroom assessment in the Sissala East Municipality?"*** sought to unearth participants' purposes of conducting classroom assessment. Consideration was given to four levels of conception; Improvement, School accountability, Student accountability and Irrelevance. The respondents expressed positive responses in favour of the belief that classroom assessment improves teaching and learning, enhances school accountability and makes students accountable. The descriptive statistics in the quantitative results indicated that student accountability conception of assessment held the highest mean value among all the four categories of assessment conceptions (M = 4.99, SD = .87). This was followed by school accountability (M = 4.84, SD = .83), improvement (M = 4.74, SD = .58) and irrelevance (M = 2.85, SD = .72). This means that the respondents mostly agreed with the student accountability, school accountability and improvement conceptions of assessment. The findings from the qualitative results revealed that the teachers in Sissala East Municipality conceived assessment as a mechanism for improving teaching and learning and as a tool for holding students accountable for learning and ensuring teacher and school effectiveness, but did not find it irrelevant.

Invariably, these results are saying that these teachers hold a mixed conception of improvement and accountability. Thus, teachers who conceive assessment as improvement are likely to also think that assessment is linked with student and school accountability. According to Brown (2004), improvement and accountability conceptions are mostly interwoven as each teacher held a certain percentage of the two conceptions disproportionately. The study finding of mixed conception of assessment is similar to previous studies by Azis (2014) where teachers held a mixed conception but with improvement conception being primary and accountability secondary.

However, in this present study, whereas in the quantitative results, accountability purposes of assessment held the highest priority, in the qualitative results, the majority of the participants held an improvement conception of assessment. The variations in findings of Azis (2014) in relation to this study, can be due to variations in methods of research applied and, in the teaching, and learning contexts. Moreover, differences in findings may also be due to the use of original teachers‟ conception of assessment questionnaire by Brown which contains 53 items in his study in comparison with the current study use of the abridged version which contains 27 items. Nonetheless, in the quantitative results of this study, the standard deviation in the improvement conception was the least among the four domains, which means that teachers' conception in this domain is much homogeneous among the respondents. This means that the teachers in this sample agreed with the improvement and accountability conceptions

Also, the findings of the quantitative aspect of this research were found to correlate with other studies in the literature. For example, Vardar (2010) examined sixth to eighth-grade Turkish teachers' (n=414) assessment conceptions using the

TCoA-IIIA and revealed that the teachers held students' accountability conceptions as the utmost priority. Vadar (2010) attributed this to the Turkish high-stakes education culture that puts students in a competitive manner in obtaining higher grades examinations. This is also true in the Ghanaian case as the educational system is characterized by high-stakes examination. Also, the student accountability conception view was supported by Yidana and Anti Partey (2018) study on economics teachers' conceptions of assessment where student accountability conception recorded the highest mean value with most Economics teachers using classroom assessment as a mechanism to categorize students. They noted that teachers held this view because the "Economics teachers were once students and subjected to rigorous assessment exercises" (p.168).

Moreover, correlation results revealed that Student Accountability conception was strongly correlated with School Accountability ($r = .55$, $p<.001$) and moderately correlated with Improvement ($r = .49$, $p < .001$) conceptions. Also, school accountability was strongly correlated with Improvement conception ($r = .53$, $p < .001$). These indicated that relationships among student accountability, school accountability and improvement were moderate, and participants agreed that these levels affect each other positively. Thus, the more a teacher conceive assessment as improving teaching and learning, the more the teacher believed that assessment is to make students, teachers and schools accountable.

These findings are in line with Yetkin's (2017) findings, where he found that there were positive and significant correlations between improvement, student and school accountabilities. Similarly, Vardar (2010) also presented that all three conceptions were moderately correlated besides the Irrelevance conception, which held non-significant correlations with other levels. This implies that the teachers

"conceived of assessment as assigning a grade or placing students into categories in order to increase their students' scores in assessments" (Vadar, 2010, p. 69).

Similar findings can be explained by the realities and cultural norms of the competitive Ghanaian education system, in which parents want not only their wards to be accountable but their schools as well. This leads to a view that assessment should boost and make accountable the teaching and learning process. With this, Yates and Johnson (2017) noted that the teachers might somewhat agree with the "notion that school quality can be measured through assessment results, in particular when those assessments are also used to award qualifications" (p.11).

The lower composite means connected with the conception of irrelevance assessment will suggest a relatively neutral endorsement. Means and standard deviations (M = 2.85, SD = .72) for the irrelevance subgroup indicates teachers hold slightly neutral views of this conception as response variation and averages which fall between slightly agree and slightly disagree. However, findings from the qualitative results revealed that teachers did not find assessment as irrelevant. Moreover, the Irrelevance assessment conception was found to be negatively correlated with the Student Accountability conception (r = -.05), School Accountability conception (r =.-.06), and Improvement conception (r -.13). These relationships were not significant. These results also correspond to Vardar's (2010) and Yetkin's (2017) studies, which also indicated that irrelevance conception shared non-significant relationships with other levels of conceptions of assessment.

5.2 Discussion of Methods and Tools Employed in Assessing Learners

Results from both quantitative and qualitative data revealed that Sissala East teachers had limited tools and methods of assessing their students. These teachers mainly used exercises, oral questions, objective questions (e.g., fill in the gap, true or false, multiple-choice, and matching), class tests and oral presentations to assess their students. This presupposes that the kind of assessment tools used by the teachers mainly encourage memorization of facts, principles, procedures and processes. This result is in tandem with findings reported by Sajjad, Nasir, Nasir and Saif (2019). The results in their study indicated that teachers mostly follow traditional assessment practice such as; oral presentations, objective type test, question answering, and homework during the instruction, and disregarding alternative assessment practices such as - group projects, one-minute test, presentation, portfolio, self and, peer assessment practices.

Similarly, Onyefulu (2018) discovered that teachers often used traditional assessment methods such as short answer, multiple-choice, fill-in-the-blanks, and closed-book test. Again, the findings of this study concur with Suah and Ong (2012) that Malaysian in-service teachers often use traditional assessment methods. The finding also corresponds to Titty's (2015) study, where it was found out that most of the respondents often or more often used traditional assessment tools and methods such as exercises, oral questions and tests.

5.3 Discussion of Teacher variables and Conception of Assessment and Practices

Teacher variables such as gender, educational level, age, level of teaching, years of teaching experience and assessment training were examined to determine if they had an influence on the teachers‟ conceptions of classroom assessment and their

assessment practice. As a result, a Multivariate Analysis of Variance test, ANOVA and t-test were applied to examine the differences and the results analyzed and presented.

In terms of gender and its influence on teachers‟ assessment conceptions, the MANOVA test revealed a statistically significant disparity in their conception of assessment between males and females (Wilks' Lambda =.94, p =.042). Only the improvement conception of dependent variables (F (1, 201) = 6.56, p = .011, partial eta squared = .03) was statistically significant when the data were further analyzed for in-depth results using multivariate testing and Bonferroni adjustment. The results were not different from the qualitative findings where almost all the women viewed the purpose of assessment for improving teaching and learning compared with only half of their male counterparts.

The descriptive statistics indicated that females recorded marginally higher levels of Improvement conception (M = 4.84, SD = .55) than males (M = 4.63, SD = .59). The results of this study are close to those of Ndalichako (2015), who found that more female teachers possessed a favourable view of classroom assessment compared to their male counterparts. There was a statistically significant difference between male and female teachers about the use of assessments to promote and sustain teaching. Also, Brown and Gao (2015) found differences in teachers' assessment conceptions with regards to the gender of teachers. Male teachers embraced the notion that assessment should be used to evaluate and monitor pupils, teachers and the school. By contrast, the findings of this study are contrary to those of Benson (2014), Mehrgan, Hayati and Alavi (2017), Yetkin (2017) and Yidana and Anti Partey (2018), who were unable to determine any gender impact on teachers' conceptions of classroom assessment. The variations in findings, in relation to this study, can be due

to variations in methods of research applied and, in the teaching, and learning contexts. Moreover, differences in findings may also be due to the composition of the gender of these studies in comparison with the current study.

To ascertain whether age impacts the respondents' assessment conceptions, they were grouped into three age groups of low (21 to 30 years), mid (31 to 40 years), and high (41 to 60 years) age groups. A MANOVA test to study the difference has not shown any significant difference between the different age groups and assessment conceptions. Such findings are consistent with those of the earlier assessment literature studies. Mehrgan, Hayati and Alavi's (2017) study of the influences of EFL teachers' age on their formative assessment beliefs revealed that age had no statistically significant effect on teachers' perception about formative assessment. Also, Yetkin (2018) found that prospective Turkish English teachers' conceptions significantly did not differ based on age, gender, and teaching experience. Similarly, Yidana and Anti Partey (2018) discovered that Economics teachers' age did not influence their assessment conception.

In the present study, descriptive results indicated that the three age groups' conceptions of assessments are similar even though some slight mean differences were detected. In this study, descriptive findings indicated that the assessment conceptions of the three age groups are identical, although some minor mean differences have been established. All teacher groups indicated that they moderately agreed with conceptions of accountability and improvement and disagreed with the conception of irrelevance, as shown in the study's independent variable values. This means teachers conceive of assessment as a tool for accountability and improvement, whatever their age differences.

Teachers' educational level or attainment was investigated to find the extent it was related to teachers' conception of assessment. Teachers' educational attainment was categorized into two levels: those with a Diploma and those with a Bachelor's degree and above. Before conducting the inferential analysis, descriptive statistics were calculated for all the dependent variables for the two levels of educational attainment. The results suggest that those who have completed their education at a Diploma level believed slightly that assessment measures school accountability and improvement conceptions than those earned a Bachelor's degree and higher. However, these differences were not significant. This study is in contrast to Calveric (2010), who found that those without a Bachelor's degree education assume that assessment measures serve student accountability purposes.

Teachers' grade level of teaching was examined to see whether the grade level of teaching makes a substantial impact on their assessment conceptions. The levels of teaching were grouped into three: Lower Primary, Upper Primary and JHS. The MANOVA test result indicated no statistically significant difference between the teaching levels and conception of assessment. Some research studies have shown that teachers' conceptions about assessment differ according to the levels at which they teach (Brown et al., 2011; Remesal, 2007), however, it remains uncertain whether this variation is as a result of the arrangement and policies related to different levels of education (e.g., primary and secondary), or whether it is related to previous convictions about teaching, learning, and assessment (Bonner, 2016).

A study by Remesal (2007) of primary and secondary teachers in Spain revealed primary school teachers were more oriented to consider assessment is for instructional purposes. In contrast, secondary school teachers often held an 'accounting' conception of assessment in certifying student performance. These

perceived differences have been attributed to policy differences at the primary and secondary school levels (Remesal, 2011). Similar differences were noted among Queensland, Australia, primary and secondary teachers by Brown et al. (2011), in that primary teachers‟ conceptions leaned towards improvement conception while secondary teachers‟ conceptions inclined towards student accountability. The differences may be due to policy disparities between primary and secondary education in which a comprehensive, publicly controlled school-based assessment program existed at that time only at the upper secondary level.

However, in this current study, the data showed a general trend whereby those teaching at lower primary level had the highest mean values for the school accountability, student accountability and improvement conceptions sub-dimensions with the mean scores declining to their lowest level at the JHS level except for student accountability conception. However, the reverse is true for the irrelevance conception, where those at the JHS level had the highest and the lower primary level, the lowest. The similar views held by teachers teaching at these three levels could be due to the fact these teachers were trained generally for the basic school level and so could be assigned to teach at any of these levels in any academic or school year. In effect, it is possible that some of the teachers who were teaching at the JHS level during the time of the study, could have taught at the lower or upper primary levels and vice versa in the previous academic or schooling year.

To assess whether years of teaching experience factor affect assessment conceptions of participants, they were categorized into three teaching experience groups of low (> 5 years), mid (5-10 years) and high (over ten years) teaching experience groups. In this current study, descriptive statistics revealed that teachers with high (over ten years) teaching experience obtained the highest mean value in

improvement conception, those with low (less than five years) teaching experience had the highest score for the school accountability. Those with mid (5 – 10 years) teaching experience had the highest score for student accountability and irrelevance conceptions. A multivariate analysis of variance conducted to analyze the differences found no substantial differences between the groups of teaching experience and assessment conceptions. This study is similar to Fulmer, Tan and Lee's (2017) study of Singaporean secondary school teachers in which no significant relationship was found with teachers' teaching experience and their conception of assessment. Similarly, Yetkin (2018) found a non-statistically significant difference in teachers' conceptions among 204 prospective Turkish English teachers based on teaching experience. Furthermore, Benson (2014) discovered that in terms of teaching experience, younger and older teachers held similar assessment conceptions, especially the irrelevance conception.

In contrast, Sahikarakas (2012) found a significant difference in the assessment conception of Language teachers concerning teaching experience. Teachers with more experience have a negative view of assessment than their less experienced counterparts According to Sahikarakas (2012), the differences are due to the experienced teachers highly valuing themselves to a level that there is no need for them to obtain evidence of their teaching efficacy through assessment. Also, Yidana and Anti Partey (2018) found that Economics teachers' teaching experience does affect their conception of assessment. Teachers with over seven years of teaching experience in Economics have shown a positive conception, relative to those with fewer than three years of experience. Besides, Brown and Gao (2015) found differences in teachers' assessment conception regarding teaching experience. The conception that assessment should be used to evaluate and track students, staff, and

school to ensure successful teaching and learning was supported by teachers with twenty and over years of experience. The study by Vardar (2010) found that teachers have significant differences in assessment conception in relation to years of experience of teaching with the more experienced teacher category having the highest level of student accountability conception compared with other less experienced groups.

The degree to which teachers' training in assessment impacted their assessment conceptions was investigated. The findings of this study revealed that teachers' assessment conceptions did not change with regards to the training in assessment. In this study, training in assessment was categorised into two groups; training during teachers' studies at undergraduate studies only and training in assessment during and after undergraduate studies. However, it appears that teachers with training in assessment during and after undergraduate studies recorded the highest mean scores for all the levels of assessment conceptions. The study findings are similar to studies by Brown and Hirschfeld (2008), Levy-Vered and Alhija (2015) and Vadar (2010), who discovered that having more training in assessment or attending an assessment course did not enhance teachers' assessment conceptions. However, the finding of the study is contrary to that of DeLuca, Chavez and Cao (2013), and Smith et al. (2014). They revealed that teachers' assessment conception improved after getting routine professional assessment training. Similarly, Yidana and Anti Partey (2018) found a positive relationship between Economics assessment conceptions and their professional training in assessment. They attributed this to the Ghana Education Service routine in-service training provided to teachers, as well as the quality and length of such professional training.

Regarding the relationship between assessment practices and teacher variables, statistically significant relationships were established between gender and three assessment practices: class exercises, objective assessments and essay type questions. Females had significantly higher values than Males in their use of objective assessments and class exercises. In contrast, male teachers reported higher levels of use of essay type questions in assessing students than females. These differences in the use of objective assessments and essay assessments between males and females could be due to the limited time needed to score objective assessments as compared to that of essays. Scoring essay items needed time outside normal instructional period, which female teachers may lack due to their home or marital duties outside the school hence their preference of the use of objective assessments such as true/false items, fill in the blank spaces, matching and multiple-choice. In contrast, males may find some extra time outside the school session to engage in scoring essay type questions.

A significant difference was found among age groups and assessment practices. The mean score for group projects was significantly different between mid (31 – 40 years) age and high (over 40 years) age teachers. Teachers with over 40 years of age had significantly higher levels of the use of group projects in assessing students than teachers in a mid-age (31 – 40 years).

Teachers‟ assessment practices were investigated by educational level: diploma and bachelor and above. The data suggested that teachers with a diploma level education tend to employ more of traditional assessment practices and those with a bachelor degree and above educational attainment in alternative techniques; however, an independent t-test conducted revealed there was no significant difference between teachers with diploma educational level and those with a bachelor degree in all the assessment practices. This study is in agreement with Gonzales and Aliponga

(2012), who found that academic qualifications do not influence academic staff"s assessment practices. Gonzales and Aliponga (2012) further revealed that assessment practices of teachers depended principally on the purpose they had set for the class, rather than their educational qualifications. However, the study is not in support of Calveric (2010), who discovered that highly educated teachers reported significantly higher scores for authentic assessments than teachers with bachelor"s degrees.

In terms of the grade level of teaching, statistically significant differences were found between teaching grade level (lower primary, upper primary and JHS) and three assessment practices: objective assessments, essay type questions and class exercises. Teachers at the lower primary grade level had significantly higher scores in the use of objective assessments than those at the JHS level. Also, teachers at the JHS level had significantly higher levels of the use of essay in assessing students than those at the lower primary. Again, teachers teaching at the upper primary level had a significantly higher mean score in their reported usage of class exercises than those teaching at the JHS level. These differences between the groups may be as a result of the maturity levels of the students being taught by them (Trepanier-Street et al., 2001). It can be seen that this present study does not support Zhan and Burry-Stock (2003), who found that the higher the grade levels, the more teachers used objective types of items. Whereas secondary teachers often rely on paper-pencil tests, primary teachers often use performance assessment.

Two significant relationships were found among levels of years of teaching experience and assessment practices. The mean score for the use of individual projects and group projects were significantly different between teachers with mid (5 - 10 years) teaching experience and high (over ten years) teaching experience. Teachers with long (over ten years) teaching experience scores in both individual and group

project works were significantly higher than those with mid (5 - 10 years) teaching. These findings seem to be in line with Bol, Stephenson, O‟Connell and Nunnery (1998), who found that the more experienced teachers more frequently employed alternative assessment than their less experienced counterparts. Also, Koloi-Keaikitse (2012) noted that in Botswana, teacher-related factors such as teaching experience positively contributed to the use of appropriate assessment methods in the classroom.

Training in assessment was categorized into two levels as training during undergraduate studies only (pre-service training) and training during and after undergraduates (pre-service and in-service). A significant test was conducted for this variable and assessment practices. Three significant differences were noted between teachers with training n assessment during pre-service only and teachers with training in assessment during and after pre-service in the use of homework assessments, group project work and portfolio assessment. Teachers with only pre-service training in assessment had significantly higher values in the usage of homework than teachers with assessment training during and after pre-service. Also, teachers with only pre-service training in assessment had significantly lower levels of project work done in groups than teachers with assessment training during and after pre-service. Again, teachers with only pre-service training in assessment had significantly lower values in their use of portfolio assessments than teachers with assessment training during and after pre-service. According to Al-Nouh, Taqi and Abdul-Kareem (2014), teacher professional development programmes play a crucial role in enhancing practising teachers‟ knowledge and skills of assessing learners, especially in this era of a paradigm change from summative to formative assessment practices. Also, Susuwele-Banda (2005) and Matovu and Zubairi (2014) have found that assessment-based training influences teachers‟ assessment practices. Furthermore, Zhang and Burry-

Stock (2003) indicated that teachers‟ ability to put into practice classroom assessment activities depended largely on the degree of their training in conducting student assessments. Therefore, it is imperative that assessment-based training is provided to teachers to equip them with skills and knowledge of assessment practices.

5.4 Discussion of Relationship of Assessment Conceptions and Classroom Practices

In this study, the basic school teachers‟ assessment conceptions subscales and their practices were compared to establish if there exists any significant relationship between them. Findings indicated that the respondents‟ conceptions of classroom assessment affect their classroom assessment practices. Statistically significant relationships were found between the school accountability sub-dimension and the use of homework, authentic assessments, and oral presentations assessments. This means that teachers who endorsed the school accountability conception utilize these assessment practices to measure and account for student‟s achievement. About 2%, 4% and 5% of the variances in homework, authentic assessments, and oral presentations, respectively, are being accounted for with this conception. Accordingly, too many variances are unexplained; therefore, there is a need for future research to establish what explains for other aspects of the variance in this score.

Equally, statistically significant relationships were realized between the student accountability conception and the use of oral questions and group project work assessments. This means that these practices were greatly used by teachers who endorsed this conception to verify student learning or certify their learning. The findings show that 3% of the variance in teachers‟ use of oral question assessment practices of classroom assessment and 4% of the variance in teachers‟ use of group projects assessment practices of classroom assessment were explained by their

conception of student accountability of classroom assessment. This means that a lot of variances are unexplained; therefore, there is a need for future research to establish what explains for other aspects of the variance in this score.

A variety of assessment practices were significantly related to improvement assessment conception. Specifically, statistically significant relationships were realized between the improvement conception and homework, class exercises, authentic assessments, oral questions, projects by individuals, and group project work assessments. This result is not surprising due to the improvement conception yielding the smallest standard deviation (*SD* = .58).

The assessment for learning and improvement belief has explained by Brown (2003) and Black and Wiliam (1998) as requiring extensive use of various formalised and informal assessment methods geared towards accurately measuring students‟ knowledge and skills. It is not, therefore, surprising that the findings of this study show that basic school teachers who endorse this conception use a wide variety of assessment methods to plan for instruction, assess student successes, and adjust their instructional activities to suit the needs of students.

Given that the improvement assessment conception explains about 3% of the variance in homework, 4% of the variance in class exercises, 5% of the variance in authentic assessments, 8% of the variance in oral presentations and 4% of the variance in projects, these are considered as very low and therefore there is the need for future research to establish what explains for other aspects of the variances in this score.

The fourth assessment conception, assessment is irrelevant, represents teachers who view assessment as unconnected to the work of teachers and students (Brown, 2003). According to Brown (2003), teachers who follow this philosophy oppose assessment due to its perceived negative effect on teacher autonomy and student

learning. However, a statistically significant relationship was found between assessment as irrelevant and class tests/quizzes. This result is surprising. What this means is that teachers may use tests in assessing students just for its sake but without any important intent.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

The principal aim of this study was to explore the basic school teachers‟ assessment conceptions and practices in the Sissala East Municipality of the Upper West Region of Ghana. To address this objective, the researcher used a sequential explanatory mixed-method design. The study adopted Clark and Peterson (1986) teachers‟ thought processes model as the conceptual framework. The target population for this study was all professional basic school teachers teaching in the Upper West Region of Ghana. The accessible population, on the other hand, consisted of all 796 professional basic school teachers in the Sissala East Municipality. However, out of a total of 260 teachers selected for the study, 224 teachers completed and returned their questionnaire, from which 203 were used for the study (Lower Primary = 60 Upper Primary = 46 and Junior High School = 97). Brown, 2006). The main instruments used in this study were, Teacher Conceptions of Assessment Abridged Scale (TCoA- IIIA- Version 3- Abridged) and a semi-structured interview guide. Descriptive statistics were carried out to ascertain teachers‟ assessment conceptions and assessment practices. To identify if there were any statistically significant results, assessment conceptions sub-scales and assessment practices were analyzed by demographic variables. Additionally, the four assessment conceptions with assessment practices were correlated to determine if any significant relationships existing between them. Four main research questions guided the study:

1. How do basic school teachers in the Sissala East Municipality conceive of assessment?
2. What assessment methods and tools do basic school teachers use in assessing learners in the Sissala East Municipality?
3. To what extent do basic school teachers‟ assessment conceptions and assessment practices differ based on teacher variables (e.g., level of teaching, teaching experience, training in assessment, gender, and age)?
4. To what extent do basic school teachers‟ assessment conceptions relate to their assessment practices?

A survey was first conducted to examine the classroom assessment conceptions of the respondents‟ and the tools and methods they use in assessing their student. Additionally, differences in teachers‟ assessment conceptions and practices based on teacher demographic variables and the relationship between teachers‟ conceptions and practices of classroom assessment were also explored. The quantitative analytical methods used to interpret the quantitative data included descriptive statistics (frequencies, percentages, means scores and standard deviations), independent-sample t-test, ANOVA, Multivariate Analysis of Variance and Pearson product-moment correlation. The quantitative data provide the grounding for this study. In-depth interviews were used to investigate areas found in the quantitative results. Thematic analysis was used to interpret the qualitative data obtained from the in-depth interviews.

6.1 Summary of Key Findings

6.1.1 Research Question 1: How do basic school teachers in the Sissala East Municipality conceive of assessment?

It was found in this study that the respondents conceived classroom assessment as improving teaching and learning as well as a tool for accountability. The study revealed that:

a. The study participants demonstrated positive assessment conception for ensuring student and school accountability, as well as improving teaching and learning
b. Total mean scores ranged, on a 6-point scale, from 2.85 (irrelevance) to 4.99 (student accountability).
c. A Pearson Correlation analysis of the four conceptions scales revealed moderately significant correlation coefficients for student accountability and school accountability conceptions, student accountability and improvement conceptions and school accountability and improvement conceptions.
d. Irrelevance assessment conception was found to be negatively correlated with the student accountability, school accountability and improvement conceptions. These relationships were not significant.

6.1.2 Research Question 2: What assessment methods and tools do basic school teachers use in assessing learners in the Sissala East Municipality?

The findings in research question 2 indicated that:

a. Majority of the teachers use traditional assessment tools and methods such as class exercises, oral questions, homework, and objective test in assessing their learners.

b. Most of the teachers did not use alternative assessment tools such as portfolio task, authentic assessment, and so on in assessing their students.

6.1.3 Research Question3: To what extent do basic school teachers‟ assessment conceptions and assessment practices differ based on teacher variables (e.g., level of teaching, teaching experience, training in assessment, gender, and age)?

The MANOVA test, ANOVA test and independent-sample t-test results suggest that:

a. Significant differences existed between improvement conception subscale means and gender. Females had a statistically significant higher mean than males.
b. There were no significant differences found between the conceptions of assessment subscale group means and among teacher variables such as age, class teaching level, educational level, assessment training and years of teaching experience.
c. There were statistically significant differences in assessment practices by demographics characteristics such as gender, age, years of experience, grade teaching level, and training in assessment.
d. Three significant differences among practices and gender were identified: females and objective assessments, females and class exercises and males and essay type questions.
e. A significant difference was found for project work by groups in relation to teachers who are aged over 40 years versus those aged between 30 – 40 years.
f. Three statistically significant differences in assessment practices and class teaching level were identified in objective assessments between lower primary

and junior high teachers; in class exercises between upper primary and junior high teachers, and essay type questions between lower primary and junior high teachers.

g. In relation to years of teaching experience, significant differences were recorded between over ten years of teaching experience and 5 to 10 years‟ experience in individual project work and group project work.

h. Three significant differences among practices and training in assessment were identified: training in assessment during preservice and homework, training in assessment during preservice and in-service and project work by groups as well as portfolio assessments.

6.1.4 Research Question 4: To what extent do basic school teachers‟ assessment conceptions relate to their assessment practices?

The Pearson product-moment correlational analysis revealed that:

a. There was a low positive correlation but statistically significant relationships between school accountability assessment conception and the following assessment practices: homework, oral presentations and authentic assessments. The coefficient of determination (R^2) suggested that teachers school accountability helps to explain about 2%, 4% and 5% of the variance in teachers‟ assessment practices of homework, authentic assessment and oral presentations, respectively.

b. Also, there was a weak positive correlation but statistically significant relationships between student accountability assessment conception and the following assessment practices: oral questions and project work by groups. The coefficient of determination (R^2) suggested that teachers‟ student accountability conception helps to explain about 3% and 4% of the variance in

teachers‟ assessment practices of oral questions and project work by groups, respectively.

c. Additionally, there was a low positive correlation but statistically significant relationships between improvement assessment conception and the following assessment practices: homework, class exercises, authentic assessments, oral presentations, individual project work and project work by groups. The coefficient of determination (R^2) suggested that teachers school accountability helps to explain about 3%, 4%, 5%, 8%, 4%, and 4% of the variance in teachers‟ assessment practices of homework, class exercises, authentic assessment, oral presentations, individual project work and project work by groups, respectively.

d. Finally, there was a weak but statistically significant positive relationship between teachers‟ irrelevance conception of classroom assessment and class test/quizzes. The R^2 (coefficient determinant) for class test/quizzes is 0.03, which implies that 3% of the variance in teachers‟ use of class test/ quizzes was explained by their irrelevance conception of classroom assessment.

6.2 Conclusions

The following conclusions can be drawn from the study. First, the study brought to light that the participants of this study demonstrated positive conceptions of assessment in respect of ensuring student and school accountability as well as improving teaching and learning. Thus, the participants possessed a mixed-conception of improvement and accountability. The relationships among student accountability, school accountability and improvement were moderate, and participants agreed that these levels affect each other positively. Thus, the more a teacher conceive assessment as improving teaching and learning, the more the teacher believed that

assessment is to make students, teachers and schools accountable. The student and school accountabilities role in the basic school teachers‟ conceptions of assessment can be explained by the competitiveness of the Ghanaian educational system where high-level testing plays a key role in the future advancement of students and places schools in ranks ranging between most successful and less successful. The respondents did, however, downplay classroom assessment conception of irrelevance, which is considered as undermining the teachers‟ professional autonomy in certain contexts.

Second, the study also revealed that majority of the respondents used traditional assessment tools such as class exercises, oral questioning, homework and objective test in assessing their learners. These kinds of assessment tools used by the teachers mainly encourage memorization of facts, principles, procedures and processes.

Third, the study revealed that except gender, other teacher demographic characteristics such as educational level, age, teaching experience, class teaching level, and assessment training did not impact on the respondents‟ assessment conceptions. Furthermore, apart from educational level, demographic variables such as gender, age, teaching experience, class teaching level and training in assessment impacted on teachers‟ use of assessment methods and tools. In-service training in assessment techniques had a strong impact on the basic school teachers usage of alternative assessment methods like projects and portfolio assessments. This means that in-service training on assessment should be continued for all basic school teachers.

Finally, the study established that a significant positive but weak relationship existed between teachers‟ assessment improvement, school accountability and student accountability conceptions and their use of certain methods and tools of assessment.

6.3 Recommendations

From the main findings of this study, it is recommended that:

a. The Ministry of Education should coordinate and update textbooks and assessment procedures by taking account of improvement conception as well as school and student accountabilities. Both policymakers and teachers need to note that assessment is acceptable if motivated by a particular reason; whether it is for learning, as learning, or of learning purposes.

b. The Heads of Basic Schools and the Ghana Education Service in the Sissala East Municipality should conduct regular in-service training, workshops and seminars in assessment for teachers in order for them to be up-to-date with contemporary issues about alternative assessments and also develop their skills and use of appropriate classroom assessment practices. Identifying approaches to classroom assessment and specific practices that are considered desirable for different levels of teaching is also essential.

c. Analysis of demographic characteristics showed significant relationships with selected assessment conceptions and practices; stakeholders should consider these in the development of ways to improve the assessment literacy of teachers.

d. In order to have the expertise required to efficiently identify and execute desirable assessments within the classroom, teachers, school leaders and policymakers need to consider the connection between conceptions and practice.

6.4 Limitations of the Study

The following may be listed as limitations for this study. Firstly, the use of participants from the same context and the lack of participants from different settings may be a drawback to the findings being generalizable.

Secondly, the study failed to employ classroom observations of teachers and of use assessment records such as students exercise books, cumulative record cards, report cards, etc,. The used of these data gathering techniques could have further provided insight to the teachers assessment practices and how they contribute to their conceptions.

Finally, research studies point out that many contextual factors influence teachers‟ assessment conceptions and practices. These factors exist at three levels; individual, school and societal levels are known respectively as micro-, meso- and macro-levels (Fulmer, Lee & Tan, 2015; Fulmer, Tan & Lee, 2017). However, the focus of this study is on the micro-level, specifically on teacher variables and their influence on assessment practices.

6.5 Suggestions for Further Research

The implications of this study‟s results warrant further work in the field of classroom assessment. The following are recommended for further research:

1. Similar research is recommended to be carried out in other districts in the Upper West Region and other areas of Ghana. This will provide the basis for a more comprehensive inference to be drawn on the conceptions and practices of classroom assessment of basic school teachers.
2. In addition to the in-service teachers, the conceptions of preservice teachers, students, school heads and other stakeholders should also be examined to

connect the findings to give a more detailed view of the classroom assessment conceptions of users of assessment.

3. Furthermore, contextual factors at the meso- and macro-levels such as school culture, the community and policy should be examined to determine how the influence teachers‟ conceptions and practices of assessment.
4. Finally, if this study is to be replicated, as part of the methodology, the researcher recommends the use of classroom observation and document study of assessment records. Due to time constraint, these processes were not implemented in this study.

REFERENCES

Acar-Erdol, T., & Yıldızlı, H. (2018). Classroom assessment practices of teachers in Turkey. *International Journal of Instruction*, *11*(3), 587-602. https://doi.org/10.12973/iji.2018.11340a

Agyedu, G. O. Donkor, F., & Obeng, S. (2013). *Teach yourself research methods*. Amakom-Kumasi: Payless Publication Limited.

Ajogbeje, O. J. (2013). Effects of formative testing on students‟ achievement in junior secondary school Mathematics. *European Scientific Journal*, *8*(8), 94-105.

Al-Nouh, N., Taqi, H., & Abdul-Kareem, M. (2014). EFL primary school teachers' attitudes, knowledge and skills in alternative assessment. *International Education Studies, 7(*5), 68-84.

Alsarimi, A. M. (2000). Classroom assessment and grading practices in the Sultanate of Oman. Unpublished master‟s dissertation, University of Pittsburgh, Pennsylvania

Amedahe, F. K. (1989). Testing practices in secondary schools in the central region of Ghana. Unpublished master‟s thesis, University of Cape Coast, Cape Coast.

Amedahe, F. K. & Asamoah-Gyimah, E. (2016). *Introduction to measurement and evaluation*. Cape Coast: University of Cape Coast Press.

Amoako, I. (2018). Formative assessment practices among distance education tutors in Ghana. *African Journal of Teacher Education*, *7*(3), 22 -36.

Amoako, I., Asamoah, D. & Bortey, J. (2019). Knowledge of formative assessment practices among senior high school mathematics teachers in Ghana. *American Journal of Humanities and Social Sciences Research (AJHSSR), 3*(3), 8 – 13.

Amua-Sekyi, E. T. (2016). Assessment, student learning and classroom practices: A review. *Journal of Education and Practice*, *7*(21), 1-6.

Anhwere, Y. M. (2009). Assessment practices of teacher training college tutors in Ghana. Unpublished master‟s thesis, University of Cape Coast, Cape Coast.

Asare, K. (2015). Exploring the kindergarten teachers‟ assessment practices in Ghana. *Developing Country Studies*, *5*(8), 2225-0565.

Assessment Reform Group (2002). *Assessment for learning: 10 principles. Research-based principles to guide classroom practice*. Cambridge, UK: Assessment Reform Group.

Awanta, E. K. & Asiedu-Addo, S. K. (2008). *Essential statistical techniques in research for Universities, Colleges and Researchers.* Accra: Salt „N" Light Publishers.

Azis, A. (2014) Indonesian junior secondary school teachers" conceptions of assessment: A mixed methods study (Doctoral Thesis, The University of Wellington, New Zealand). Retrieved from http://researcharchive.vuw.ac.nz/xmlui/handle/10063/320

Azis, A. (2015). Conceptions and practices of assessment: A case of teachers representing improvement conception. *TEFLIN Journal*, *26*(2), 129-154.

Barnes, N., Fives, H., & Dacey, C. M. (2015). Teachers" beliefs about assessment. In H. Fives, & M. G. Gill (Eds.), *The handbook of research on teachers' beliefs* (pp. 229 - 233). New York, NY: Routledge.

Barnes, N., Fives, H., & Dacey, C. M. (2017). U.S. teachers' conceptions of the purposes of assessment. *Teaching and Teacher Education, 65*, 107 – 116.

Bartlett, J. (2015). *Outstanding assessment for learning in the classroom*. New York: Routledge.

Bekoe, S. O., Eshun, I., & Bordoh, A. (2013). Formative assessment techniques tutors use to assess teacher-trainees" learning in Social Studies in Colleges of Education in Ghana. *Research on Humanities and Social Sciences*, *3*(4), 20-30.

Benson, T. L. (2014). Sixth through eighth grade teachers" conceptions (beliefs) about assessment practices. Unpublished D. Ed dissertation presented to the Wingate University School of Graduate and Adult Education, Union Country.

Berry, R. (2008). *Assessment for learning.* Hong Kong: Hong Kong University Press.

Black, P. & Wiliam, D. (1998). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan, 80*(2), 139-144.

Black, P., & Wiliam, D. (2009). Developing the theory of formative assessment. *Educational Assessment, Evaluation and Accountability, 21*(1), 5-31. http://dx.doi.org/10.1007/s11092-008-9068-5.

Black, P., Harrison, C., Lee, C., Marshall, B., & Wiliam, D. (2004). Working inside the black box: Assessment for learning in the classroom. *Phi Delta Kappan, 86*(1), 8–21.

Bol, L., Stephenson, P. L., O"Connell, A. A., & Nunnery, J. A. (1998). Influence of experience, grade level, and subject area on teachers" assessment practices. *The Journal of Educational Research, 91*, 323 –330.

Bonner, S. (2016). Teachers‟ perceptions about assessment: Competing narratives. In G. T. L. Brown & L. Harris (Eds.), *Handbook of social conditions in assessment* (pp. 21–40). New York: Routledge.

Bordoh, A., Bassaw, T. K., & Eshun, I. (2013). Social Studies tutors‟ cognition in formative assessment in colleges of education in Ghana. *Development Country Studies*, *3*(11), 1-11.

Braun, V. & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Brown, G. T. L. (2002). *Teachers' conceptions of assessment*. Dissertation. University of Auckland, NZ. Auckland.

Brown, G., T. L. (2003). *Teachers' instructional conceptions: Assessment's relationship to learning, teaching, curriculum, and teacher efficacy*. Paper presented at the Joint Conference of the Australian and New Zealand Associations for Research in Education, Auckland, New Zealand, 3rd April, 2003.

Brown, G. T. L. (2004). Teachers' conceptions of assessment: Implications for policy and professional development. *Assessment in Education: Policy, Principles and Practice*, *11*(3), 305-322.

Brown, G. T. L. (2006). Teachers‟ conceptions of assessment: Validation of an abridged instrument. *Psychological Reports, 99*, 166-170.

Brown, G. T. L. (2008). *Conceptions of assessment: Understanding what assessment means to teachers and students*. Nova Science Publishers.

Brown, G. T. L. (2009). Teachers‟ self-reported assessment practices and conceptions: Using structural equation modelling to examine measurement and structural models. In T. Teo & M. S. Khine (Eds.), *Structural equation modelling in educational research: Concepts and applications* (pp. 243-266). Rotterdam, NL: Sense Publishers.

Brown, G. T. L. (2011). New Zealand prospective teacher conceptions of assessment and academic performance: Neither student nor practicing teacher. In R. Kahn, J. C. McDermott, & A. Akimjak (Eds.), *Democratic access to education* (pp.119 – 132). Los Angeles, CA: Antioch University Los Angeles, Department of Education.

Brown, G, T. L. (2018). *Assessment of student achievement*. New York: Routledge.

Brown, G. T. L., & Gao, L. (2015). Chinese teachers‟ conceptions of assessment for and of learning: Six competing and complementary purposes. *Cogent Education, 2*(1), 1-19.

Brown, G. T. L., & Harris, L. R. (2009). Unintended consequences of using tests to improve learning: How improvement-oriented resources heighten conceptions of assessment as school accountability. *Journal of Multidisciplinary Evaluation, 6*(12), 68-91.

Brown, G. T. L., & Hirschfeld, G. H. F. (2008). Student‟ conceptions of assessment: Links to outcomes. *Assessment in Education: Principles, Policy and Practice*, *15*(1), 3 – 17.

Brown, G. T. L., & Michaelides, M. P. (2011). Ecological rationality in teachers‟ conceptions of assessment across samples from Cyprus and New Zealand. European *Journal of Psychology of Education, 26*(3), 319-337. doi:10.1007/s10212-010-0052-3

Brown, G. T. L., Chaudhry, H., & Dhamija, R. (2015). The impact of an assessment policy upon teachers‟ self-reported assessment beliefs and practices: A quasi-experimental study of Indian teachers in private schools. *International Journal of Educational Research, 71*, 50-64. doi:http://doi.org.dcu.idm.oclc.org/10.1016/j.ijer.2015.03.001

Brown, G. T. L., Hui, S.K.F., Yu, F. W. M., & Kennedy, K. J. (2011). Teachers‟ conceptions of assessment in Chinese contexts: A tripartite model of accountability, improvement, and irrelevance. *International Journal of Educational Research, 50*, 307-320. doi: 10.1016/j.ijer.2011.10.00.

Brown, G. T. L., Kennedy, K. J., Fok, P. K., Chan, J. K. S., & Yu, W. M. (2009). Assessment for student improvement: Understanding Hong Kong teachers‟ conceptions and practices of assessment. *Assessment in Education: Principles, Policy & Practice, 16*(3), 347-363. DOI: 10.1080/09695940903319737

Brown, G. T. L., Lake, R., & Matters, G. (2009). Assessment policy and practice effects on New Zealand and Queensland teachers' conceptions of teaching. *Journal of Education for Teaching, 35*(1), 61-75. doi: 10.1080/02607470802587152

Brown, G. T. L., Lake, R. & Matters, G. (2011). Queensland teachers‟ conceptions of assessment: The impact of policy priorities on teacher attitudes. *Teaching and Teacher Education, 27*, 210-220. doi: 10.1016/j.tate.2010.08.003

Büyükkarcı, K. (2014). Assessment beliefs and practices of language teachers in primary education. *International Journal of Instruction, 7*(1), 107e120.

Calveric, S. B. (2010). Elementary teachers' assessment beliefs and practices. (Doctoral dissertation, Virginia Commonwealth University, Virginia, USA).

Chen, J., & Brown, G. T. L. (2013). High-stakes examination preparation that controls teaching: Chinese prospective teachers‟ conceptions of excellent teaching and assessment. *Journal of Education for Teaching, 39,* 541–556. doi:10.1080/02607476.2013.836338

Clark, C. M., & Peterson, P. L. (1986). Teachers' thought processes. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 255-296). New York: Macmillan.

Cohen, J. (1988). *Statistical power analysis for the behaviour sciences* (2nd ed.). St. Paul, MN: West Publishing Company.

Cohen, L., Manion, L & Morrison, K. (2018). *Research methods in education* (8th ed.). New York: Routledge.

Creswell, J. W. (2007). *Qualitative Inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks: Sage Publications.

Creswell, J. W. & Creswell, D. J. (2018*). Research design: Qualitative, quantitative and mixed methods approaches* (5th ed.). Thousand Oaks, California: SAGE Publications Inc.

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks: Sage Publications.

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Thousand Oaks: Sage Publications.

Cooper, C. R., & Schindler, P. S. (2008). *Business research methods (10th ed.).* Boston: McGraw-Hill.

Daniels, L. M., Poth, C., Papile, C., & Hutchison, M. (2014). Validating the conceptions of assessment-III scale in Canadian pre-service teachers. *Educational Assessment*, *19*(2), 139-158. doi:10.1080/10627197.2014.903654

Darmody, M. (2017). Irish post-primary teachers‟ conceptions of assessment. Dissertation, Institute of Education, Dublin City University.

Davis, D. S., & Neitzel, C. (2011). A self-regulated learning perspective on middle grades classroom assessment. *Journal of Educational Research*, *104*, 202–215.

Davison, C., & Leung, C. (2009). Current issues in English language teacher-based assessment. *TESOL Quarterly*, *43*(3), 393-415.

Dayal, H. C., & Lingam, G. I. (2015). Fijian teachers‟ conceptions of assessment. *Australian Journal of Teacher Education*, *40* (8), 27 – 46.http://dx.doi.org/10.14221/ajte.2015v40n8.3

DeLuca, C., Chavez, T., & Cao, C. (2013). Establishing a foundation for valid teacher judgement on student learning: The role of pre-service assessment education. *Assessment in Education: Principles, Policy & Practice, 20*(1), 107 – 126.

Earl, L. (2003). *Assessment as learning: Using classroom assessment to maximize student learning*. Thousand Oaks, CA: Corwin Press.

Edwards, F. (2013). Quality assessment by science teachers: Five focus areas. *Science Education International, 24*(2), 212-226.

Elliott, A. C., & Woodward, W. A. (2007). *Statistical analysis quick reference guidebook with SPSS examples* (1st ed.). London: Sage Publications.

Eshun, I., Bordoh, A., Bassaw, T. K. & Mensah, (2014). Evaluation of social studies students‟ learning using formative assessment in selected colleges of education in Ghana. *British Journal of Education, 2*(1), 39-48.

Field, A. P. (2009). *Discovering statistics using SPSS* (3rd ed.). London: Sage

Fives, H., & Buehl, M. (2012). Spring cleaning for the “messy” construct of teachers' beliefs: What are they? Which have been examined? What can they tell us? In K. R. Harris, S. Graham, & T. Urdan (Eds.), *APA educational psychology handbook: Volume 2 individual differences and cultural and contextual factors* (pp. 471-499). Washington: American Psychological Association.

Flórez, M. T. & Sammons, P. (2013). *Assessment for learning: Effects and impact*. Oxford: CfBT Education Trust

Fulmer, G. W., Lee, C. H. I., & Tan, K. H. K. (2015). Multi-level model of contextual factors and teachers‟ assessment practices: An integrative review of research. *Assessment in Education: Principles, Policy & Practice., 22*, 475–494. doi:10.1080/0969594X.2015.1017445

Fulmer, G. W., Tan, K. H. K., & Lee, C. H. I. (2017): Relationships among Singaporean secondary teachers‟ conceptions of assessment and school and policy contextual factors. *Assessment in Education: Principles, Policy & Practice*, 1 – 17. http://dx.doi.org/10.1080/0969594X.2017.1336427

Gebril, A., & Brown, G. T. L. (2014). The effect of high-stakes examination systems on teacher beliefs: Egyptian teachers‟ conceptions of assessment. *Assessment in Education: Principles, Policy & Practice, 21*(1), 16-33. doi:10.1080/0969594X.2013.831030

Gonzales, R. D., & Aliponga, J. (2012). Classroom assessment preferences of Japanese language teachers in the Philippines and English language teachers in Japan. *MEXTESOL Journal, 36*, 1–19. doi:10.2139/ssrn.2746287

Guba, E. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology: A Journal of Theory, Research & Development, 29*(2), 75-91.

Guba, E., & Lincoln, Y. S. (1989). *Fourth generation evaluation*. Newbury Park: Sage Publications.

Harris, L. (2008). *Secondary teachers' conceptions of the purpose of assessment and feedback.* Paper presented to the Australian Association for Research in Education (AARE) Annual Conference, December 2008, Brisbane, Australia.

Harris, L. R., & Brown, G. T. L. (2009). The complexity of teachers‟ conceptions of assessment: Tensions between the needs of schools and students. *Assessment in Education: Principles, Policy, & Practice, 16*(3), 365 – 381.

Heitink, M. C., Van der Kleij, F. M., Veldkamp, B. P., Schildkamp, K., & Kippers, W. B. (2016). A systematic review of prerequisites for implementing assessment for learning in classroom practice. *Educational Research Review, 17*(1), 50-62. doi: 10.1016/j.edurev.2015.12.002.

Izci, K., & Caliskan, G. (2017). Development of prospective teachers‟ conceptions of assessment and choices of assessment task. *International Journal of Research in Education and Science (IJRES), 3*(2), 464 – 474.

James, M., & Pedder, D. (2006). Beyond method: Assessment and learning practices and values. *Curriculum Journal, 17*, 109–138. doi:10.1080/09585170600792 71

Johnson, R. B., & Christensen, L. B, (2017). *Educational research: Quantitative, qualitative, and mixed approaches* (6th ed.). Los Angeles: Sage Publications.

Karp, G. G., & Woods, M. L. (2008). Pre-service teachers‟ perceptions about assessment and its implementation. *Journal of Teaching in Physical Education*, *27*, 327–346.

Kippers, W. B., Wolterinck, C. H. D., Schildkamp, K., Poortman, C. L., & Visscher, A. J. (2018). Teachers' views on the use of assessment for learning and data-based decision making in classroom practice. *Teaching and Teacher Education, 75*, 199-213.

Klenowski, V. (2009). Assessment for learning revisited: an Asia-Pacific perspective. *Assessment in Education: Principles, Policy & Practice, 16*, 263-268. http://dx.doi.org/10.1080/09695940903319646.

Koloi-Keaikitse, S. (2012). Classroom assessment practices: A survey of Botswana primary and secondary school teachers (Unpublished doctoral dissertation, Ball State University, Indiana).

Krejcie, R. V. & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30,* 607-610.

Kusi, H. (2012). *Doing qualitative research: A guide for researchers.* Accra-New Town: Emmpong Press.

Laveault, D.& Allal, L. (2016). Implementing assessment for learning: Theoretical and practical issues. In D. Laveault & L. Allal (eds.), *Assessment for Learning: Meeting the challenge of implementation* (pp. 1 -18). London: Springer

Leavy, P. (2017). *Research design: quantitative, qualitative, mixed methods, arts-based and community-based participatory research approaches*. New York: The Guilford Press.

Levy-Vered, A., & Alhija, F. N. (2015). Modelling beginning teachers‟ assessment literacy: The contribution of training, self-efficacy, and conceptions of assessment. *Educational Research and Evaluation*, *21*(5), 378 – 406.

Lin, T.-J., Lee, M.-H., & Tsai, C. C. (2014). The commonalities and dissonances between high-school students‟ and their science teachers‟ conceptions of science learning and conceptions of science assessment: A Taiwanese sample study. *International Journal of Science Education, 36*, 382–405. doi:10.1080/09500693.2013.780317

Matovu, M., & Zubairi, A. (2014). Factors influencing assessment practices among university academic staff: A multiple regression analysis. *Mevlana International Journal of education, 4*(1), 176-188.

McMillan, J. H. (2018). *Classroom assessment: Principles and practice that enhance student learning and motivation* (7th ed.). New York: Pearson.

McMillan, J. H., & Schumacker, S. (2014). *Research in education evidence-based inquiry* (7th ed.). New Jersey: Pearson.

McMillan, J., & Nash, S. (2000). *Teacher classroom assessment and grading practices decision making.* Paper presented at the Annual Meeting of the National Council on Measurement in Education, New Orleans, LA.

McMillan, J., Myran, S., & Workman, D. (2002). Elementary teachers‟ classroom assessment and grading practices. *The Journal of Educational Research*, *95*(4), 203-213.

McNair, S., Bhargava, A., Adams, L., Edgerton, S., & Kypros, B. (2003). Teachers speak out on assessment practices. *Early Childhood Education Journal*, *31*(1), 23-31.

Mehrgan, K., Hayati, A., & Alavi, S. M. (2017). Investigating the impacts of EFL teachers‟ age, educational background, instructional experience and gender on their beliefs about formative assessment. *International Journal of Foreign Language Teaching & Research, 5*(18), 143 – 160.

Mekonnen, G. T. (2014). EFL classroom assessment: Teachers' practice and teaching techniques adjustment in Ethiopia. *Educational Research and Reviews*, *9*(20), 1071- 1089.

Merriam, S. B. (2001). *Qualitative research and case study application in education*. San Francisco: Jossey-Bass.

Mertens, D. M. (2015). *Research and evaluation in education and psychology. Integrating diversity with qualitative, quantitative, and mixed methods* (4th ed.). Thousand Oaks, California: Sage Publications.

Ministry of Education (2018). *National pre-tertiary education curriculum framework.* Accra: NaCCA

Mitchell, M. L., & Jolley, J. M. (2010). *Research design explained* (7th ed.). Belmont, CA: Wadsworth.

Moiinvaziri, M. (2015). University teachers' conception of assessment: A structural equation modelling approach. *Journal of Language, Linguistics and Literature*, *1*(3), 75-85.

Muijs, D. (2011). *Doing quantitative research in education with SPSS* (2nd ed.). London: Sage Publications.

Nafiu, L. A. (2012). Comparison of one-stage, two-stage, and three-stage estimators using finite population. *The Pacific Journal of Science and Technology*, *13*(2), 166-171.

National Council for Curriculum and Assessment (NaCCA) (2019). *Resource guide for the orientation of primary school teachers towards the implementation of the revised curriculum for primary schools.* Accra: Ministry of Education.

Ndalichako, J. L. (2015). Secondary school teachers‟ perceptions of assessment. *International Journal of Information and Education Technology, 5*(5), 326 – 332.

Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches* (7th ed.). Harlow: Pearson Education Limited.

Nguon, S. (2013). Assessment practices in a Cambodian university: through the lens of lecturers and students. Master‟s thesis. Victoria University of Wellington

Nichols, S. L., & Harris, L. R. (2016). Accountability assessment‟s effects on teachers and schools. In G. T. L. Brown, & L. R. Harris (Eds.), *Handbook of human and social conditions in assessments* (pp. 40 – 56). New York: Routledge

Noori, A., Shafie, N. H., Mashwan, H. U., & Tareen, H. (2017). Afghan EFL Lecturers‟ Assessment Practices in the Classroom. *Imperial Journal of Interdisciplinary Research (IJIR), 3*(10), 130 – 143.

Nortvedt, G. A. & Buchholtz, N. (2018). Assessment in mathematics education: Responding to issues regarding methodology, policy, and equity. *ZDM, 50,* 555 – 570. DOI:10.1007/s11858-018-0963-z

Nsikak-Abasi, U. & Akanaono, A. M. (2017). Impact of classroom assessment, management and control on the academic performance of secondary school students in AkwaIbom State. *Journal of Education and Practice, 8*(18), 30 – 36.

Oduro, O. E. (2015). *Assessment in mathematics classrooms in Ghana: A study of teachers' practices*. [Online] Available at http://sro.sussex.ac.uk (Accessed: 20 May 2019).

Okyere, M. & Larbi, E. (2019). Senior high school mathematics teachers‟ perception and use of assessment in the classroom. *African Journal of Educational Studies in Mathematics and Sciences, 15*(2), 43 – 54.

Okyere, M., Kuranchie, A., Larbi, E., & Twene, C. (2018). *Essentials of assessment in schools*. Sunyani: Aduana Printing Press.

Onyefulu, C. (2018). Assessment practices of teachers in selected primary and secondary schools in Jamaica. *Open Access Library Journal*, *5*(5038), 1 – 24. https://doi.org/10.4236/oalib.1105038

Opre, D. (2015). Teachers‟ conceptions of assessment. *Procedia-Social and Behavioural Sciences, 209*, 229-233.

Othman, J. (2018). Reform in assessment: Teachers‟ beliefs and practices. *The Journal of Teaching English for Specific and Academic Purposes, 6*(3), 501-512.https://doi.org/10.22190/JTESAP1803501O.

Pallant, J. (2016). *SPSS survival manual, a step by step guide to data analysis using IBM SPSS* (6th ed.). Berkshire, England: McGraw Hill

Pishghadam, R., Adamson, B., Shayesteh, S. S., & Kan, F. L. F. (2014). Conceptions of assessment and teacher burnout. *Assessment in Education: Principles, Policy & Practice, 21,* 34–51. doi:10.1080/0969594x.2013.817382

Popham, W. J. (2017). *Classroom assessment: What teachers need to know* (8th ed.). Boston: Pearson.

Price, J. k., Pierson, E., & Light, D. (2011). *Using classroom assessment to promote 21st century learning in emerging market countries.* Paper presented at Global Learn Asia Pacific 2011, Melbourne, Australia.

Remesal, A. (2007). Educational reform and primary and secondary teachers' conceptions of assessment: The Spanish instance, building upon Black and Wiliam (2005). *The Curriculum Journal, 18*(1), 27-38.doi: 10.1080/09585170701292133

Remesal, A. (2011). Primary and secondary teachers' conceptions of assessment: A qualitative study. *Teaching and Teacher Education, 27*, 472-482.

Ruland, C. M., Bakken, S., & Roislien, J. (2007). Reliability and validity issues related to interactive tailored patient assessments: a case study. *Journal of Medical Internet Research, 9*(3), 9.

Sahikarakas, S. (2012). The role of teaching experience on teachers‟ perceptions of Language assessment. *Procedia – Social and Behavioural Science, 47*(2), 1786 – 1792.

Sajjad, H., Nasir, S., Nasir, A. & Saif, U.I. (2019). Teachers‟ classroom assessment practices: Challenges and opportunities to classroom teachers in Pakistan. *The Dialogue*, *XIV*(1), 87 – 97.

Sanga, P. L. (2016). Implications of Teacher Educators‟ Practices in Assessment for Student Learning in Tanzania. *Makerere Journal of Higher Education, 8*(1), 3 – 24. DOI: http://dx.doi.org/10.4314/majohe.v8i1.1

Segers, M., & Tillema, H. (2011). How do Dutch secondary teachers and students conceive the purpose of assessment? *Studies in Educational Evaluation ,37*(1), 49-54.

Sethusha, M. J. (2012). Primary school teachers‟ conceptions of classroom assessment: A qualitative Study. *International Journal for Cross-Disciplinary Subjects in Education (IJCDSE), 3*(2), 699 – 706.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information,* 22(2), 63-75.

Smith, L. F., Hill, M. F., Cowie, B., & Gilmore, A. (2014). Preparing teachers to use the enabling power of assessment. In C. Wyatt-Smith, V. Klenowski, & P. Colbert (Eds.), *Designing assessment for quality learning* (pp. 303–323). Dordrecht, The Netherlands: Springer.

Snyder, R. M. (2017). *Investigating the link between current classroom teachers' conceptions, literacy, and practices of assessment*. Doctoral Dissertation.https://digital.library.temple.edu/digital/api/collection/p245801coll10/id/446445/download.

Sofo, S., Ocansey, R. T., Nabie, M. J. & Asola, E. F. (2013). Assessment practices among secondary physical education teachers in Ghana. *International Online Journal of Educational Sciences*, *5*(2), 274-281.

Suah, S. L., &Ong, S. L. (2012). Investigating assessment practices of in-service teachers. *International Online Journal of Educational Sciences, 4*(1), 91–106.

Superior North Catholic DSB (2017). *Administrative procedure: Growing success: assessment evaluation & reporting of student achievement*. Ontario: SNCBSB

Susuwele-Banda, W. J. (2005). Classroom assessment in Malawi: Teachers‟ perceptions and practices in mathematics (Doctoral dissertation, Virginia Polytechnic Institute, 2005). *Dissertation Abstracts International*, *66*, 12.

Swanson, M. L. H. (2017). An investigation of the assessment practices of elementary general music teachers in Iowa. *Electronic Theses and Dissertations, 432*.

Tabachnick, B. G. & Fidell, S. (2013). *Using multivariate statistics (6 ed).* Boston: Pearson Education, Inc.

Titty, C. A. (2015). Exploring upper primary and junior high school mathematics teachers‟ perceptions and practices of classroom assessment in the Gomoa East district of Ghana. (Master‟s Thesis, University of Education, Winneba).

Thomas, M. (2012). Teachers‟ beliefs about classroom assessment and their selection of classroom assessment strategies. *Journal of Research and Reflections in Education*, *6*(2), 103 -112.

Thompson, A. (1992). Teachers' beliefs and conceptions: A synthesis of the research. In D. A. Grouws (Ed.), *Handbook of research on mathematics teaching and learning* (pp. 127-146). New York: McMillan

Trepanier-Street, M. L., McNair, S., & Donegan, M. M. (2001). The view of teachers on assessment: A comparison of lower and upper elementary teachers. *Journal of Research in Childhood Education, 15*(2), 234-241.

Tulu, G, Tolosa, T. & JF (2018). The nature of classroom assessment in Ethiopian public secondary schools: subject teachers‟ views. *Journal of Education, Society and Behavioural Science*, *26*(3), 1-11.

Van der Kleij, F. M., Vermeulen, J. A., Schildkamp, K., & Eggen, T. J. H. M. (2015). Integrating data-based decision making, Assessment for Learning, and diagnostic testing in formative assessment. *Assessment in Education: Principles. Policy & Practice, 22*(3), 324e343. https://doi.org/10.1080/0969594X.2014.999024.

Vandeyar, S. & Killen, R. (2007). Educators‟ conceptions and practice of classroom assessment in post-apartheid South Africa. *South African Journal of Education*, *27*(5), 101-115.

Vardar, E. (2010). Sixth, seventh, and eighth grade teachers' conception of assessment. (Master's Thesis, Middle East Technical University, Ankara, Turkey).

Xu, Y., & Brown, G. T. L. (2016). Teacher assessment literacy in practice: A reconceptualization. *Teaching and Teacher Education, 58*(2), 149 – 162.

Yan, Z. (2014). Predicting teachers‟ intentions to implement school-based assessment using the theory of planned behaviour. *Educational Research and Evaluation, 20,* 83–97. doi:10.1080/13803611.2013.877394

Yan, Z., & Cheng, E. C. K. (2015). Primary teachers‟ attitudes, intentions and practices regarding formative assessment. *Teaching and Teacher Education*, 45, 128-136. doi:http://dx.doi.org.remote.library.dcu.ie/10.1016/j.tate.2014.10.002

Yates, A., & Johnston, M. (2017). The impact of school-based assessment for qualifications on teachers‟ conceptions of assessment. *Assessment in Education: Principles, Policy & Practice,* 1-17. doi:10.1080/0969594X.2017.1295020

Yetkin, R. (2017). Pre-service English teachers‟ conception of assessment and their future assessment practices in a Turkish context. Master‟s thesis. Hacettepe University.

Yetkin, R. (2018). Exploring prospective teachers‟ conceptions of assessment in Turkish context. *European Journal of Education Studies, 4*(5), 133-146. DOI: 10.5281/zenodo.1230554

Yidana, M. B. & Anti Partey, P. (2018). Economics teachers‟ conceptions of classroom assessment: A study of senior high schools in the Central and Ashanti Regions of Ghana. *International Journal for Innovation Education and Research, 6*(10), 153 – 174. DOI: https://doi.org/10.31686/ijier.Vol6.Iss10.1176

Zhang, Z., & Burry-Stock, J. A. (2003). Classroom assessment practices and teachers‟ self-perceived assessment skills. *Applied Measurement in Education, 16*(4), 323-342.

APPENDICES

APPENDIX A

QUESTIONNAIRE FOR TEACHERS

UNIVERSITY OF EDUCATION, WINNEBA
DEPARTMENT OF SOCIAL STUDIES

Consent to Participate

A pleasant day to you!

You have been randomly selected to take part in this research which intends to investigate the assessment conceptions and practices of basic school teachers. Your participation is entirely voluntary, and as such you can withdraw from this study at any time. Rest assured that any information obtained in connection with this study will remain confidential and will be purely used for academic purposes. By completing this questionnaire, you will be giving the researcher the permission to publish aggregated findings in his thesis and present the findings in professional journals and at conferences.

☐ I fully understand and I wish to participate in the research.

Survey Questionnaire

In answering the survey, the researcher requests your FULL HONESTY and to the best of your ability that reflects your beliefs and practices in your own classroom.

SECTION A: DEMOGRAPHIC DATA

Please put a check mark (√) in the following demographic information according to your own context.

1. Gender: ☐ Male ☐ Female

2. Age range: ☐ 21 – 25 ☐ 26 - 30 ☐ 31 - 35 ☐ 36 - 40 ☐ 41 -45 ☐ 46 and above

3. Highest educational qualification: ☐ Diploma (DBE) ☐ Bachelor ☐ Post graduate Cert ☐ Master

Doctor ☐ Others ☐

4. Current teaching level: ☐ Lower primary ☐ Upper Primary ☐ JHS

5. Teaching experience: ☐ Less than 5 years ☐ 5 – 10 years ☐ 11 – 15 years ☐ 16 – 20 years ☐ Over 20 years

6 Training (s) in educational assessment attended.

(*Tick all that apply*)

☐ None

☐ Completed an undergraduate assessment course

☐ At least half a day workshop provided by your current or previous employer

☐ At least half a day workshop provided by outside agency

☐ Completed a graduate assessment course

☐ Other: (give details):

SECTION B: Assessment Conceptions

Directions: This section of the survey asks about your beliefs and understandings about ASSESSMENT. Please put a CHECK MARK (√) in the box according to the scale that reflects YOUR OWN conceptions of assessment. Indicate how much you actually agree or disagree with each statement. Use the following rating scale and choose the one response that comes closest to describing your opinion.

1 = Strongly Disagree
2 = Mostly Disagree
3 = Slightly Agree
4 = Moderately Agree
5 = Mostly Agree
6 = Strongly Agree

Note that the ratings are ordered from Strongly Disagree on the LEFT to Strongly Agree on the RIGHT.

Assessment conceptions	**SD**	**MA**	**SA**	**MA**	**MA**	**SA**
1.Assessment provides information on how well schools are doing	1	2	3	4	5	6
2.Assessment places students into categories	1	2	3	4	5	6
3.Assessment is a way to determine how much students have learned from teaching	1	2	3	4	5	6
4.Assessment provides feedback to students about their performance	1	2	3	4	5	6
5.Assessment is integrated with teaching practice	1	2	3	4	5	6
6.Assessment results are trustworthy	1	2	3	4	5	6
7.Assessment forces teachers to teach in a way against their beliefs	1	2	3	4	5	6
8.Teachers conduct assessments but make little use of the results	1	2	3	4	5	6
9.Assessment results should be treated cautiously because of measurement error	1	2	3	4	5	6
10.Assessment is an accurate indicator of a school‟s quality	1	2	3	4	5	6
11.Assessment is assigning a grade or level to student work	1	2	3	4	5	6
12.Assessment establishes what students have learned	1	2	3	4	5	6
13.Assessment feeds back to students their learning needs	1	2	3	4	5	6
14.Assessment information modifies ongoing teaching of students	1	2	3	4	5	6
15.Assessment results are consistent	1	2	3	4	5	6
16.Assessment is unfair to students	1	2	3	4	5	6
17.Assessment results are filed & ignored	1	2	3	4	5	6
18.Teachers should take into account the error and imprecision in all assessment	1	2	3	4	5	6
19.Assessment is a good way to evaluate a school	1	2	3	4	5	6
20.Assessment determines if students meet qualifications standards	1	2	3	4	5	6
21.Assessment measures students‟ higher order thinking skills	1	2	3	4	5	6
22.Assessment helps students improve their learning	1	2	3	4	5	6
23.Assessment allows different students to get different instruction	1	2	3	4	5	6
24.Assessment results can be depended on	1	2	3	4	5	6
25.Assessment interferes with teaching	1	2	3	4	5	6
26.Assessment has little impact on teaching	1	2	3	4	5	6
27.Assessment is an imprecise process	1	2	3	4	5	6

SECTION C: ASSESSMENT TOOLS AND METHODS

Directions: Given below are the assessment methods and tools that may be used to gather, interpret, and record information regarding the learning of your students. Please encircle the number corresponding to the frequency of employing a particular method/tool. In deciding the frequency, think of your average use of the method. Use the condition below to guide you in identifying the frequency:

1 – Never (NU) **- (Never used)**

2 – Rarely **- (Once every term)**

3 – Sometimes **- (Once every month)**

4 - Often **- (Once every week)**

5 - Very Often **- (Every session/more than once a week)**

Note that the ratings are ordered from Never (1) on the LEFT to Very Often (5) on the RIGHT.

Assessment methods/tools	Frequency				
➢ Performance quizzes (Class Test)	1	2	3	4	5
➢ Objective assessments (e.g., multiple choice, matching, short answer)	1	2	3	4	5
➢ Essay type questions	1	2	3	4	5
➢ Oral questions	1	2	3	4	5
➢ Home work	1	2	3	4	5
➢ Class exercises	1	2	3	4	5
➢ Performance assessments (e.g., structured teacher observations or ratings of performance such as a speech or paper)	1	2	3	4	5
➢ Authentic assessments (e.g. “real world” tasks)	1	2	3	4	5
➢ Oral presentations	1	2	3	4	5
➢ Projects completed by individual students	1	2	3	4	5
➢ Projects completed by teams of students	1	2	3	4	5
➢ Portfolios Assessment	1	2	3	4	5

*** End of Questionnaire ***

Please make sure that you have answered every item.

Thank you so much for your participation!

APPENDIX B

INTERVIEW SCHEDULE

Demographic information

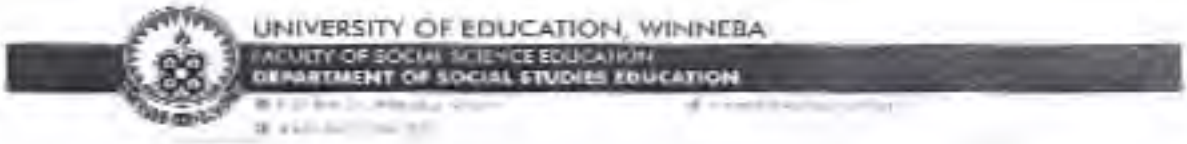
1. Your gender?
2. What level/class do you teach?
3. How long have you been teaching?
4. How old are you?
5. What is your highest qualification?
6. Have you participated in an assessment training workshop in the last two years and what were its purposes?

How basic school teachers conceive and practice assessment

1. In your view, what is the purpose of assessment?
2. Generally, what do you think are the main functions of doing assessment?
3. What role does assessment play in your students learning?
4. What is the role of assessment in your teaching?
5. What kinds of assessment techniques/methods/strategies do you use to assess your students learning? How frequent do you use each of these assessment techniques/methods/strategies?
6. Which specific part in your classroom instruction do you implement those methods (based from your answer in no. 5)? What is/are your intention/s in conducting that particular assessment method/s?
7. In your view do you think that assessment results provide an accurate measure of students‟ performance?

APPENDIX C

LETTER OF INTRODUCTION


UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF SOCIAL SCIENCE EDUCATION
DEPARTMENT OF SOCIAL STUDIES EDUCATION

11th November, 2019

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF INTRODUCTION: MR. SHANI OSMAN

We write to introduce Mr. Shani Osman to your outfit. He is an M.Phil. Social Studies Education student with index number 8130140005 from the Department of Social Studies Education, University of Education, Winneba.

As part of the requirements for the award of the Master of Philosophy degree, he is undertaking a research on the topic: *"Exploring Basic School Teachers' Conceptions and Practices of Assessment in the Sissala East Municipality"*.

We wish to assure you that any information provided would be treated confidential.

Thank you.

Yours faithfully,

Margaret G. Nyala (Mrs.)
For: Ag. Head of Department