

**INFLUENCE OF TEACHER COGNITION IN THE TEACHING AND TESTING OF
ENGLISH GRAMMAR IN SELECTED SECONDARY SCHOOLS OF LUANSHYA
DISTRICT, ZAMBIA**

**BY
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**A dissertation submitted to the University of Zambia in partial fulfillment of the
requirements for the award of the degree of Master of Education in Applied
Linguistics.**

The University of Zambia

Lusaka

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DECLARATION

I, JULIET PHIRI, do hereby declare that this dissertation is my own work and has not been previously submitted at this or any other university for similar purposes.

Signed.....

Date

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APPROVAL

This dissertation of JULIET PHIRI has been approved as the partial fulfillment of the requirements for the award of the degree of Master of Education in Applied Linguistics by the University of Zambia.

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DEDICATIONS

This study is dedicated to my father and mother Jackson Asafu Phiri and Esther Banda whose love and ceaseless support for me knows no bound. You inculcated the love of books in me very early in my life. I hope this achievement fulfills your desire to raise an educated daughter. I say thank you for always encouraging me to reach for the stars.

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ABSTRACT

Developments in cognitive psychology have stressed the complex relationship between what people do, what they believe and what they know. Teachers' cognitive processes are important in the teaching process. The actual realization of the curriculum is dependent on teachers' understandings, beliefs and experiences about language teaching even in the teaching and testing of grammar. Therefore, this study sought to examine how teacher cognition influenced how English language teachers understood, taught and tested English grammar in selected secondary schools of Luanshya District. The objectives were to; establish teachers' understanding of grammar, analyse teachers' beliefs on how grammar should be taught, analyse the beliefs of teachers on how grammar should be tested and examine how the experiences of teachers affected the teachers' teaching and testing of grammar. The study was undergirded by the complex dynamic systems theory which posits that teacher cognition is a complex dynamic system where understanding, beliefs and experiences are internally connected and mutually dependent as proposed in the works of (De Bot, et al, 2005). It was also supported by Bernstein's (1973) code and pedagogical discourses theory that states that classroom learning does not take place in a vacuum but it is affected by other factors such as the syllabus, learners and the whole education system. The study sample consisted of six schools and from those schools 12 participants were drawn. The 12 participants included 2 teachers of English from each school. The research method used in this study was a qualitative descriptive research design. Data was gathered through class observations, semi-structured interviews and document analysis. Data was analyzed by the use of common themes based on the objectives that guided the study. The findings from the first objective showed that the teachers understood grammar to be the rules of the language. The findings from the second objective showed that the teachers believed that grammar should be taught systematically and explicitly using deductive techniques such as teacher exposition and question and answer. The teachers believed in rule explanation, the use of metalanguage and frequent correction of errors. The findings from the third objective showed that the teachers believed that grammar should be tested explicitly using written assessments in form of transformations, fill in the blanks and complete the sentence exercises. Also, it was discovered that what the teachers considered most important when marking were the application of the rules and the conventions of standard writing such as punctuations, spellings and general work layout. The findings from the fourth objective showed that the majority of the respondents learnt grammar explicitly from their past teachers. Their teachers used traditional methods to teach grammar and these are the methods the teachers used most of the time. Another influential aspect in shaping their grammar teaching cognitions was found to be tertiary education. The respondents stated that methodology courses widened their view of grammar and taught them the methods to use when teaching grammar. The findings also show that the teachers have maintained the grammar assessment practices of their past teachers. Contextual factors also such as learner abilities and availability of materials affected how they taught and tested grammar. Finally, the findings showed that teachers faced several challenges in the teaching of grammar to do with lesson delivery, the nature of teaching resources and the nature of the learners they had. In view of the findings, the study recommended that teacher trainers should teach various forms of grammar and how they should be taught. Moreover, secondary schools should organize Continuous Professional Development programs for teachers to improve their cognitions for successful implementation of the curriculum.

Keywords: *Teacher cognition, grammar, understanding, beliefs and experiences*

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OPERATIONAL DEFINITIONS

- Teacher cognition:** What teachers think, know, believe, and do
- Experience:** The experience of teachers as learners, student teachers and as in-service teachers
- Beliefs:** Assumptions, perceptions, personal theories about the nature of teaching, learning and pupils.
- Understanding:** The teachers' knowledge of content and pedagogy

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter consists of the following; the background of the study, the statement of the problem, the purpose of the study, objectives, research questions, significance of the study, delimitation of the study, limitation of the study and the structure of the dissertation.

1.1 Background Information

Developments in language pedagogy from Audiolingualism to communicative language teaching have brought a great change in the way grammar is viewed and taught by language teachers. Grammar teaching has become more communicative since communicative language teaching views language as an instrument of communication and grammar as a tool that helps to convey meaning and comprehend other people's messages (Nachiengmai, 1997). The Senior Secondary School Syllabus for English language in Zambia recommends that, teachers should use the Communicative Language Teaching Method and Text-based Integrated Approach in the teaching of English grammar (Senior Secondary School Syllabus, 2013). This entails the use of methods that encourage learners to reflect, think and do rather than reproduce language from rote learning.

However, the realization of the curriculum itself is dependent on what teachers' understanding, perceptions, beliefs and experiences about grammar are, especially the manner in which it should be taught and tested. This is because studies have shown that teacher cognition has a strong bearing on what teachers do in class. According to Borg (2003), teacher cognition refers to what teachers think, believe and know and its relationship to teachers' classroom practices. It refers to an inclusive term referring to the complex, practically-oriented, personalized and context sensitive networks of knowledge, thoughts and beliefs that language teachers draw on in their work (Borg, 2015). Kagan (1990) also describes teacher cognition as pre or in-service teachers' self-reflections; beliefs and knowledge about teaching, students and content; and awareness of problem solving strategies endemic to classroom teaching. It is believed that all the factors mentioned in the definitions above play a vital role in the decisions that teachers will make before and while teaching including the teaching and testing of grammar.

To better understand the study of teacher cognition, it is important to have a glimpse of its emergence. In the 1960s, teacher education had concentrated on the observable aspects of teaching. Research on teaching focused on the search for effective teaching behaviours. This meant looking for classroom behaviours that would result in greater teaching and learning. This was called a process-product model of research and its purpose was to identify these effective behaviours in the belief that they could then be applied universally by teachers (Borg, 2009). However, this is considered as a simplistic notion of studying teaching and learning. This is because the paradigm undervalued the previous lives and experiences of teachers by conceptualising teaching as an “*abstract, decontextualized body of knowledge and a quantifiable set of behaviours*” (Freeman and Johnson, 1998:399). However, teacher cognition research postulates a swing from searching for better ways to train teachers towards a need to understand how teachers learn to teach by examining their understanding, beliefs and experiences and how that affects their instructional choices. This is because teachers as human beings are active decision makers and no matter how much educational systems may try to program teachers to act in certain ways, they may not.

As a result, in the 1970s, influenced by Walberg’s (1977) term of “teachers’ mental lives”, and the leading-edge work of Lortie (1975) on the *apprenticeship of observation*, researchers began to research into the aspect of teaching being more than a simple set of behaviours. Furthermore, they asserted that the complexity of learning to teach could not be explained by the dominant process-product research model which had a behaviouristic perspective (Öztürk, 2015). This led to the coming together of an influential panel that convened in 1975 in the United States of America which directly and largely fuelled the emergence of teacher cognition. This panel was part of the national education conference in the United States of America. In their report they concluded:

it is obvious that what teachers do is directed in no small measure by what they think...To the extent that observed or intended teaching behaviour is "thoughtless", it makes no use of the human teacher's most unique attributes. In so doing, it becomes mechanical and might well be done by a machine. If, however, teaching is done and, in all likelihood, will continue to be done by human teachers, the question of relationships between thought and action becomes crucial (National Institute of Education, 1975:1)

Also, developments in cognitive psychology stressed the complex relationship between what people do, what they believe and what they know and teachers are not an exception. Cognitive psychologists consider it important to look at the mental processes of an individual and how these processes influence behaviour (McLeod, 2015). This engendered interest in the area of what teachers think when teaching language which was termed as teacher cognition. As a result, teacher cognition was strongly established as a discipline in the 1990s as evidenced in the following words

“We need to understand more about how language teachers conceive of what they do, what they know about language teaching, how they think about classroom practices and how that knowledge and these thinking processes are learned through formal teacher education and informal experience on the job” (Freeman and Richards, 1996: 1).

Consequently, from the mid-1990s going forward, there has been a steady increase in the bulk of research done on what language teachers know, believe and think and how that influences their classroom choices and practices (Borg, 2003).

Following the establishment of teacher cognition as a discipline, many studies such as (Borg, 2003, 2009, 2015, Freeman and Richards, 1996) have shed light on the importance of the cognitive processes of teachers in the teaching process. It is now a recognised fact that teachers are active decision makers in the process of teaching and their teaching is not mechanic. There is something that influences their instructional choices and they do not implement curricula designed by others in a thoughtless manner but teachers make decisions before and while teaching (Borg, 2009). It is concluded from research done in teacher cognition that teachers base their instructional decisions including in the teaching of grammar on their own practical theories (knowledge, beliefs, experiences and attitudes). These theories are formed through experience and grounded in the teachers’ understandings of their teaching contexts (Borg and Burns, 2008). Teachers’ instructional choices in the teaching of grammar are therefore motivated by diverse psychological, instructional, institutional and social influences.

Therefore, understanding these influences is central to a better understanding of teachers’ English grammar teaching and testing. It is believed that teachers will hold personally defined understandings of the value of the teaching and testing of grammar which will shape the way grammar is taught and tested (Borg and Burns, 2008). This might be the reason why despite the

emergence of numerous second language (L2) acquisition theories and teaching methods over the years, teachers have not deviated from the more traditional grammar oriented approaches as (Thornbury, 1998) argues. It is for this reason that research in teacher cognition in the Zambian context is of utmost importance. This is because studies have been done in Zambia that were primarily focused on how teachers apply certain methodologies to teach the English language (Mwanza, 2016, Mumba, 2019, Lungu, 2006) and on the factors affecting the use of certain methodologies when teaching language (Mwanza, 2016, Mumba, 2019, Lungu, 2006). However, these studies did not consider the cognitive factors involved for the teachers in their studies to teach the way they did. Therefore, as opposed to the behaviouristic studies done so far, this study needed to study the teaching and testing of grammar from a cognitive point of view.

Also, the secondary school syllabus recommends the use of communicative language teaching and text based integrated approach (Mumba and Mkandawire, 2019). Both of these approaches are broad and have a particular view of grammar and grammar teaching. Therefore, it was imperative to consider the role of teacher cognition in teachers' interpretation of the syllabus because no matter how much educational systems may try to program teachers to act in certain ways, they can only teach grammar according to what they know and believe. Therefore, teacher cognition informed the standpoint that this study adopted in studying the teaching and testing of English grammar in selected secondary schools of Luanshya district.

1.2 Statement of the Problem

There are studies have been done in Zambia that were primarily focused on how teachers apply certain methodologies to teach the English language (Mwanza, 2016, Mumba, 2019, Lungu, 2006) and on the factors affecting the use of certain methodologies when teaching language (Mwanza, 2016, Mumba, 2019, Lungu, 2006). However, no research has been done to ascertain the extent to which teacher cognition influences the teaching and testing of grammar in secondary schools in Zambia. Therefore, the problem that this study sought to address was how teacher cognition influenced how teachers of English understood, taught and tested English grammar in selected secondary schools of Luanshya District. As a question, the problem was; how does teacher cognition influence language teachers' understanding, teaching and testing of grammar in selected secondary schools of Luanshya District?

1.3 Purpose of the Study

The purpose of this study was to examine how teacher cognition influenced how teachers of English understood, taught and tested English grammar in selected secondary schools of Luanshya district.

1.4 Research Objectives

The objectives of this study were to:

1. Establish teachers' understanding of grammar.
2. Analyse the beliefs of teachers on how grammar should be taught.
3. Analyse the beliefs of teachers on how grammar should be tested.
4. Examine the experiences of teachers in the teaching and testing of grammar.

1.5 Research Questions

This study aimed to address the following questions:

1. How do teachers understand Grammar?
2. What are the beliefs of teachers on how grammar should be taught?
3. What are the beliefs of teachers on how grammar should be tested?
4. How do the experiences of teachers affect how they teach and test grammar?

1.6 Significance of the Study

Insights into teachers' conceptions of the teaching and testing of grammar may extend current understandings of English grammar teaching and testing in Zambia. For teacher educators, it may influence the designing of effective language teacher training programs that consider all the cognitions of prospective teachers. It is hoped that this study can propel teacher educators to offer early opportunities for student teachers in which they can face their existing grammar teaching cognitions and evaluate them in the scope of their programs. For teachers, it may also help find ways of understanding their practices and find ways of how best to support them. For researchers, this research also draws on classroom practices of teachers and contextual factors which would remarkably contribute to our understanding of teacher cognition. Furthermore,

syllabus designers may be enlightened on how the syllabus is being interpreted. Finally, it may also stimulate further research in the area of teacher cognition in Zambia and add to the body of knowledge on teacher cognition

1.7 Delimitation

The study was conducted in selected secondary schools of Luanshya District. The sample only included six schools which comprised of low, medium and high density schools.

1.8 Limitation of the Study

Data collection was interrupted because schools were closed due to Covid-19 and it became hard to convince some participants to complete their participation in the study. Also, findings of this study may not be generalised considering it was only conducted in Luanshya district.

1.10 Structure of the Dissertation

The first chapter provides the introduction to the study. It also outlines the study purpose, study objectives and questions. Chapter two is a review of available literature on the study. It explains teacher cognition and its dimensions. It further reviews literature both local and foreign on teacher cognition and grammar instruction. The third chapter discusses the theoretical framework employed in the study. The fourth chapter explains the methodology used in the study. It explains the design, the instrumentation, the data collection procedures and the sampling. Chapter five is a presentation of the findings. Chapter six is a discussion of findings according to research objectives with reference to the earlier reviewed literature. Finally, Chapter seven gives the conclusion and recommendations. This chapter has given the background to the study and has given the problem statement, significance of the study, research objectives, research questions, delimitation of the study, limitations and given a structure of the dissertation. The next chapter provides the literature review.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

The aim of this study was to examine how teacher cognition influenced how teachers of English understood, taught and tested English grammar. It is for this reason that this review was situated within teacher cognition and its dimensions and the teaching and testing of grammar. The literature review begins with conceptual literature followed by actual studies conducted on teacher cognition. The studies reviewed have been thematically organized according to the objectives of this study.

2.1 Teacher Cognition

To start with, it is important to establish the nature of teacher cognition. This is an area of research primarily concerned with investigating the thought processes of language teachers. Borg (2003) states that teacher cognition research is concerned with understanding what teachers think, know and believe and its relationship to classroom practices. According to Kagan (1990) teacher cognition also encompasses pre-service as well as in-service teachers' self-reflections; beliefs and knowledge about teaching, students and content; and awareness of problem solving strategies endemic to classroom teaching. It is a complex system in which all elements of teaching and learning are involved. These elements include; subject matter, the tasks and activities, the learners, the materials as well as assessment. Other factors that influence the decisions of teachers when teaching are institutional and environmental factors (Borg, 2003). These elements interact in the process of teaching. As a result of the aforesaid, teacher cognition may also be explained as the way in which self-reflections, knowledge and beliefs are shaped by the experiences of the teachers as learners, pre-service teachers and in-service teachers. It is for this reason that the study of teachers' understandings, beliefs and experiences is at the core of the study of teacher cognition. Therefore, for the purpose of this study, teacher understanding, teacher beliefs and teacher experiences will be referred to as the dimensions of teacher cognition. The following section will highlight these dimensions of teacher cognition.

2.2 The Dimensions of Teacher Cognition

As earlier stated, when studying teacher cognition, the goal is to explore the knowledge, beliefs and experiences of the teachers to better understand why they behave the way they do in class. Therefore, the following part will primarily focus on expounding on the dimensions of teacher cognition and the role that the dimensions play in the teachers' choices of classroom practices. These dimensions include; teacher understandings, teacher beliefs and teacher experiences.

2.2.1 Teacher Understanding/Knowledge

The first dimension that will be elucidated is teacher knowledge. Teacher knowledge is a very cardinal aspect in the study of teacher cognition. This is because the decisions teachers make in class will depend on the teachers' knowledge in that particular topic or the lack of it. The question therefore, is, what is teacher understanding? In the context of this study, teacher understanding will mean the knowledge that teachers possess and the terms will be used interchangeably.

Grossman and Richert (1988:54) define Teacher knowledge as follows: "a body of professional knowledge that encompasses both knowledge of general pedagogical principles and skills and knowledge of the subject matter to be taught." This teacher knowledge is two-fold. It includes; 'practical knowledge', which involves the knowledge of subject matter, instructional routines, classroom management, students' needs, and the 'personal aspect' which is the teachers' knowledge of themselves as acquired through their experiences (Elbaz, 1981 as cited in Kiss and Lin, 2016). It is knowledge coupled with experience that brings forth understanding. It is for this reason that the experiences of teachers cannot be discarded. This is because the knowledge they have acquired together with their experiences will shape their understanding of subject matter and delivery in classroom set-ups. Therefore, understanding is a combination of theoretical knowledge and instructional methods, and feelings, values, needs, and beliefs - paired with experience that guides instructional practice in a given context (Verloop, et al, 2001, Kiss and Lin, 2016,).

Guerriero (2017) investigating the knowledge of teachers involves understanding how this knowledge functions in the teaching-learning process. To be more precise, the focus is on how teachers apply their knowledge in making decisions, for instance, about lesson design or making

on-the-spot judgements in the classroom. Researchers of teacher cognition argue that classroom decision-making is actually a basic teaching skill. Decisions are made regularly by teachers while processing cognitively complex information about the learners in order to decide alternatives for increasing their understanding. This will only be so if they possess adequate knowledge in the areas they are trying to teach.

In grammar teaching, Kiss and Lin (2016) state that weaknesses in the teachers' language awareness and a lack of grammatical knowledge will have a negative impact on the effectiveness of teachers. They further state that this calls for a need to provide teachers with the knowledge on language teaching in teacher development programmes and to develop a common belief system on pedagogical practice amongst teachers. We can therefore assume that the knowledge that the teachers possess will inform their belief systems regarding the teaching and testing of that aspect of language teaching. This is because although teacher knowledge is strongly related to individual experiences and contexts, there are elements of it that are shared by all teachers or large groups of teachers particularly those who teach learners of a certain age level or a certain subject (Verloop, et al, 2001).

2.2.2 Teacher Beliefs

The second dimension of teacher cognition is teacher beliefs. Beliefs help us understand how teachers conceptualise their work. Beliefs are important to consider for teacher educators and policy makers alike. If teachers are going to change and implement what the curriculum stipulates for effective teaching and even to receive new changes, their beliefs have to be considered.

The question that arises therefore is, what are beliefs? Beliefs are not easy to define because they are not directly observable. They are called different names by different scholars such as “implicit theories”, “conceptions”, “perceptions,” “rules of practice” “personal theories”, “personal pedagogical systems”, “judgements”, “untested assumptions”, “perceptions”, “pedagogical principles”, “theories for practice”, “images” and so on (Mohamed, 2006, Pajares, 1992:309).

Kagan (1992:65) defines teacher beliefs as ‘Unconsciously held assumptions about students, classrooms, and the academic material to be taught.’ Beliefs are also a set of strong feelings and

attitudes of teachers about things that can affect the teaching-learning interaction. The beliefs of teachers will have a direct implication on the teaching-learning transaction (www.igi-global.com)

When it comes to grammar teaching and testing there are varied issues that rise and these form the basis of the teachers' beliefs. Some of the issues raised by researchers and teachers alike include whether grammar should be taught or should teachers simply create the conditions by which learners will learn naturally? What grammar should be taught and when should it be taught? Is there any value in teaching grammar explicitly? These are all questions rising from second language acquisition theories (Ellis, 2006). However, teachers based on their experiences as learners, student teachers and in service teachers also have their own in-built beliefs that may contradict with second language learning theories. Also, it is important to note as Zephir (2000) argues that teachers' beliefs are not always inspired and developed by research studies but by personal experience. The incorporation of grammar and the omission of it doesn't depend on second language acquisition theories but depends on teachers' beliefs and knowledge regarding learners' abilities, intellectual and affectual needs of learners as well as classroom management and their own self perception of their knowledge (Borg, 2001, 2003).

These beliefs will inevitably influence the way teachers teach in class. Actually, studies have shown that beliefs are predictors of a teacher's behavior in a classroom and a reflection of what a teacher provides in a classroom (Morina, 2016). Studies also indicate that teacher beliefs can sometimes be resistant to change because they are established early on in life (Borg, 2003, Williams & Burden, 1997 as cited in Morina, 2016). Therefore, for professional development programs that seek to bring about change in the curriculum and teaching approaches to be successful, teacher beliefs will play a major role. Continuous Professional Development programs need to encompass ways of leading teachers to alter their beliefs and practices in order to improve their art and craft.

However, tensions exist between teachers' individual perceived needs for self-improvement and the demands made on them from higher authorities, requiring changes in curriculum and teaching approaches. This is because just considering teachers' behaviour devoid of their beliefs may and will lead to failed attempts. For instance, the senior secondary English language

syllabus recommends that teachers use the communicative approach in teaching the language even grammar but the use or the neglect of this approach and its techniques will depend on what teachers believe about how language and even grammar should be taught and tested.

2.2.3 Teacher Experiences

The third dimension of teacher cognition that this review will explain is teacher experiences. Experience plays a significant role in the type and content of decisions teachers make during their class hours (Öztürk, 2015). The experiences that influence the teachers' instructional choices include; prior language learning experiences, the pre-service education, the years spent as in-service teachers and all teaching experiences. These are the main sources of the teachers' cognition on language teaching.

Firstly, as stated above, one important area of teacher experiences is the area of the teachers' own experience of language learning; the way the teacher himself learnt the language. It is believed that students when going to college already have their own conceptions of language teaching based on how they learnt the language themselves (Borg, 2003, Lortie 1975). This is best summed up in the following statement from Grossman (1991:260) who states, "Prospective teachers do not enter teacher education as blank slates; they arrive with an extensive apprenticeship of observation in teaching methods and with prior knowledge and beliefs about their subject area". Students arrive at college after having spent thousands of hours of observing and evaluating professionals in action. This is what is called the "apprenticeship of observation," (Lortie, 1975). Researchers state that sitting in classrooms provides socialization into established traditions that in turn frame teachers' beliefs about what schooling should be like (Smagorinsky and Meghan, 2014).

The apprenticeship of observation considers all the personal life experiences of a teacher as a learner and their influence on the present. This is so because according to Schempp (1989 cited in Smagorinsky and Meghan, 2014) by being acculturated into orthodox schooling, prospective teachers have a difficult time imagining alternatives to what they experienced as learners. Therefore, teacher training programmes which ignore student teachers' prior beliefs may be less effective at teacher training, since teacher cognition and practices are mutually playing an important role in shaping student teachers' teaching experience (Borg, 2003). Borg (2015) also

asserts that teachers' prior language learning experiences create cognitions which form the basis of their early conceptualization of language teaching during teacher education and may continue to influence them throughout their professional lives.

Boyd, et al (2013) however, state that the apprenticeship of observation can be challenged, despite its intense effects on teachers. Teacher education programs just need to recognise the autobiographical experiences of students and find a way to mediate them in some way through coursework.

Ebbsworth and Schweers' (1997) state that in grammar teaching teachers' beliefs about grammar pedagogy are largely shaped by their previous learning experiences much more than by their method classes on teacher training courses and subsequent Continuous Professional Development programs in the long run. This explains why L2 teachers' grammar teaching approaches are often outdated as concluded by (Borg, 2015).

The second area of influence is experience at university or college. Many researchers in the field of teacher education agree that pre-service teacher education is the first important step in teachers' professional career. This area is investigated because at this stage student teachers' prior conceptions of language teaching can either be cemented or discarded altogether. Although it is claimed that these beliefs formed are resistant to change, it is also true that they do change, but by integrating prior thinking and beliefs (Morina, 2016). One of the factors that is expected to help teachers in altering their tacit beliefs is the teacher education programs. These programs need to be developed in a way that helps teachers in their professional growth and improves their practices and roles in the foreign language classrooms.

The last area of influence is the actual teaching context in which they find themselves. This refers to the actual situation on the ground that the teachers encounter. This could be the caliber of the learners or the learner proficiency in the language or prior exposure to the target language. This demonstrates that teachers' classroom practices are shaped by numerous interacting and sometimes conflicting institutional, pedagogical, personal and physical factors (Borg, 2003).

All the above areas of experience will have a bearing on the decisions that teachers make in class. Experience is very cardinal because it shapes and reshapes the beliefs and understandings of teachers regarding the teaching and testing of grammar as well as their understanding.

Exploring the teachers' experiences helped the study understand why teachers made the decisions they did before and while teaching and testing English grammar.

2.3 Grammar

Grammar has been a subject of second language teaching research for a long time now. It is for this reason that this study sought to establish the cognition of language teachers in Zambia's Luanshya District in the teaching and testing of English grammar. The question that this part of literature review sought to answer was; what is grammar and how should grammar be taught?

2.3.1 Definitions and Meaning of Grammar

Brown (1994) defines grammar as a system of rules governing the conventional arrangement and relationship of words in a sentence. Deng and Lin (2016) add that the rules of grammar facilitate the acquisition of a foreign language and contribute to the cultivation of language competence. These definitions follow after transformative generative grammar which was proposed by Chomsky. Chomsky (1957:13) states that grammar is "a set of rules for generating language." This informs the rule explanation dominated grammar teaching and is often done at a sentential level.

Halliday (2000) from a Functional point of view defines grammar as a study of wording but one that interprets the wording by reference to what it means. It is studying vocabulary and how words are formed but bearing in mind that language is a social issue (Nyimbiri and Mwanza, 2020). This entails the production of successful utterances that are appropriate. These Functional definitions inform the communicative approach that the Zambian syllabus recommends.

The grammar that this study refers to is the grammar that Larsen-Freeman calls pedagogical grammar. She defines grammar as "the structures and rules compiled for instructional and assessment purposes (pedagogical grammar)" (Larsen-freeman, 2009:518). This study sought to establish how the teachers in Luanshya District taught the structure and the rules compiled in the English language syllabus for instruction and assessment based on their cognition.

2.3.2 The Teaching of Grammar

This section highlights what second language acquisition theories state on how grammar should be taught. Grammar teaching is an issue which has received popular focus in most debates in the field of language teaching. The debates in the teaching of grammar have gone to an extent where

scholars argue whether grammar should even be taught at all. This debate was initiated by Krashen's (1981) distinction between learning and acquisition of language. He posited that formal grammar lessons would not develop the ability to use the forms correctly but would only develop declarative knowledge. It was claimed that language is acquired through natural exposure (Morina, 2016). Consequently, researchers in second language acquisition form basically two camps. On the one hand, researchers argue that the teaching and testing of grammar be explicitly done. On the other hand, researchers argue that the teaching and testing of grammar should be done implicitly and follow the natural order of acquisition. These two views of grammar teaching inform the beliefs that teachers hold about the teaching of grammar through their experiences.

2.3.2.1 Explicit Instruction

Grammar teaching according to Ellis (2006) involves any instructional technique that draws learners' attention to some specific grammatical form in such a way that it helps them either to understand it metalinguistically and/or process it in comprehension and/or production so that they can internalize. In the teaching of grammar there are two types of instruction; these include explicit instruction and implicit grammar instruction. Explicit grammar instruction is used to build up the learners' explicit knowledge. Explicit knowledge refers to the knowledge of meanings of words and grammatical rules. Also, it includes knowledge of metalanguage to talk about language. Therefore, explicit grammar instruction involves instruction in the rules of the target language. According to Ling (2015), explicit instruction refers to teaching methods that make form as the center. It emphasises the purposive learning of grammatical rules and the accurate and efficient use of language as the main ingredient. This explicit instruction is in two forms, it can either be direct or indirect but both are called under one umbrella label of explicit grammar instruction. What Ellis (2014) calls conscious raising instruction. It is the raising of the awareness of the learners to the target language's grammatical rules and structures. The direct approach involves the teacher explicitly stating the rules to the learners by either explaining them or by referring them to grammar reference books. While in the indirect approach learners are guided to discover grammatical rules for themselves. The rule driven approach is also known as the deductive approach while the rule discovery path is referred to as the inductive approach. Explicit teaching involves both the deductive and inductive approaches (Larsen-Freeman, 2009).

Nevertheless, the goal of both approaches is to raise the learners' awareness of explicit knowledge. Thus, grammatical rules are still central to the teaching of grammar in explicit instruction.

2.3.2.2 Implicit Instruction

Implicit grammar instruction on the other hand attracts rather than direct the learners' attention to form. Implicit instruction caters for the incidental acquisition of grammatical structures while learners are involved in other communicative activities (Larsen-Freeman, 2009). Communicative activities are activities that primarily focus on meaning and not form (Ellis, 2014). From the foregoing, one can see that implicit instruction is powered by communicative approach which the senior secondary syllabus for English recommends in Zambia. The communicative approach recommends that the teaching and testing of language and indeed even grammar have the characteristic of meaningful communication, authentic situations, unpredictable language input, creative language output and integrated language skills (Manchishi, 2017). The communicative approach is mainly based on the learner's ability to interactively negotiate meaning and the new linguistic forms are to be acquired incidentally during the process. Therefore, applying these principles in the classroom requires new classroom techniques and activities. Additionally, these principles call for new roles for teachers and learners. However, how ready the teachers are to take up these roles is a question that this study sought to answer through examining their understandings, beliefs and experiences of grammar teaching.

According to Ellis (2014), in implicit instruction the teacher should seek to frequently expose the learners to target structure and give frequent opportunities for learners to attempt production of the target structure. In this case, the structure is not isolated but it is presented in language as a whole. Apart from that, the teacher also seeks to create "real operating conditions." That is, exposure to and use of the target structure need to occur in a context where the learner is engaged in trying to communicate in order to achieve some outcome other than that of learning the target structure. The teacher needs not to teach structure from a sentential level but should create authentic situations in the classroom in which learners use language creatively.

Through the evolution of language pedagogy the role of explicit and implicit instruction has constantly been debated in second language acquisition. Several positions have developed

regarding whether and how grammar should be incorporated in the second language curriculum. In the study of teacher cognition, it is even more important to establish the position of teachers on the matter. This is because their views will possibly be reflected in their classrooms. This is to say that the teachers' own beliefs on the value of either explicit or implicit instruction will determine which approach they take in their own classrooms.

2.3.2.3 Error Correction in Grammar Teaching

Another important and somewhat controversial issue in the teaching of grammar is error correction. While some feel that correcting students' errors causes students to experience debilitating anxiety, most research supports the value of giving learners feedback on their errors in an affectively-supportive way (Larsen-Freeman, 2009). However, it is far from being clear which error correction techniques are the most effective.

Just as with other aspects of grammar instruction, error correction can be done explicitly or implicitly. Implicit error correction takes place through such means as clarification requests, confirmation checks, and recasts (Larsen-Freeman, 2009).

The beliefs and experiences of teachers in the teaching of grammar will dictate whether the teacher corrects errors explicitly or implicitly. It is for this reason that this study was primarily concerned with establishing the beliefs of teachers in error correction through interviews and class observations. Especially to find out why the teachers made the assessment choices they made whether explicit or implicit.

2.4 The Testing of Grammar

Assessment is an integral part of the learning and teaching process. Manchishi (2017) defines assessment as the procedures or methods used to evaluate the teaching-learning process. It determines where learners are at present and what level they have achieved; it gives learners feedback on their learning and analyzes their needs for further development. It also enables the planning of curricula, materials, and activities. Teachers are at the core of the assessment because they make decisions regarding the process of lessons and determine the strengths and weaknesses of the assessment alternatives available to them as they make judgements about their learners progress (Sahinkarakas, 2012).

Grammar testing like grammar teaching can also either be done explicitly or implicitly. Explicit grammar testing is typically done by means of decontextualized, discrete-point items such as sentence unscrambling, fill-in-the-blanks, error correction, sentence completion, sentence combining, picture description, elicited imitation, judging grammatical correctness, and modified cloze passages and so on (Larsen-Freeman, 2009). These formats mostly test learners' grammatical knowledge, however, they do not assess whether test takers can use grammar correctly in real-life speaking or writing situations.

However, the communicative approach which the secondary school syllabus recommends is a shift from seeing language proficiency in terms of knowledge of structures, which could best be assessed using discrete-point items, to the ability to integrate and use the knowledge in performance, which could best be assessed through the production and comprehension of written texts and through face-to-face interaction. This brings about what is known as implicit grammar testing or what Manchishi (2017) terms as communicative language testing. This type of testing is a more integrative approach to grammar assessment. This means that it integrates all the four language skills in the testing of grammar and grammar is not assessed independently. Research shows that teachers' beliefs about assessment affect their teaching and assessment practices (Sahinkarakas, 2012). This is the reason why this study embarked on studying teachers' beliefs about how grammar should be tested by considering the teachers' formative assessment practices. This study was concerned with formative assessment because it is one area that has been overlooked by testing researchers as Shohamy and Poehner (2008) assert.

2.5 Teachers' Understanding of Grammar

In this section, studies which focus on teachers' understanding of what grammar is and the nature of grammar were reviewed. This is because the effective implementation of teaching programs depends on teachers' unique knowledge and understandings. This includes their subject-matter cognitions, and cognitions about teaching and learning and the teaching and testing of grammar is not an exception, (Freeman, 2002). Studies that have examined teachers' understandings as well as knowledge of grammar have been examined below.

Andrews (1999) conducted a comparative study to determine the explicit knowledge of grammar and grammatical terminology of groups of native and non-native speaker perspective and

practicing language teachers in Hong Kong and the UK. He found that the non-native teachers of English who had a total mean score of around 70% did significantly better on the test he administered than the other groups overall. On the other hand, the native speaker group of undergraduate students studying English studies performed worse of all with an overall average score of less than 41%. This indicates that there are low levels of grammatical knowledge reported in the UK among language teachers. From the above review it was discovered that non-native speaker teachers were more vested in grammatical knowledge than native speaker teachers. Therefore, the current study sought to establish whether Zambian teachers being non-native speakers were also well vested in grammatical knowledge like their Hong Kong counterparts in the reviewed comparative study.

Myhill, et al (2013) conducted a study in a randomised controlled trial involving 32 English teachers from 32 schools in England using complimentary sets of qualitative data from interviews and lesson observations. They found that even though the teaching of grammar had been mandated in statutory curriculum documents in England since 1988, research evidence continued to suggest that metalinguistic knowledge remained an area of challenge for many teachers. Therefore, the current study intended to ascertain the level of competence in metalinguistic knowledge of language teachers in Luanshya District. The study also desired to establish the levels of confidence among English language teachers in their own grammatical knowledge.

It is also worth noting that the knowledge that language teachers possess can change and there can emerge new understandings about grammar. For instance, Svalberg (2015) did an interpretive study by administering a course to postgraduate students at masters level. Data was drawn through the use of interviews, reflective diaries and peer interaction. The participants were required to negotiate solutions to grammar tasks designed to provoke 'cognitive conflict' when the authentic language use of the texts did not conform to the students' prior knowledge. This was assumed to stimulate a high quality of engagement with language (Svalberg, 2009) and thereby facilitating the construction of new or enhanced knowledge about grammar. Findings reveal that cognitive conflict is an essential factor in the emergence of new understandings of complex grammar features and of grammar as meaning in context. It is for the above reason that this study attempted to find out whether the teachers under study had gone through any form of

cognitive conflict in their time of teaching grammar. The study also wanted to find out the particular knowledge that the teachers were introduced to if any that caused cognitive conflict.

Mwanza (2016) conducted a study on eclecticism in the teaching of grammar at selected Zambian secondary schools. It was a mixed methods research where he employed the use of questionnaires, interviews, lesson observation and document analysis. His study sample comprised of 90 teachers of English and 18 lecturers. The study had an objective on teachers' understanding of grammar. Interview data showed that teachers in the Central Province of Zambia had a traditional view of grammar. The teachers' conceptualisation of grammar was that of transformational generative grammar. He stated that respondents in the study viewed grammar as rules of a language and they believed that language was rule-governed. The respondents explained that the teacher should focus on the rule governing sentence construction depending on the topic being taught. However, this was in Central province and in the context of eclecticism. Therefore, this study was a full-fledged research on teachers' understanding of grammar from a cognitive point of view.

From the literature reviewed we can see that several studies have been conducted to ascertain the teachers' knowledge and understanding of grammar. It is clear to see from the literature reviewed that native speaker English teachers from England seem to struggle with subject matter knowledge even when grammar teaching is mandatory in their curriculum. We have also discovered that the understandings of teachers are susceptible to change especially when teachers are presented with new knowledge. From the preceding review we can also see that in Zambia, the teachers understanding of grammar is that of transformational generative grammar. However, the studies reviewed did not tackle issues of how much knowledge teachers had of the same grammar. It is for this reason that the study sought to establish the teachers' declarative knowledge of grammar. This study also sought to establish whether teachers in Zambia being non-native speakers of English would have a better understanding of grammatical subject matter.

2.6 Beliefs of Teachers on how Grammar should be Taught

The following review examined studies that focused on the beliefs of teachers of on how grammar should be taught.

Deng and Lin (2016) did a comparative study of grammar teaching beliefs between teachers and students by employing a survey and interviews comprising of 35 English teachers and 400 students in China. They found that the teachers' beliefs were inclined towards communicative teaching while students' beliefs were characteristic of an integration of both communicative and traditional grammar teaching. They also concluded that the teaching behaviors of the teachers under study were basically in tandem with their teaching beliefs. This was seen in the fact that the beliefs they professed were depicted in their lessons. The current study sought to find out the characteristics of the teachers beliefs in the teaching of grammar in Luanshya district, especially that there was no study of that nature. Considering that the above researchers found that teachers practiced their professed beliefs in their classrooms, this study sought to establish whether English language teachers of Luanshya district also practiced the beliefs they professed. This is because it is not unusual for teachers to profess one thing and do another in their lessons.

However, Farrell (2005) in as much as he echoes the fact that teachers do indeed have a set of complex belief systems, he also found that sometimes these beliefs are not reflected in their classroom practices for various complicated reasons. Some reasons were directly linked to the context of teaching itself. It is for this reason that this study was undertaken to assess the contextual factors that may have led teachers not to enact the beliefs that they professed in their lessons.

Morina (2016) in a survey of 48 EFL teachers in Kosovo Russia discovered that teachers believed that grammar should be taught systematically and explicitly. However, it was not known whether English language teachers in Zambia believed in teaching grammar inductively or deductively. Therefore, this study desired to establish the grammar teaching beliefs that language teachers in Luanshya District held.

Graus and Coppen (2016) did a study on the beliefs of student teachers enrolled in undergraduate and postgraduate education programs. Data from the questionnaires administered revealed that respondents preferred form focused explicit instruction. However, senior undergraduates and post graduates were inclined towards meaning focused and implicit instruction. It is clear from the review that the higher the teachers went in educational attainment, the more they preferred meaning focused and implicit instruction. However, it was not known what form of instruction

teachers of language in Zambia preferred or whether advancement in education led to any change in their preference of instruction. It is for this reason that the current study examined the beliefs of language teachers in Luanshya District on the way grammar should be taught.

Ebbsworth and Schweers (1997) did a comparative study of teachers' attitudes about explicit instruction of grammar between teachers in Puerto Rico and New York. They found that, although all of the university ESL teachers they studied thought grammar should be taught, the New York- based ones were significantly less in favour of conscious grammar instruction than their Puerto Rico counterparts. The researchers attributed this phenomenon to the more traditional approach to language teaching usually adopted in Puerto Rico. As one of their informant stated, grammar learning had been such an important part of their learning experience, that they did not see any reason to abandon it. The researchers concluded that awareness of research plays a minimum role in determining second language teachers' approaches to use in grammar teaching. From the study under review we can see that the Puerto Rican teachers thought that grammar should be taught while the New York teachers thought that grammar should not be taught. Therefore, the current study endeavored to find out whether teachers in Zambia saw any value in conscious grammar instruction and also determined the role that second language acquisition research played in determining the approaches they used in grammar instruction.

In Zambia, Mwanza (2016) did a study to establish teachers' understanding and application of the eclectic approach to English grammar teaching. From a sample of 90 teachers and 18 lecturers that participated in this study, he found out that teachers believed that language was rule governed. Therefore, grammar teaching was form focused, explicit and rule explanation was predominant in English grammar lessons. However, this study did not address the factors that led the teachers to teach form focused, explicit and rule dominated grammar lessons. Therefore, the current study researched from a cognitive point of view the factors that led teachers in Zambia to teach form focused grammar lessons. Also, the study examined the teachers' experiences to ascertain where the grammar teaching beliefs were emanating from.

As can be seen from the literature reviewed, data collected across the board was not consistent concerning teachers' beliefs because beliefs are affected by different sociocultural variables. In

the literature reviewed, it was discovered that some of the beliefs that the teachers professed were not reflected in their teaching because of various contextual factors. It was discovered in the literature review that native speaker teachers were more in favor of implicit instruction than non-native speaker teachers. Also the higher the qualification the teachers had the more in favor they were of implicit instruction. It was for this reason the current study was undertaken in Zambia's Luanshya district to establish the beliefs of teachers regarding the teaching of grammar in the Zambian sociocultural context. This was due to the fact that there were no previous studies that had investigated teachers' beliefs and classroom practices in secondary schools in Zambia. There was need to establish the type of instruction the teachers of Luanshya district preferred and what sort of contextual factors they faced in their implementation of their teaching practices. This study also sought to ascertain whether there was any change in beliefs of those teachers who had furthered their education during the course of their teaching careers.

2.7 Beliefs of Teachers on how Grammar should be Tested

Research shows that teachers' beliefs of assessment affect their teaching and assessment practices as will be shown in the following literature reviewed.

Brown (2011) in his study on prospective teachers' conceptions of assessment established that prospective teachers had different patterns and effects in their conception about the nature and purpose of assessment than practicing teachers. Some of the views expressed by respondents in the study include; assessment improves student learning and teaching; assessment is ignored and is inaccurate, assessment is bad, assessment measures school quality validly, and assessment grades students. In a follow up study Brown (2012) states that the difference in response between prospective and practicing teachers may be as result of lack of experience for the prospective teachers. Therefore, the current study sought to find out the difference in the conception of grammar testing among teachers in Luanshya from the time they were student teachers up to the time they became practicing teachers. The study dwelt on how their conceptions of grammar testing were shaped and reshaped. Considering that much of the grammar testing is done in classrooms, it was imperative that the study established the teachers' conceptions of grammar assessment and how their conceptions of grammar testing shaped their assessment practices.

Shohamy and Poehner (2008) administered an online survey on assessment to study teachers' perceptions of assessment in advanced language programs and found that the teachers'

perceptions actually influenced the assessment formats they chose and how they chose to grade their students. While the study under review investigated assessment perceptions generally in foreign language classrooms, this study sought to study the assessment perceptions in the testing of grammar in English as a second language (ESL). Also, the study endeavored to establish how their assessment perceptions determined the sort of assessment formats they implemented in their classrooms.

However, the perceptions may not always be consistent with policy as shown in the following set of studies. Lee (2008) conducted a research by examining the written feedback provided by 26 Hong Kong secondary English teachers to 174 student texts, followed up by interviews with 6 of the teachers to find out the factors that have influenced their responding practices. Findings of the study indicate that teachers' written feedback occurred in single-draft classrooms and was primarily error-focused; contravening the principles recommended in local curriculum documents. She concluded that teachers' feedback practices were influenced by countless contextual factors that include the teachers' beliefs, values, understandings, and knowledge. These were mediated by the cultural and institutional contexts, such as philosophies about feedback and attitude to exams, and socio-political issues pertaining to power and teacher autonomy. The Zambian Senior secondary English syllabus recommends the use of communicative teaching including testing. However, it was not known how the teachers own cognitions were reproduced in the classroom. The cognitions of the teacher are very important in the implementation of the curriculum as a whole. This is why this study needed to establish the beliefs, values, understandings, and knowledge that influenced the assessment practices of language teachers in the testing of grammar in Luanshya district. The study also sought to establish to what extent the cultural and institutional contexts, such as philosophies about feedback and attitude to exams, and socio-political issues pertaining to power and teacher autonomy influenced the assessment choices teachers made in the process of teaching and testing of English grammar in Luanshya district.

Basturkmen et al (2004) also reports incongruences with regards to corrective practices whereby the teachers' classroom behaviour contradicted their stated belief that one should not interrupt students' oral output during communicative activities to correct unless errors impede intelligibility. The study under review discovered some incongruence in the corrective practices

of the teachers where their professed view of correcting was not practiced. It is for this reason that this study endeavored to establish any incongruences in the beliefs and actual assessment practices of teachers in the testing of grammar in Luanshya district.

Similarly, Ng and Farrell (2003) and Farrel and Lim (2005) found similar inconsistencies vis-à-vis error correction and other areas of grammar instruction and they put them down to the fact that teachers often have to adapt their beliefs to curricular and student needs and goals. Considering the above findings, the study from Bernstein's pedagogical discourses theory in view of recontextualisation studied how teachers adapted their beliefs to curricular as well as student needs and goals. For it is believed that teachers may have beliefs but the curricular and needs of students may determine how those beliefs are framed in the classroom.

In Zambia however, little is known about why teachers assess grammar in the ways they do. Also, little is known if discrepancies exist between teachers' assessment practices and recommended principles and the reasons that would account for any discrepancies. Nevertheless, in a study by Zulu (2016) and Zulu and Manchishi (2018) undertaken to establish whether or not teachers were using communicative testing techniques when preparing tests, it was revealed that teachers were not using communicative techniques because they were not familiar with communicative techniques. Zulu (2016) found that most teachers only tested linguistic competence and neglected communicative competence. He also found out that the tests were characteristic of multiple choice questions and composition was omitted from grade 10 and 11 classes and was only used sparingly at grade 12. However, this study did not address the cognitions that influence the decisions teachers make in their assessment practices. Also, Zulu's study studied language testing in general regardless of the components taught. His study has nothing on grammar teaching and testing neither was it in any way cognitively inclined. However, the current study was only focused on grammar teaching and testing and how the teachers' experiences and beliefs about grammar informed their grammar testing choices.

One can see from the review that teachers have different beliefs or conceptions about grammar testing, its nature and purpose. Also, the beliefs of teachers about grammar testing may not be practiced due to curricular and student needs and goals which in turn can reflect in inconsistencies between beliefs and practices. However, in the area of teacher cognition no study

in Zambia was found that examined the beliefs of teachers on the testing of grammar. Therefore, the current study strived to establish what teachers of English in Luanshya district thought was the nature and purpose of grammar testing and how those beliefs are reflected in their grammar testing practices.

2.8 Experiences of Teachers in the Teaching of Grammar

This part of the review examined studies that focused on the experiences of teachers in the teaching of grammar and how the experiences have shaped their subject matter cognitions. The studies in this section have been grouped into three categories; experiences of teachers as learners, experiences as trainee-teachers and experiences as in-service teachers.

2.8.1 Experiences of Teachers as Learners

Öztürk and Gürbüz (2017) in their study found out that the first factor that had an impact on the formation of the teachers' cognition was their very early language learning experiences. From the narrations of their subjects, it was clear that the teachers had constructed initial conceptualisations on how English should be taught or a good teacher should be based on their language learning habits and by observing their own teachers in the past. In line with numerous studies the impact of apprenticeship of observation and prior language learning experiences were noticeable in the formation of the teachers' cognition. However, there is no study in Zambia that has examined the effects of the teachers' prior language learning experiences.

Boyd, et al (2013) studied the impacts of the previous and current learning experiences of the student teachers on their microteaching practices. They used ex post facto research to scrutinize the previous learning experiences and teacher cognitions of the participants and phenomenographic research to specify their current performance in microteaching practices. From their findings they assumed that the previous learning experiences and teacher cognitions of the student teachers might have had some undesirable impacts on shaping their teaching perception. However, it was not known whether the experiences of language teachers in Luanshya district in the teaching of grammar had a positive or negative effect on their teaching.

Moodie (2016) conducted a narrative inquiry kind of study involving 18 in- service teachers. He used narrative frames and semi-structured interviews and found that participants' public school English learning experience served as anti- apprenticeship of observation because their public

school teachers provided models of what not to do as language teachers. This actually means teachers will avoid behaviours of their former teachers that they did not approve of. From the above reviewed study, it can be seen that the apprenticeship of observation can sometimes have negative effects especially if the teachers did not enjoy the teaching habits of their past teachers. Therefore, this study sought to establish the effects of prior language learning experiences on the teachers' current grammar teaching and testing practices. The study also examined the teaching habits that teachers adopted from their teachers in the past if any as well as the habits that they discarded. This study also desired to find out the experiences of the teachers that acted as anti-apprenticeship of observation in the teaching and testing of grammar among teachers of English language in Luanshya district.

2.8.2 Experiences of Teachers as Pre-service Teachers

Öztürk and Gürbüz (2017) conducted a qualitative study on language teacher cognition, classroom practices and institutional factors and found that even though the participants highlighted certain insufficiencies regarding their programs, the participants' frequent narrations regarding the several aspects of their pre-service education showed that it was at the centre of their teacher cognition. Besides, methodology courses in the program, teacher educators and the practicum experience were reported to be the most influential factors in this process. From the study reviewed above, it can be seen that most respondents cited pre-service education as the most influential aspect of their cognitions. Therefore, this study sought to find out the extent to which pre-service methodology courses, lecturers and teaching practice shaped the teacher cognition of teachers in Luanshya District in the teaching and testing of grammar.

Farrell (2006) examined the beliefs of three pre-service teachers in Singapore before, during and after the practicum experience with a purpose of making the already existing beliefs of pre-service teachers explicit through metaphor analysis. He collected the data via open-ended questions and journal entries. His study revealed several meaningful metaphors regarding the existing and changing beliefs of pre-service teachers on language teachers, language classrooms and language teaching. Farrell (2006:245) suggested that "language teacher education programs should therefore provide activities for pre-service teachers that can enable them to articulate their prior beliefs about teaching and learning."

In Kenya, Ong'ondo, (2009) conducted an interpretive qualitative case study involving seventeen participants – six student teachers, six teacher educators and five cooperating teachers. Data was elicited through semi-structured interviews, observations and analysis of relevant documents. The findings from his study generally show that the English language student teachers' practice was mainly focused on surviving the practicum and getting the desired grades to enable them graduate successfully. This meant that though they learnt some procedural pedagogical knowledge, they were not supported to develop pedagogical reasoning, which is supposed to be the main goal of Teaching Practice. Some of the issues that influenced teacher learning in this manner were: a weak link between coursework at university and practice in schools, the lack of a clear definition of the parameters of practice and inappropriate conceptualisation of support. However, his study did not explore the cognitions of the student teachers involved.

Manchishi and Mwanza (2013) conducted a study to establish the effectiveness of the University of Zambia school teaching experience. They used interview guides, observation checklists, and focus group discussions and included 80 serving teachers, 80 student teachers, and 10 head teachers drawn from 10 high schools in Lusaka District as respondents. In addition, 10 lecturers from the University of Zambia were also sampled. Findings from this study reveal that the design and delivery of the University of Zambia student teaching experience was not effective. For example, the six-week period means that student teachers had little time to do the actual teaching because they spend the first week observing the serving teachers. In another study Manchishi and Mwanza (2016) sought to establish whether or not, peer teaching was still a useful technique in introducing student teachers to practicalities of teaching. A qualitative method was used and 16 teacher educators and 40 final year students were interviewed. The study established that while peer teaching was useful, its implementation was faced with a lot of challenges and inconsistencies which made it less effective.

Therefore, it can be said that this was not enough time to discard their prior conceptions which are gained through thousands of hours in the apprenticeship of observation. This is because it is during the teaching practicum when pre-service teachers learn to teach by means of the personal experience they get in the field. Pre-service teachers' experiences in the schools also shape their conception about teaching and learning in school contexts, as well as their attitudes toward their work and the children they teach (Hodge et al. 2002 as cited by Manchishi and Mwanza, 2013).

However, these two studies did not address the cognition of the student teachers in order to ascertain whether their prior beliefs about language teaching (teaching and assessment of English grammar) had been impacted or influenced by peer teaching and the practicum at the University of Zambia. It was for this reason that this study sought to address the effect of teacher training programs on the cognition of language teachers in Luanshya district in the teaching and testing of English grammar by highlighting how the teacher cognition is formed and reformed.

2.8.3 Experiences of Teachers as In-service Teachers

Öztürk and Gürbüz (2017) examined foreign language (EFL) teachers' cognitions, their classroom practices and the impact of institutional context on these practices. The findings show that the learner profile, institutional factors including the organizational atmosphere, testing and curriculum policies, and the participants' improvisational teaching acts were the other factors shaping their practices. It was also understood from subjects' utterances that their previous institutional contexts had also important roles in their development as a teacher. It is for this reason that this study endeavored to establish the impact of institutional factors on the teaching practices of teachers of English in the teaching of grammar in Luanshya district more especially that no study had been done in this regard from a cognitive point of view.

In line with this, Burns (1996) also reported the noticeable impact of institutional elements on teachers' beliefs and practices. The studies yielded important findings on the role of previous institutional contexts on the teachers' professional growth. Walsh and Wyatt (2014,) state that a supportive environment helps. However, it was not known how supportive the teaching environment was for teachers in Luanshya district. Additionally, it was not known what role the particular schools the teachers were found in played in the teachers' professional growth especially in the shaping of their cognitions in the teaching and testing of grammar.

Jamalzadeh and Shahsavar (2014) did a study that used explanatory sequential design to investigate the effects of contextual factors on teachers' beliefs and practices. It measured the teachers' beliefs about language teaching context, teaching and learning of 30 teachers by administering a self-developed questionnaire and comparing the questionnaires to their teaching through class observations. On the contrary, the yielded results revealed that the contextual factors did not highly affect teachers' beliefs on language teaching. However, this study

endeavored to establish the extent to which the contextual factors affected and shaped the language teachers' cognitions in the teaching and testing of grammar.

In Zambia, Shwandi (2017) in a study to explore the experiences and challenges faced by teachers and pupils of large classes in selected secondary schools of Lusaka district of Zambia found out that teachers could not complete marking pupils' books and that there was too much noise and distractions in the large classes, a concern which was also echoed by the pupils. Therefore, teaching strategies employed by the teachers included the lecture and question and answer methods owing to large class size. However, her study only considered the experiences and the challenges the teachers faced regardless of the subject they taught. Therefore, this study desired to ascertain the extent to which the conditions teachers faced had an influence on the decisions teachers made in the teaching and assessment of English grammar from a cognitive standpoint.

The review has examined studies that focused on the experiences of teachers as learners, pre-service teachers as well as practicing teachers in their own unique contextual settings. It was established that the teachers own teaching practices are influenced by their teachers of English in the past, methodology courses as well as contextual factors. However, in Zambia no study was found that studied the above mentioned factors from a cognitive point of view. This is why this study was needed with paramount urgency in order to have insights into the experiences of teachers in the teaching and testing of English grammar and how best to support them.

2.9 Summary

In summary, this review aimed to examine teacher cognition on the teaching and testing of English grammar in secondary schools of Luanshya District in Zambia. Studies from the review indicate that teachers' cognitions which include understandings, beliefs and experiences vary depending on how the teacher was taught grammar, the teaching practicum and methodology courses as well as the actual teaching context in which the teachers are found. However, research on teacher cognition in the Zambian context seems to be scanty and close to non-existent hence, this study.

CHAPTER THREE

THEORETICAL FRAMEWORK

3.0 Overview

This study was framed and analysed through the lens of the complex dynamic systems theory and the code and pedagogical discourses theory. It is based on the premise that teacher cognition as well as language teaching and indeed grammar teaching is a complex dynamic system in which many factors are at play in the decisions teachers make in the classroom. The introduction of the code and pedagogical discourses theory sought to understand how the teachers use the factors at play to suit learner needs.

3.1 The Complex Dynamic Systems Theory

This study was firstly undergirded by the complex dynamic systems theory. This theory was engendered by Diane Larsen-Freeman's (1997) seminal paper on parallels in chaos complexity theory and the study of second language acquisition (Burns and Knox, 2011). According to Larsen-Freeman and Cameron (2008: 2) "A complex system is defined as one whose behaviour is not predictable in terms of a single dimension, or set of dimensions, but whose operation emerges from the interactions of its components." So in adopting a complexity approach this study recognises that the behaviour of a system cannot be predicted in a linear fashion (Larsen-Freeman and Cameron, 2008). This is because all the various components of a complex system are in continuous interaction, there is reciprocal causality (Weideman, 2010). Therefore, the Complex dynamic systems theory recognizes that no system is completely free of change because the many interacting components of systems each bring with them their own measure of instability and thus unpredictability. So, even small changes that are introduced into a system such as a teacher's cognition can certainly have dramatic effects. Effects that spread 'through the system, diluting the determinism and rendering the outcome of system activity unpredictable' (Larsen-Freeman and Cameron, 2008: 75). Hence, in studying teacher cognition we recognise that teacher cognition is a system that is susceptible to change because change occurs over time and under different influences. Thus, any change to their knowledge, understanding and experiences may alter their beliefs thereby influencing their instructional choices.

3.1.1 Characteristics of a Complex Dynamic System

Larsen- Freeman (2000) stressed the following as some of the basic features of dynamic systems; complete interconnectedness of subsystems, sensitive dependence on initial conditions, variation both in and among individuals and emergence of attractor states in development over time. This brought about new directions in thinking concerning the language teaching and learning process. The works of De Bot, et al (2005, 2007) stem from this direction.

According to De Bot, et al (2005) the complex dynamic systems theory investigates items in terms of their internal connectivity and external relations with their environment. This is what is called complete interconnectedness. This is a case where all variables are interrelated, and therefore changes in one variable will have an impact on all other variables that are part of the system (De Bot, et al, 2007).

Another characteristic of complex dynamic systems that this study embraced is that complex dynamic systems are nested. This means that every system is always part of another system, going from sub molecular particles to the universe, with the same dynamic principles operating at all levels. (De Bot, et al, 2007).

Also, some dynamic systems seem to be highly dependent on their initial state meaning that minor differences at the beginning may have dramatic consequences in the long run. This is called *the butterfly effect*, a term that was proposed by the meteorologist Lorenz, who wanted to account for the huge impact small local effects may have on global weather (De bot et al 2007). However, Regardless of their initial states, systems are constantly changing. They develop through interaction with their environment and through internal self-reorganisation. Because systems are constantly in flow, they will show variation, which makes them sensitive to specific input at a given point in time and some other input at another point in time (Weideman, 2009, De bot et al 2007). The studies cited above were primarily focused on second language acquisition as a complex dynamic system. However, this study posits that teacher cognition is also a complex dynamic system and it is related as follows;

3.1.2 Teacher Cognition has Internal Connectivity

Teacher cognition is a complex dynamic system because there's internal connectivity between understandings, beliefs and experiences. For instance, in teacher cognition, the beliefs,

understandings and experiences of language teachers are interrelated. These elements are not independent from each other but are facets of the same complex dynamic system. In the sense that change in experience can impact on beliefs because teacher cognition is also a complex dynamic system. This is why in many complex systems like teacher cognition, the outcome of development over time can therefore not be calculated exactly; not that there are no right tools to measure it, but because the variables that interact keep changing over time and the outcome of these interactions, cannot be solved analytically unless they take place in a very simple system (De Bot, et al, 2007, Verspoor, 2015). In short, teacher cognition is a dynamic system which is not static and changes due to changes in learning and experience.

3.1.3 Teacher Cognition is Nested

In the sense of teacher cognition this means that teacher cognition is interconnected with other larger macro-systems or smaller subsystems (Folke & Folke, 1992 as cited in Burns and Knox, 2011). For instance, classrooms are subsystems within a whole school system, which in turn is a subsystem of a state or national educational system. So when teaching and testing English grammar, teachers have to bear in mind what the curriculum and the syllabus stipulates and also what the student needs and goals are. Therefore, teacher cognition is nested within a larger school and educational system and its classroom manifestation is influenced and affected by surrounding factors or elements.

3.1.4 Teacher Cognition is Dependent on Initial States

What this means for teacher cognition is that teacher cognitions depend on the initial introduction to language teaching. Therefore, in the long run, the way the teacher will teach grammar may depend on how he/she learnt grammar. This is as espoused in the apprenticeship of observation theory (Lortie, 1975). However, regardless of the way the teacher learnt grammar, his cognition about grammar teaching and testing are constantly changing as they interact with methodology courses and the teaching environment which leads to constant internal reorganisation of what they believe and know about grammar teaching and testing.

3.1.5 Teacher Cognition is Context Sensitive

Teacher cognition is context situated or context sensitive in that the decisions that teachers make in the process of teaching and testing grammar have external relation to the environment in

which teachers are found. This study posits that the decisions that teachers make in the process of teaching and testing grammar are dependent on their own peculiar classroom contexts. Teachers' understandings of classrooms and their own actions are both context dependent and subject to continual reorganization in interaction with the environment (Borg, 2006). This is because essentially, classrooms themselves are complex and dynamic as well.

3.1.6 Teacher Cognition Varies in and Among Individuals

Complex systems have variation both in and among individuals. The cognitions of teachers in grammar can differ in one teacher and among teachers. For instance, the way a teacher may teach grammar in one class may not be the same way he will teach in the next class because the classroom makeup varies. Many factors play a role in the decisions the teachers will make. In short, as Verspoor (2015) states, teaching and learning is a dynamic process in which all relevant cognitive, physical, and social systems interact over time. The relationship described above is best depicted in the following table posited by Burns and Knox (2011) that they termed as the relational model. The following was used to map the complexity of teacher cognition in grammar teaching and testing.

Table 1: Typology of Factors Influencing Classroom Practices

Institutional	Pedagogical	Personal	Physical
<ul style="list-style-type: none"> ▪ Exam pressures ▪ Time tabling & time pressures ▪ Course aims and syllabus requirements ▪ Required materials ▪ Course focus on tertiary entry/ study ▪ Time available for preparation 	<ul style="list-style-type: none"> ▪ Previous lessons ▪ Student needs ▪ Student skills/ language ability ▪ Newness of student experience of tertiary study ▪ Online classroom decision making ▪ Teacher-student relationships ▪ Focus on the research project 	<ul style="list-style-type: none"> ▪ Language learning experiences ▪ Previous training as language teachers ▪ Previous teaching experience ▪ Existing practices ▪ Theories of learning ▪ Theories of learning ▪ Recent study/ current study ▪ Personal lives and relationships 	<ul style="list-style-type: none"> ▪ Heat ▪ Physical size and layout of classroom ▪ Changes of rooms ▪ Student movement in and out of class ▪ Presence of researcher in the classroom

(source: Burns and Knox, 2011 p.4) TESL-EJ 15.1 June 2011

The table above shows all the factors at play in the shaping of teacher cognition. It was used to interpret the findings of this study on teacher cognition in the teaching and testing of English grammar. The table was used to map the interrelatedness, fluidity and unpredictability of teacher cognitions. This is because pedagogical practices cannot be considered in isolation but all other factors at play should be put into consideration. Therefore, the factors in the relational model above helped this study to fully appreciate the nature and processes of teachers' beliefs, experiences, knowledge and attitudes.

In a nutshell, teacher cognitions are complex as they range over a number of different subjects. Teacher cognitions are dynamic as they change over time and under different influences. Finally, teacher cognitions are systems as they form unified and cohesive personal or practical theories (Feryok 2010).

This has implications for the teaching of grammar in language teacher education and how teachers' cognitions about grammar, and hence their own grammar teaching, might change (Svalberg, 2012). Grammar itself is a complex dynamic system as well because grammar is driven by user choices and therefore complex and dynamic as stated by (Svalberg, 2015). Thus, the study of teacher cognition in this study was primarily analysed using the complex dynamic systems theory.

3.2 The Code and Pedagogical Discourses Theory

In as much as the complex dynamic systems theory could operate as a single framework for this study, the code and pedagogical systems theory was introduced for more depth. The code and pedagogical systems approach was advanced by Bernstein (1973) and it states that classroom teaching does not take place in a vacuum but it describes the ways in which pedagogical patterns of action and interaction and the social roles of teacher and learner are both reflective and constitutive of the larger structure of the curriculum (Mwanza, 2016, Burns and Knox, 2011). This theory acknowledges the fact that classroom teaching is affected by several factors such as government through curriculum, syllabus, teacher training, national exams, school inspections, school administration and the context of the school as well as the learner's social cultural backgrounds along with informal knowledge (Mwanza, 2016). This is echoed by Guerriero (2017) who states that a study of teachers' decision-making shows that factors influencing

teachers' decisions include antecedent conditions such as students, the nature of the instructional task, the classroom, and the school environment, which combine with teachers' characteristics and cognitive processes to impact the pedagogical decision made.

This theory also considers the amount of control teachers possess over the selection, organization, pacing and timing of the knowledge transmitted in the pedagogical relationship (Bernstein, 1973b). This is what is referred to as framing. This study was especially concerned with how weak or strong the framing was in the teaching and testing of grammar as teachers interpreted the curriculum.

In the interpretation and implementation of the curriculum, all the above mentioned factors come into play as teachers make instructional choices in the teaching and testing of grammar as shown in the relational model advanced in the preceding theory. Teachers therefore have to recontextualise their prior knowledge for effective classroom practices.

3.2.1 Recontextualisation

Bernstein (1996) cited in Mwanza (2016:96) defines recontextualisation as follows; “recontextualisation refers to the rules or procedures by which educational knowledge is moved from one education site to another”. This study of teacher cognition gave insight into how teachers interpret what the curriculum states on the teaching and testing of English grammar in their own peculiar classroom contexts to accommodate their understandings, beliefs and experiences. Additionally, the study shed light on how teachers also accommodate the sociolinguistic backgrounds of learners in their classrooms. This was fully understood by drawing on what Bernstein (1999) termed as horizontal and vertical discourses.

3.2.2 Horizontal and Vertical Discourses

On the one hand, Bernstein (1999:159) defines horizontal discourse as “a form of knowledge, usually typified as every day or common sense knowledge. Common because all, potentially or actually have access to it...it is likely to be oral, local, context dependent and specific, tacit, multi-layered, and contradictory across but not within contexts...” while on the other hand, he defines vertical discourse as “A vertical discourse that takes the form of a coherent, explicit and systematically principled structure, hierarchically organised...or it takes the form of specialised languages with specialised modes of interrogation and specialised criteria for the production and

circulation of texts.” The vertical discourse may include the curriculum, syllabus, teacher training, national exams, school inspections, school administration while horizontal discourse includes the learners’ informal knowledge and their social cultural background. This study drew on horizontal and vertical discourses to ascertain how teachers reconciled their beliefs, experiences and knowledge with the curriculum and the demands of the education system while bearing in mind the sociolinguistic backgrounds and informal knowledge of their learners in the teaching and testing of grammar. The reason why the sample of the study included low density and high density schools to see a clear picture of the situation on the ground.

In conclusion, the study was analysed and framed using the complex dynamic systems theory and the code and pedagogical discourses theory because the two theories thoroughly complement each other. Teacher cognition is a complex dynamic system because there are many factors that influence the decisions teachers make in the classroom but also through recontextualisation they may reconcile their decisions with curricular as well as student needs and goals by drawing on horizontal and vertical discourses.

3.3 Summary

The chapter presented the theoretical frameworks. The complex dynamic systems theory and the code and pedagogical discourses theory were explained in order to show their contribution to the understanding of teacher cognition in this study.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.0 Overview

This section will present the methods that this study employed in data collection and analysis. It includes the research design, the target population from which the sample was drawn and the data collection procedure and analysis. In short, this chapter presents the whole strategy of the research, concerning choices made regarding the research design, sampling techniques, data collection techniques and data analysis techniques (Öztürk, 2015).

4.1 Research Design

According to Tromp and Kombo (2009) a research design is the structure of the research. The structure that this study employed is a qualitative descriptive research design. Qualitative descriptive research seeks to discover and understand a phenomenon, a process or perspectives and worldviews of the people involved (Caelli, et al, 2003). It is particularly relevant when information is required from those directly experiencing the phenomenon under investigation (Carmel, et al, 2017). The qualitative descriptive design allowed the researcher to adopt a judicious blend of methods of data collection in order that the information that emerged could be compared, contrasted and triangulated to provide thick descriptions of the context. This was done to allow for rich interpretations of the extent of convergence and divergence between what teachers believed and what they actually did (Bernard and Burns, 2012).

4.2 Target Population

White (2003) defines population as a universe of units from which the sample is to be drawn. The population that this study targeted was all the teachers of English language, all learners of English language and all secondary schools in Luanshya District on the Copperbelt province of Zambia.

4.3 Sample Size

A sample is defined as a segment of the population that is selected for Investigation (Bryman, 2004). Therefore, the sample size of this study included 6 schools from Luanshya District. The schools consisted of 2 from the low density areas of Luanshya, 2 from the medium density areas of Luanshya and 2 from the high density areas of Luanshya. Twelve (12) teachers of English

language, two (2) from each school were considered for oral interviews and lesson observation. Learners were considered for observation and document analysis. In the document analysis the learners' exercise books were analysed.

4.5 Sampling Techniques

The sampling techniques that this study utilised included expert purposive sampling and convenience sampling. Expert purposive sampling is defined as an intentional selection of informants based on their ability to elucidate a specific theme, concept or phenomenon (Robinson, 2014). On the other hand, convenience sampling is defined as a method of collecting samples that are conveniently located around a location (Edgar and Manz, 2017). Purposive sampling was used to come up with twelve participant teachers and six schools while convenience sampling was used for the district. For the respondents, the researcher purposefully selected English language teachers because they had the necessary information required for this study. This is because in qualitative inquiry, the main goal of sampling is to find individuals who can provide rich and varied insights into the phenomenon under investigation so as to maximize what we can learn (Dörnyei, 2007). The schools were purposively sampled because the researcher wanted to include schools that were based in the low, medium and high density areas of Luanshya District. Lastly, the district was conveniently sampled because it was easily accessible to the researcher.

4.6 Research Instruments

Research instruments are tools or guides that the researcher uses to collect data (Mkandawire, 2019). This study utilised semi-structured interview guides, observation schedules, audio recorder and document analysis guides.

- I. **Interview guides:** interview guides were used to interview teachers. The interviews were employed to establish their understanding, beliefs and experiences in grammar teaching and testing.
- II. **Observation schedules:** The researcher employed observation schedules to observe the teachers and pupils during lessons in their particular classrooms. This was to see if their professed beliefs and views were reflected in their lessons. As Corbin & Strauss (2008) noted, it is not unusual for persons to say they are doing one thing, but in reality they are

doing something else. Moreover, this study did not seek to study what or how teachers think in isolation of what they do' (Borg, 2003). This is so because teacher cognition is observable through classroom action and choice.

- III. **Audio recorder:** The audio recorder was used to come up with audio records of the lessons observed for data analysis. It was also used to record all the face to face interviews done.
- IV. **Document analysis guide:** The researcher used the document analysis guide to analyse the lesson plans to see if they adhered to the teachers' stated understanding, beliefs and experiences concerning the teaching and testing of English grammar. The document analysis was also used to analyse the pupils' books to see how teachers marked pupils' grammar tasks and identify how teacher cognition informed their assessment and marking.

4.7 Data Collection Procedure

The data collection procedure spanned a period of 12 weeks. Firstly, permission was sought from the District Education Board secretary's (DEBS) office for the researcher to conduct research in the respective schools under his jurisdiction. Actual data collection began with interviews with the teachers with the teachers to elicit their understanding, beliefs and experiences in grammar teaching and testing. Thereafter, class observations were conducted in a naturalistic way in order to ascertain the extent to which their understanding, beliefs and experiences were reflected in their lessons. Class observations were done in a naturalistic way because according to Mwanza (2012) naturalistic observations allow for collection of authentic data. The researcher took observation notes for analysis and clarification while the lessons went on. The lessons were also audio recorded for further analysis. Lesson plans and pupils' exercise books were collected for further document analysis. Since the researcher was not collecting the lesson plans and pupils' books for a long time, portions of the pupils' exercise books and the lesson plans were photocopied for further analysis.

4.8 Data Analysis

The data collected was analysed qualitatively using thematic analysis. According to Patton and Cochran (2002:23) "thematic analysis is one that looks across all the data to identify the common issues that recur, and identify the main themes that summarise all the views you have collected."

Therefore, data collected from the interviews, observations and documents analysis was categorised and analysed under the identified themes. The data was gathered and put into identified themes and categories after which interpretations and discussions were made. In the case of this study, the identified themes were the research objectives under which any of the data fell. Data was also analysed based on the complex dynamic systems theory that supports the view that teacher cognition is a complex dynamic system. This was also supported by the use of recontextualisation as advanced in Bernstein's code and pedagogical discourses theory.

4.9 Trustworthiness

Issues of validity and reliability in qualitative studies were referred to as trustworthiness by Lincoln and Guba (1985) and they proposed several procedures to ensure trustworthiness. Some of the procedures posited by Lincoln and Guba (1985) as cited in Noble and Smith (2015) were employed to ensure rigor and enhance the credibility of the findings. The study used triangulation which is the use of multiple sources of data to come up with the findings. Secondly, the researcher also asked the respondents to review and comment on the transcriptions, observation records and analysis of their own cases. Lastly, the study included rich and thick verbatim descriptions of respondents' accounts to support the findings.

4.10 Ethical Consideration

Ethical issues were put into consideration. The researcher firstly acquired ethical clearance from the University of Zambia through the Directorate of Research and Graduate Studies Ethics Committee. Thereafter, permission was sought from the District Education Board Secretary in Luanshya District to allow the researcher conduct research in the selected schools. Furthermore, permission was obtained from the heads of particular schools in order for the researcher to conduct research. The researcher also got informed consent from the participants after explaining to them the nature of the research. Additionally, the participants were kept anonymous and the data collected was kept strictly confidential. It was only used for purposes as stated in the purpose of the study.

4.11 Summary

This chapter presented the research design, target population, sample size, sampling techniques, research instruments, data collection procedure, data analysis and ethical considerations. The next chapter presents the findings of the study.

CHAPTER FIVE

FINDINGS OF THE STUDY

5.0 Overview

This chapter presents the findings of the study. It begins by giving background information of the participants involved in the study. After that, the data on each research question is presented. As earlier stated, the purpose of this study was to examine how teacher cognition influenced how teachers of English understood, taught and tested English grammar. The study addressed the following research questions; how do teachers understand grammar? What are the beliefs of teachers on how grammar should be taught? What are the beliefs of teachers on how grammar should be tested? How do the experiences of teachers affect the teaching and testing of grammar? Data for all the research questions was collected qualitatively using interviews, document analysis and class observations.

5.1 Background Information of the Participants

A total of twelve class teachers took part in this study. Out of this number, seven were male while five were female. Also, seven were bachelor's degree holders while five were diploma holders. Out of the seven degree holders, six were from public universities while one was from a private university. As for the diploma holders three were from teacher training colleges and two were from a public university. In terms of teaching experience, the experience of teachers was classified into various period brackets. Two out of the twelve teachers indicated that they had been teaching for over fifteen years. One indicated that he had been teaching for the period between ten to fifteen years while five indicated that they had been teaching for the period between six to ten years. Lastly, four indicated that they had been teaching for the period between one to five years.

5.2 How Do Teachers Understand Grammar?

To answer this question, the researcher used interviews. The majority of the teachers stated that grammar meant the rules of the language. The teachers stated that grammar meant the correct application of the grammatical rules of the language. They emphasised that the placement of words in sentences must be rule based in order to be correct when using the language. Here are some of the responses:

T2: To me grammar means language rules, the placement of words must be rule based.

T6: It has to do with the rules of the language, basically that.

While another group said grammar meant proper sentence structuring or the way words come out. This group of teachers felt that if a person can construct a grammatically correct sentence then they know grammar. They stated that it had to do with correct sentence formation. Here is what the teachers had to say:

T1: I would summarise it as proper sentence construction.

T5: Implies vocabulary, correct sentence formation and usage

The last two teachers stated that grammar was language itself. They felt that grammar had to do with all aspects of language such as the rules of the language, the pronunciation of words and the use of tenses. Here is what they said:

T10: Grammar is language itself.

T11: Grammar is language itself, the language rules, pronunciation of words and the use of tenses.

Then the teachers were asked to express their views on what they considered to be the most important aspects of grammar to teach. The responses to this question fell into two categories. There were those teachers who generally stated that learners needed to know the grammatical rules of the English language and they leaned towards being correct. For instance, T1 and T5 had the following to say:

T1: I think for me, it's the rules. Learners should learn the grammatical rules because knowing the rules will help learners know how to use the particular grammar items.

T5: Learners should understand the rules, understand patterns, that each rule has a specific pattern peculiar to the rule and also understand the modifications because without rules the person may jumble and misplace, misuse and abuse the language.

In addition, there were those who mentioned specific aspects of grammar that they felt more important to teach. One of the aspects that was prominent in the responses was the aspect of vocabulary. The teachers said that learners needed to learn specialized vocabulary. They said that the learners needed to be able to classify words and use them to combine sentences. They also said that learners needed to know how to use adjectives and adverbs in order to add emphasis to what they were saying and so on. Here are some responses:

T2: *Children should learn specialised vocabulary. Every area of life is a unique entity with its own language. The child who uses specialised grammar will be considered as someone who has mastered the language. For example, doctor can refer to gynecologist, neurologist.*

T3: *The learners should know how to classify words and also how they combine to form sentences.*

Apart from vocabulary, the respondents emphasised the importance of writing conventions. Writing conventions in this case referred to all the rubrics of standard writing. The teachers felt that when teaching grammar, the learners needed to learn how to punctuate sentences properly, write correct spellings of words, construct proper sentences, use proper word order, use correct writing especially in letter formation and have a neat general layout. Here are some of the responses they gave:

T7: *Generally, they should write correct spellings, construct proper sentences, punctuate properly because usually when teaching English we consider everything, sentences will be wrong based on spellings, punctuations, sentence construction and word order.*

T2: *Spellings, dotting, punctuation, letter formation- avoid wrong forms of letters when writing alphabetic symbols (handwriting), agreement of subjects and verbs for cohesion and coherence and finally the use of language to be correct and appropriate.*

T9: *Structure of the sentence should follow the conventions taught. Then the spellings and handwriting. I'm very*

Other respondents stated that it was important for them to teach tenses to the learners. They stated that learners needed to know the tenses and the reason was that tenses were the foundation of language. For instance, T3 went to the extent of treating rules and tenses as synonymous terms. Here is what the teachers had to say:

T3: *They should also know the tenses because in any language the native speakers determine whether somebody knows the language by how well they know the rules.*

T10: *They have to know to use words, proper construction of sentences and differentiating the tenses. Tenses are the foundation of the language.*

The findings show that the teachers understood grammar to mean the rules of the language, proper sentence structuring and specialized vocabulary. Consequently, they stated that the most important aspects of grammar to teach were the rules of the language and some particular aspects

such as tenses, vocabulary and all the rubrics of standard writing which they felt were the foundation of any language.

5.3.0 What are the Teachers' Beliefs on how Grammar should be Taught?

The second objective was to analyse teachers' beliefs about how grammar should be taught. To answer this research question, the researcher used face to face interviews and lesson observation. Questions were asked in the interviews in order to seek the teachers' beliefs about how grammar should be taught

5.3.1 Teachers' Beliefs on How Grammar Should Be Taught: Interview Data

Firstly, the respondents were asked to describe a typical lesson involving grammar and the majority of the teachers described a similar progression for grammar lessons where the teacher begins the lesson with a situation or brainstorm, introduces the topic, gives examples, explains the rules and gives exercise both oral and written. Here are some examples from some of the teachers' responses:

T1:

I do not say the topic of the lesson but I give them a situation. From the situation I elicit sentences from the learners in which the grammar item I want to teach is. For instance, what is it that you are doing right now. They give a sentence like 'we are learning'

Then after I state the structure they are going to learn and briefly explain the rule. Just explain to them that what they are doing is this.

Then I usually divide the class into groups, they like it and I also like it and give them specific instructions based on the rule they've been taught.

After the discussion the learners present their answers to the class in order to cultivate their confidence in speaking English.

Lastly, they write individual exercise

T5:

Use a real situation- even using something that occurs right there and then.

Introduce the topic of the day

State the rules and use

Ask the learners to do oral practice so they can create own situations and form own sentences.

State and clear the changes that occur.

I tell them "ichisungu bali pwisha ukupanga" you can't form your own rules.

Written exercise and go around marking.

T3:

A typical lesson would begin with the teacher writing sentences on the board that have the grammatical structure to be learnt. From the sentences the teacher defines grammatical terms in question.

The teacher then asks if there are any learners who can orally construct some sentences using the same grammatical structure.

Then the teacher explains the rules of that grammatical structure.

Teacher asks learners to further construct more sentences orally using the same structure.

Then the teacher will give rewrites for written practice. "Rewrites help me to see how far they can demonstrate their understanding of the grammatical structure."

T 11

I tell a story

Write on the board the topic.

Introduce the rules

Give examples, learners come to the board to write their own examples.

Find questions from the prescribed books write on the board and let them write in their books and then mark.

After they had described a typical lesson involving grammar, the researcher went further to ask for their views regarding error correction. From the responses recorded, there was a consensus among teachers that oral errors must be corrected immediately and often because of the need for learners to be corrected when using the language. The teachers explained that it was their duty to correct the errors because learners came to school to learn. Here are some of the responses:

T1: I correct them because they won't learn if I ignore, it is me to correct as it is my duty. Other teachers even use local languages, so they just have me.

T5: I correct right there and then and talk about their errors. It's an uphill battle to correct oral grammar- I'll be shooting down mistakes every day.

T6: I correct oral errors myself and written through marking...because they are here to learn, they need to have the correct knowledge.

Actually T3 felt that language learning was habit formation so the learners had to be corrected immediately and often. Here is what he had to say:

T3: I use learners to correct each other but in cases of mispronunciation I correct them myself there and then because language learning is habit formation.

The teachers were asked to state which grammar teaching techniques they used most of the time. Teacher exposition, question and answer, group discussions and drills were among the commonly cited grammar teaching techniques the teachers used. Here are some of the responses;

T6: Teacher exposition, I enjoy using pair work and also group discussions depending on the topic.

T7: Usually class discussion, question and answer, sometimes I use group work, though it consumes a lot of time, teacher exposition to explain the rules.

T8: two methods, question and answer and teacher exposition

T9: Question and answer and discussion.

T10: Teacher exposition, question and answer, question, pose and nominate, group work, class demonstrations

T11: Group work and discussions, drills and strict use of English.

Based on the findings most teachers believed that grammar should be taught following a certain order. They also explained that learners' errors needed to be corrected immediately and not ignored. Also, the most cited grammar teaching practices of the teachers included; teacher exposition, question and answer, group discussions and drills.

5.3.2 Teachers' Beliefs on how grammar should be Taught: Lesson Observation Data

During lesson observation, grammar lessons were observed from the beginning to the end and they were analysed to determine whether the teachers practiced their stated beliefs about how grammar should be taught. In total, six lessons were observed to ensure non-biased conclusions on the teachers' beliefs about grammar teaching. During the observations, the researcher listened and made notes following the observation schedule designed for the same purpose. From the six lessons observed, three were chosen for presentation as each one represented the categories of schools chosen for the study.

SCHOOL 1

Lesson Description 1 on the Conditional Tense

The school is an all-boys school located in a low density area. The teacher is a male and holds a teacher's diploma. He has been teaching English for twenty-one years. The class is a Grade 10

class and it consists of 45 learners. The teacher has a lesson plan. The aim of the lesson was to teach the conditional tense using ‘whether’ and ‘if’ interchangeably and independently.

The teacher asks the learners if they have ever heard people say ‘if’ to say things. And the learners say yes. Then the teacher tells the learners to construct any sentence using ‘if’. The learners construct oral sentences using ‘if’. Here are some of the learners’ responses:

- 1. If we train hard, we shall win.*
- 2. If I come, I will kill you.*

The teacher then tells the learners that they are speaking conditionally. Then again the teacher asks the learners if they have ever heard anyone use the word ‘whether’ and asks the learners to construct sentences using ‘whether.’ For any wrong sentences he looks for another learner to reconstruct the sentence correctly. Here are examples from the learners:

- 1. Whether you like it or not I’ll eat your chicken.*
- 2. Whether you like it or not today at break time I will beat you.*

He tells the learners that they are still speaking conditionally. He then introduces the topic and writes conditional tense on the board. He then writes more examples on the board using whether. For example:

- 1. Bupe asked whether we are married.*

He then asks the learners if the word ‘if’ can be used to rewrite the sentence and the learners say yes. Here is the response;

Bupe asked if we are married.

The teacher then explains that this is one of those rare moments where the words can be used interchangeably. He gives another example on the board to see if both ‘whether’ and ‘if’ can best complete the sentence or if both can apply.

- 1. --- Nandi goes to South Africa she’ll buy me a laptop.*

A learner says ‘if’ the teacher asks the class “Do you agree with him?” the class says “yes.”

The teacher explains that it is only some of the times that ‘if’ and ‘whether’ are interchangeable. He writes more notes on the board and tells the learners to be fast when coping. He writes the use of whether on the board as follows; Whether can be used when someone doesn’t know which of the two possibilities is true. For example;

- 1. There is some doubt as to whether the illness is contagious.*

Teacher asks what is the meaning of the word contagious... learner says a disease that can easily spread... teacher tells class that it is synonymous to ‘infectious’

- 2. She doesn’t know whether her daughter is dead or alive.*

The teacher further goes on to state the second rule of use which he writes on the board with examples and it states; ‘Whether’ can also be used to say it doesn’t matter because the situation will remain the same. He gives the following examples;

- 1. Whether or not Seer1 has the power to change nature is immaterial.*
- 2. The journey whether by road or rail takes three hours.*

Teacher tells the class that now they are about to move into a deeper understanding of specific sentence construction that requires the use of whether.

Rule #1

Use ‘whether’ not ‘if’ before an infinitive.

The teacher asks, “What is an infinitive?” The class choruses, “to” he gives the following example:

- 1. She can’t decide whether to marry him*

Rule # 2

Use ‘whether’ not ‘if’ after a preposition.

- 1. There are doubts about whether the power cuts are a result of low water levels in our dams.*

To conclude he makes the learners recite all the rules taught. He called them the hard and fast rules. He then gives a class exercise where the learners fill in the blanks with either ‘if’ or ‘whether’ and also learners complete sentences. Then the teacher goes round marking the books.

SCHOOL 2

Lesson Description 2 on the Future Simple Tense

The school is located in a high density area. The teacher is a female and holds a Bachelor’s degree. She has been teaching English for five years. It is a new Grade 8 class created in the sixth week of the term due to high demand for school places and it consists of 45 learners. The teacher has a lesson plan. The aim of the lesson was to teach the future simple tense using ‘going to’

The teacher begins the lesson by saying ‘I am going to Lusaka on Friday.’ She then asks the learners, “what did I say?” and the learners in chorus respond, “You are going to Lusaka on Friday.”

The teacher then asks the learners if she has already gone and the learners say no. she then explains that that was an example of the future simple tense because the action has not yet happened but is expected to happen at a later time and she writes the topic on the board.

This is followed by rule explanation. The teacher tells the learners that the future simple tense can be expressed by using 'going to.' She explains that it is used to express an action that hasn't happened yet but is expected to happen at a later time.

The teacher then starts writing notes on the board on the future simple tense and writes the examples from the book as well. Then she explains that it is used to express what has already been decided. After this the teacher continues for about five minutes writing notes on the board for learners to copy and there is silence in the room the whole time. The learners copy down the notes into their exercise books.

The teacher again emphasises that the future simple tense is used for an action that has not yet happened using 'going to'. The teacher then draws the learners' attention to the examples she's written on the board. She reads every example one by one as she asks the learners to state the meaning of each sentence. For example;

1. He is going to finish the book tonight.

Can someone explain the meaning of the sentence? The learners state that he hasn't finished reading the book

2. I am going to be a farmer when I grow up.

"Is he already a farmer?" the teacher asks. The learners say no and then she asks, "When is he going to be?" The learners respond, "when he grows up" and she explains that that is at a later time.

She says that there are some rules that they should follow when constructing sentences such as positive and negative forms of sentences as well as when using singular pronouns and plural pronouns. She explains and comes up with examples with the help of a table.

For practice, the teacher writes a list of words in a table from which learners construct sentences. The learners discuss in pairs and construct sentences using the table and they write them at the back of their books. She tells the pairs to present the answers and she explains that the whole class will determine whether the sentences are correct. Here are some examples;

1. I am going to school.

She asks the class if it's correct and the learners say yes. But the teacher to get them to the correct answer asks when he is going, the class says now. She asks if that is future they say no and they conclude that the sentence is wrong.

2. You are going to Ndola on Monday.

3. It is going to Lusaka yesterday.

Teacher asks are they correct the class says no with doubts and one learner explains that yesterday makes it wrong

4. We are not going to play football today.

5. They are going to the wedding on Saturday.

And for the exercise, the teacher writes pronouns on the board for learners to construct five sentences in the future simple tense individually in their books and then the teacher goes around marking

SCHOOL 3

Lesson Description 3 on Determiners ‘much’ and ‘many’

The school is located in a medium density area. The teacher is a male and holds a Bachelor’s degree. He has been teaching English for nine years. It is a grade 10 class with 62 learners. The teacher has no lesson plan.

The teacher introduces the lesson by talking about nouns in general as he leads them to the aspect of countable and uncountable nouns. He does this to bring them down to the topic on determiners and he writes the topic on the board.

He lets the learners come up with the rule for using much and many. The learners state that many is used for countable nouns and much for uncountable nouns. The learners construct many more oral examples which he writes on the board such as the following:

- 1. There are many cars in town.*
- 2. There are many pupils in this class.*
- 3. There are much oil in these vegetables.*

The teacher asks if sentence 3 is correct and the class says no. They explain that it is wrong to use ‘are’ for oil.

For oral practice, the learners construct two sentences in pairs which they present to the class and the participation is overwhelming. The environment in the class is so liberal during the class discussions. The learners freely ask question as in the following exchange:

Girl: *Teacher, would you define determiner?*

TI: *(silence)*

Girl: *Teacher, please define determiner for me.*

TI: *(silence)*

Girl: *Teacher, determiner, definition please?*

TI: *No, just write. Definitions will confuse you.*

During the class discussions, the learners present their answers and the teacher writes the answers on the board. For example:

- 1. Many of the teachers at this school are corrupt.*
- 2. There is much juice in the bottle.*

Then the fellow learners discuss whether the answers are correct or not. Errors are corrected immediately by peers and emphasised by the teacher. For instance, one pair presents the following answer:

There are much oil in the soup.

The class says the answer is wrong and the teacher explains that subject verb agreement is required for uncountable nouns. The teacher says that you only use 'are' when talking about countable nouns

Another pair gives the following example:

'There are many tears,'

The teacher asks; "Can we count tears?" The class says no in unison and the teacher explains that however one can count drops of tears but not tears. The teacher explains the use of units to count uncountable nouns such as 'drops of tears,' 'glasses of water' and so on.

After this, the teacher gives a written exercise where the learners fill in the gaps with either much or many. After marking the teacher discusses the answers with the class.

The findings show that the teachers followed a particular order when teaching grammar. The teachers taught grammar in isolation. The emphasis of the teachers was expounding the grammatical rules using grammatical terms freely. They corrected errors immediately mostly by using the peers.

5.4 What are Teachers' Beliefs on how Grammar should be Tested?

Teaching and testing are closely interrelated that this study could not be complete by just considering the teaching of grammar alone. This is because developments in language teaching theories and approaches also influence language testing. Therefore, the respondents in the study were interviewed, observed and their documents analysed to understand their beliefs on how grammar should be tested. The documents analysed included the lesson plans and the learners' exercise books. The lesson plans were analysed to appreciate the assessment formats teachers used and the learners' exercise books were analysed to ascertain the grammar testing practices of teachers.

5.4.1 Teachers' Beliefs on how Grammar should be Tested: Interview Data

It was discovered from the responses that the teachers' prominent ways of assessing grammar was in written form. The respondents said that they gave learners fill in the gap exercises, complete the sentence exercises and transformations from the prescribed books they used. This can be seen in the following responses:

T7: After the lesson I give exercise, mostly I follow the ones in the books; rewrites and fill in the blanks from the books.

T6: Through written and oral exercises; constructing oral sentences, fill in the blanks and transformations.

T2: I give exercises in class, testing the use of items of grammar, fill in the blanks, completing the sentences, spellings, and picking out the correct words.

After stating the ways in which they tested grammar, the respondents were asked as to whether they knew any other ways of testing grammar apart from the ones they mentioned. Out of the twelve teachers interviewed, six indicated that they also tested grammar through oral exercises. Here are some examples from T3 and T7:

T3: By giving oral examinations using oral questioning.

T7: Ask them to construct oral sentences using the words I give them.

Furthermore, two other respondents indicated that they used composition to test grammar although they rarely used it because of the number of learners in their classes. Consider the following responses:

T1: Using composition but I rarely give compositions because the learners are too many and they also use structures you have not taught them, it's a lot of work.

T3: Also the use of composition lets you know how well learners can construct sentences given freedom to write.

Another teacher suggested that it was also okay to ask another teacher to assess on her behalf. This is what she had to say:

T11: Asking another teacher to assess them for you.

After that the respondents were asked what they considered to be the most important things when marking grammar. Most responses pointed towards the importance of rule application. There was a consensus among the teachers that rules must be followed. For instance, for T1 and T7 even stated the content didn't even matter whether appropriate or not as long as the rules were adhered to. Here are some of the responses:

T1: The rules they have been taught have to be adhered to. Regardless of the content as long as the rule is correct, I mark correct.

T7: First and foremost, if they applied the rules I was teaching them... As long as they followed what I taught I'll mark it correct and insert the punctuations they missed.

Another common feature was that teachers also considered how well the learners adhered to the conventions of standard writing when marking grammar. They stated that spellings, punctuations and the general layout of the work really mattered. Here are some responses;

T2: Spellings, dotting, punctuation, correct forms of letters when writing alphabetic symbols

T3: I consider punctuations, capitalization, and grammatical correctness including spellings. Also, the general preparation of work.

T9: ...then the spellings and handwriting. I'm very particular with letter shaping, handwriting; children have problems with letter shaping.

The findings show that the teachers tested grammar by using fill in the blank exercises, complete the sentence exercises and transformations that were provided in the prescribed books they were using. However, there were some who said they tested using compositions but did it sparingly because their classes were big. When marking, the teachers stated that they mostly considered how well the sentences adhered to the grammatical rule taught and after that they also considered all the rubrics of standard writing.

5.4.2 Teachers' Beliefs on how Grammar should be Tested: Document Analysis

During lesson observations, the researcher observed that the most prevalent grammar assessments the teachers used were complete the sentence exercises, fill in the blanks exercises and transformations. Here are some extracts from the learners' exercise books:

Figure 5.1: T2- Here learners were only required to complete the sentences using 'whether'

e.g. There are doubts about whether the power cuts are a result of low water levels in our ~~dams~~ dams.

EXERCISE

① ~~Whether or not~~ I shall fall during the run is immaterial.

② The question is ~~whether~~ ^{or not} the thugs who disrupted the meeting were sponsored.

③ The question is ~~whether~~ ^{or not} the thugs who disrupted the meeting were sponsored.

Source: Field data, 2020- Image captured by author

Figure 5.2: T3-The learners were required to complete the sentences using 'but for'

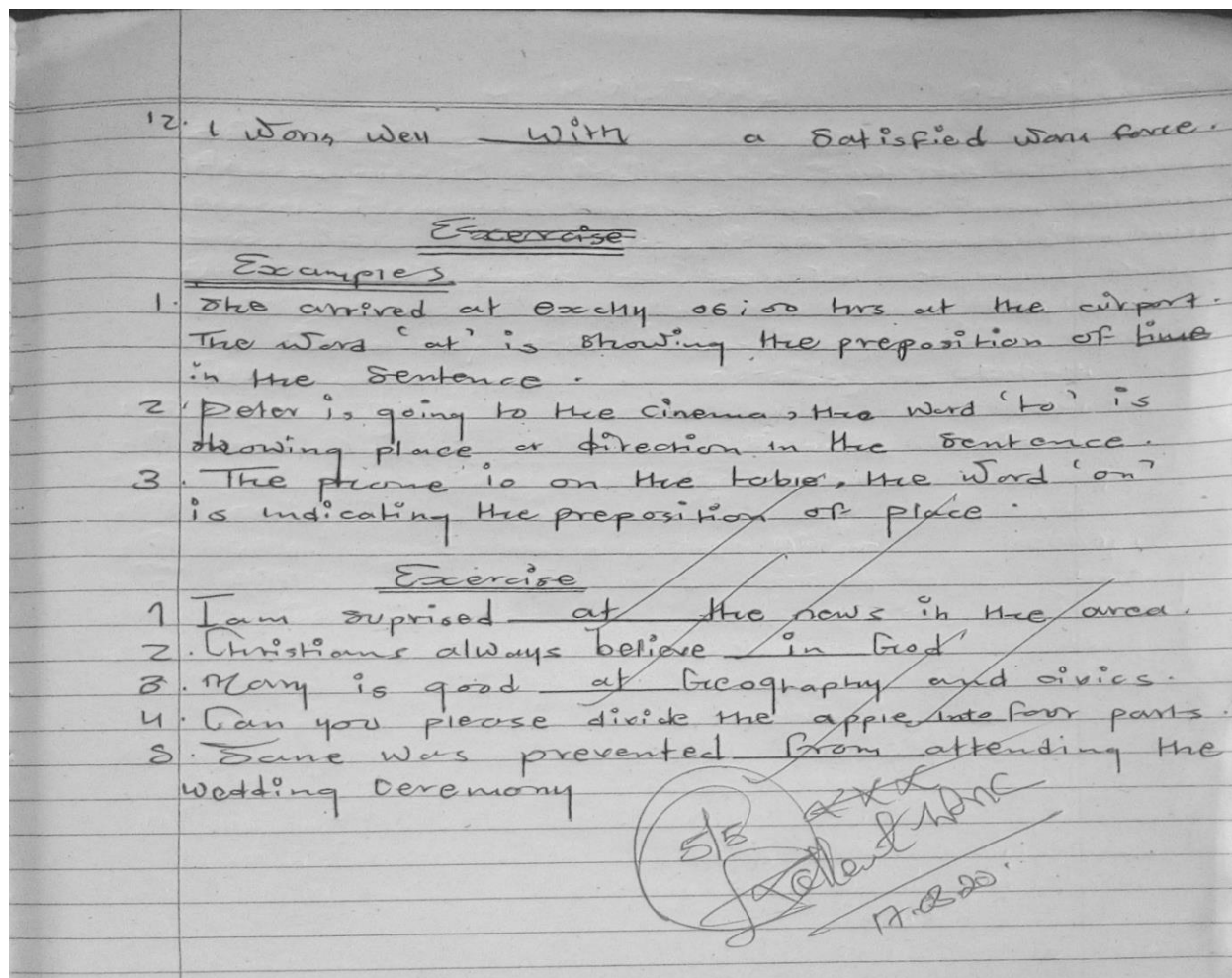
Date: / /

4 Mrs Nkonde would have been rich but for.
→ Mrs Nkonde would have been rich but for her business ~~start~~ suffering drastic ~~loss~~ losses.

5 Inutu would have gone to the U.K to study archeology but for...
→ Inutu would have gone to the U.K to stud archeology but for ~~her~~ ~~her~~ failing the ent examination.

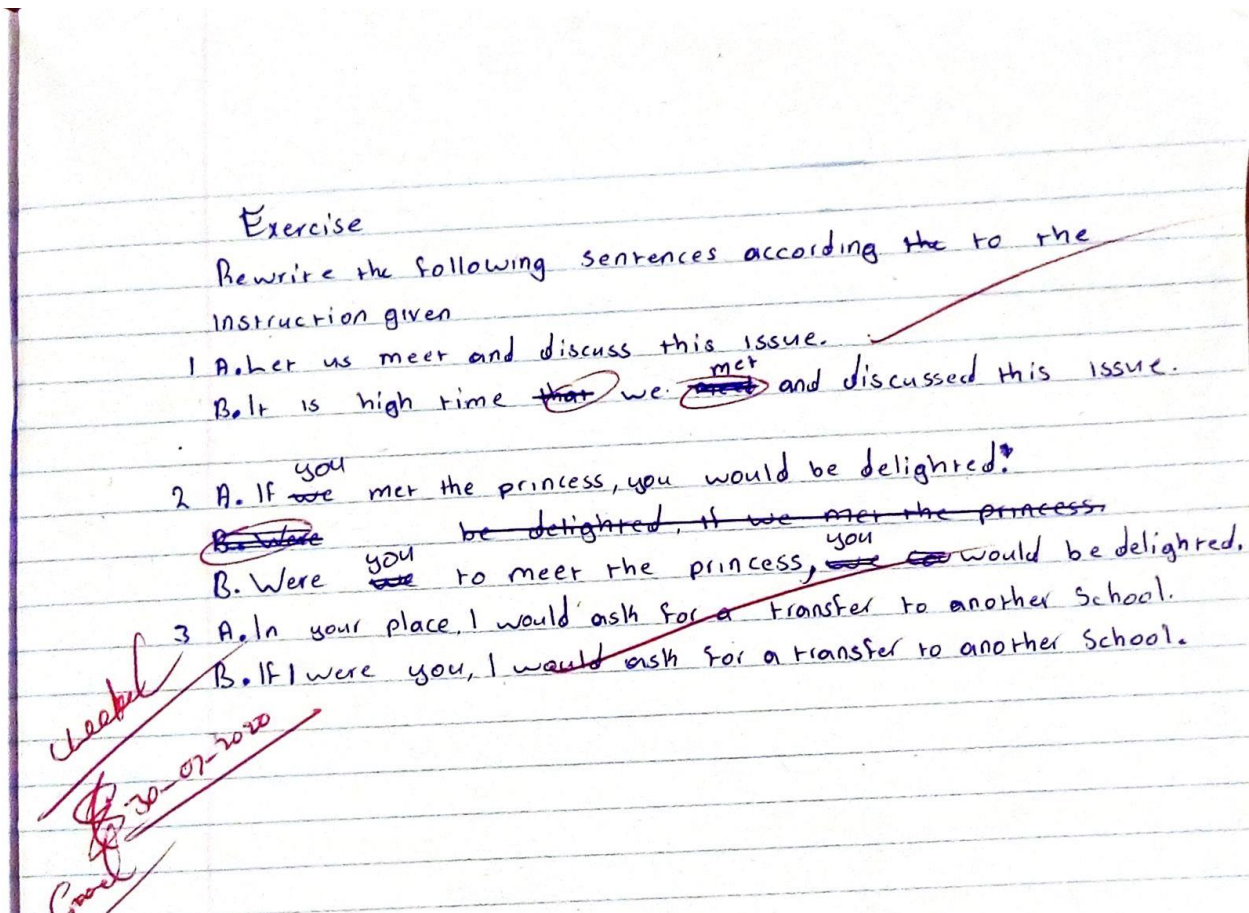
Source: Field data, 2020- Image captured by author

Figure 5.3: T4- Here T4 gave the learners a fill in the gap exercise to fill in with the necessary preposition



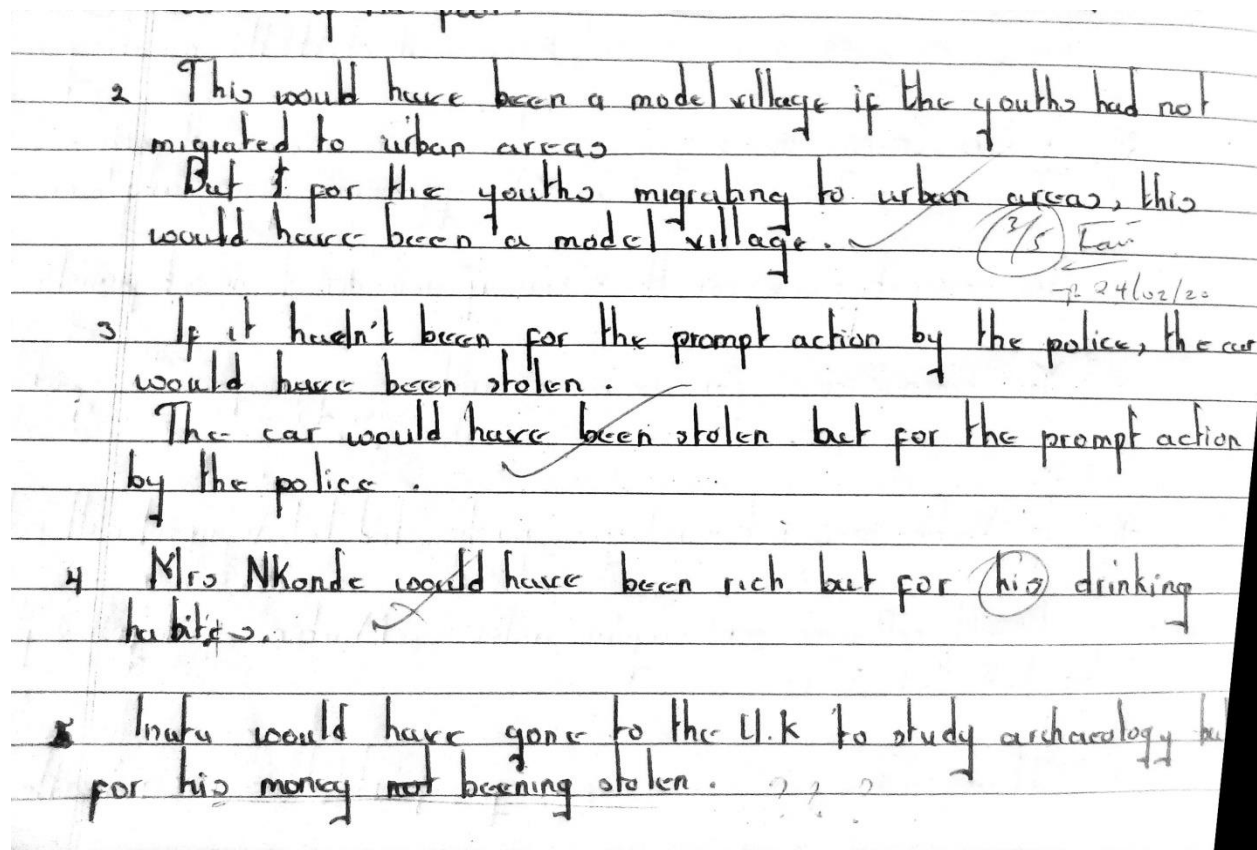
Source: Field data, 2020- Image captured by author

Figure 5.5: T11-gave a transformation exercise on the unreal past.



Source: Field data, 2020- Image captured by author

Figure 5.6: T3- Here T3 gave transformations on the use of 'but for'



Source: Field data, 2020- Image captured by author

The findings from the document analysis show that the teachers frequently gave written assessments in form of transformations, fill in the blanks and complete the sentence exercises.

5.5 How did Teachers' Experiences affect their Grammar Teaching and Testing?

The fourth objective was to examine the teachers' experiences in order to ascertain how they affected their grammar teaching and testing practices. In the study of teacher cognition, the experiences cannot be discarded. Therefore, in the interviews, respondents were asked about their experiences of grammar learning from primary to tertiary education to see how these experiences shaped their grammar teaching behaviours.

5.5.1 How Teachers' Experiences Affect their Grammar Teaching: Interview Data

All the respondents remembered having learnt grammar at primary school except for only three who said they didn't remember learning any grammar. The majority, however, recounted their primary school grammar experiences. Some teachers stated that they were taught all the structures of the English language by their teachers and that their teachers were very particular with error correction. Here are some responses:

T3: Yes, teachers told us how to talk about the past, present and the future using the correct verb forms. If anyone made an error in using the articles, teachers were very particular especially in earlier grades so that correct usage became a matter of habit.

T2: Yes, I learnt all the structures in the sector using first Oxford English readers for Africa, then Zambia primary course.

T4: Yes, I remember learning a lot of grammar using different English books and additionally Zambian educational books for grammars like prepositions, tenses, verbs, nouns etc.

T5: I still remember learning rules on plural, opposites and tenses. I had problems with certain words such as eggs I could not feel the plural.

The teachers were also asked to recount their experiences of grammar at secondary school. The majority of the teachers had similar experiences of grammar in secondary school as evidenced in the following responses:

T3; It was a very good experience, although we did not understand very well what was meant by grammar.

T2: The structures at secondary school were literally a carryover from the primary sector and the grammar in this sector was a reinforcement.

T11: My experience of grammar in secondary school was quite interesting because I came across a lot of new words for the first time in my life and was very happy because I was able to construct new sentences correctly upon learning all the necessary rules.

The teachers were asked how their experiences of learning grammar as learners affected the way they taught grammar and the responses were in two categories. There were those teachers who stated the positive impacts and there were those who stated that it didn't affect them in any way.

Firstly, most of the teachers stated that they were positively impacted by their grammar learning experiences as learners because they find themselves doing what their past teachers would do. They stated as follows:

T3: I have also been influenced by some of such teaching because sometimes when I fail to find suitable explanations for some grammatical structure I just say that that is the way it is or that is how the native speakers of the language say or use it.

T2: I ensure that in oral communication, for example, I am as close as possible to Standard English both in pronunciation and general approach.

T11: I was affected positively because we were given more work as learners however even as I teach my learners I have to do the same so that they learn more.

Secondly, two out of the twelve teachers interviewed stated that their learning experiences did not affect them in any way. They indicated as follows:

T1: It doesn't affect me very much because I remember very little about it as a pupil.

T7: Not very much in the sense that things keep changing as a result I also change and move with time....

The teachers were also asked to state which grammar teaching practices they avoided from their past teachers and why they avoided them. The responses were varied, each teacher had their own practices they avoided. For instance, some teachers avoided giving too many compositions because of class sizes, others avoided the use of mechanical drills and tables and others avoided simply just testing the learners without teaching. Some of the verbatim has been outlined below:

T1: I avoid giving too many compositions because my classes are too large. I avoid teacher exposition so that the Learners are more involved in my lessons. It's the reason I don't remember much from secondary school because I wasn't involved.

T3: I try to avoid using tables or mechanical exercises to practice grammatical structures.

T2: I avoid asking children to simply open a page, read and answer questions. This practice does little to inculcate the knowledge the Learners need.

T5: I avoid grammar practices that are totally abstract.

T10: I try to avoid teacher centered practices and involve the Learners. Also avoid having favorites in class.

There was only one teacher out of the twelve interviewed who indicated that there was nothing she could have pointed to have been wrong with her teacher's grammar teaching practices and she actually wished she had paid more attention. Here is what she indicated:

T7: I had a very good teacher and I used to enjoy his lessons as a result I can't finger point at any bad practice. In fact, if I had known I was going to become a teacher of English I would have paid more attention.

The teachers were also asked to indicate the grammar teaching practices from their past teachers that they applied in their own lessons because they proved effective in their learning. The teachers listed a number of techniques used by their teachers. The techniques mentioned included; question and answer, class discussion, group work, teacher exposition and the use of oral exercises. For instance, T3 said the following:

T3: The use of oral exercises, asking Learners to produce sentences orally before they are given an exercise. Although this exercise is effective, there are some Learners with poor background knowledge of grammar that find these exercises difficult.

Another point worth noting is that some teachers copied their teachers' involvement in the lesson and the teachers' keen interest in the subject. The teachers indicated as follows:

T2: Teacher's total involvement, standing before the eager class with teaching aids around to drive home a point.

T4: Teacher's keen interest in the subject and paying high levels of attention when in class.

After this, the researcher sought to establish how helpful pre service teacher education was in shaping the teaching behaviours of the respondents. The majority of the respondents indicated that methodology courses and the teaching practice were very helpful. The stated that it was from college they learnt how to go about the teaching of grammar and the different methods that can be employed in the teaching of grammar. Here are some examples:

T2: Helpful indeed in that at both primary and secondary school, methods befitting each sector were taught almost exhaustively.

T7: They (methodology courses) were very helpful, initially I had no idea of how to go about teaching until I did methodology and finally went for teaching practice.

T11: The methodology courses were very helpful because that's the starting point when it comes to delivering a lesson in class. You can only deliver a lesson successfully after learning the methods to use.

However, most of those who studied from a particular institution unanimously agreed that not all methodology courses were helpful and that the teaching practice was too short. The following are some of the responses recorded:

T1: The teaching practice was too short.

T3: Not all methodology causes were helpful. I had to teach and reteach some grammatical concepts that learners had not learnt. Most of what I learned was through self-discovery of the learners I was teaching.

T8: Not much because the methodology courses were too theoretical for me to have any influence on me.

T10: Methodology courses did not really teach on how to teach grammar but what really helped was the teaching practice and my mentor.

When asked what they learnt about the teaching of grammar from the methodology courses and their lecturers, the teachers indicated that it was in methodology courses they learnt that grammar teaching be learner-centered, based on the application of grammatical rules, error correction by the teachers to be avoided and that grammar should be practiced orally in class as well. Some responses are outlined below:

T1: Emphasis was put on a lesson being learner centered and a teacher to only be a facilitator.

T3: For example, I was taught to avoid correcting errors and help learners come to a realisation of their errors by using other learners.

T4: I learnt that the knowledge of grammar has important rules that must be followed hence learners should benefit from every lesson taught to cement their understanding.

T6: I learnt how to use the learner centered approach both in oral and written activities.

However, there was one teacher who stated that teacher training affected her grammar teaching behaviour because according to her she never really paid attention to it because she didn't want to study English in the first place. Here's what she said:

T10: I never really paid attention to grammar learning and I never even wanted to study English in the first place.

The teachers were asked if the lecturers or the tutors who taught them at college had impacted them in any way concerning the teaching of grammar. In response, most of the teachers indicated that their lecturers had impacted their grammar teaching. Here are some selected examples;

T1: During teaching practice, the lecturer went step by step planning the lesson with me after a failed first attempt. This helped me greatly and still helps me.

T2: *Through the lecturers' efforts in methodology of teaching grammar, I learnt and I'm glad I have stuck to teaching new words with either live or dry aids to drive the point home.*

T12: *My lecturers made me realize that there are so many ways of delivering content to the Learners.*

T6: *I got exposed to new approaches and methodologies which have helped to enhance my approach when teaching grammar.*

T9: *From my experience I was taught the best way of teaching grammar and have used the same style or methods to teach grammar today.*

The researcher probed the teachers' experiences of grammar teaching from the time they were posted as novice teachers until now. Most teachers said that they had gained and developed additional abilities as a result of their teaching experience. Here is what they said:

T9: *I have learned a lot from other experienced teachers how to go about teaching other components of grammar.*

T5: *I have developed tolerance, empathy and more eclectic in my teaching.*

T6: *the nature of the learners has made me exploit other avenues of teaching grammar effectively.*

T12: *It has helped enough especially with the use of the study kits, pamphlet and other relevant materials to the full capacity and the school has been very supportive as the staff have always been on the go and ready to welcome challenges and what not.*

Based on the findings, the teachers recounted that their past teachers taught them all the structures of the English language and were very particular with error correction. They stated that they found themselves using the techniques the past teachers would use such as teacher exposition, question and answer, group work and oral exercises. However, they also stated that there were also grammar teaching practices they avoided using from their past teachers such as simply testing the learners without teaching, giving compositions to test grammar and using mechanical drills and tables to practice grammar. The teachers also stated that teacher training was very instrumental in teaching them how to go about the teaching of grammar. Also, their teaching settings helped them to become more eclectic, tolerant and empathetic when teaching grammar.

5.5.2 Teachers' Experiences of Grammar Testing: Interview Data

Teachers were asked how their experiences as learners and as teachers had affected how they assessed grammar. They indicated that their past teachers were mostly strict and they considered everything from spellings, punctuations and grammatical rules. What T3 called the purity of work. Others also indicated other assessment activities such as debates, quizzes and thorough analysis of errors. Here are some examples:

T2: Through exercises and marking, checking spelling, omissions and strictly following world standards.

T8: Debates, composition writing, tests on various structures.

T10: Monthly tests, quizzes and class to class debates.

T1: Rewrites were often given. Focus was on grammatical competence.

T2: Immediate correction with recap of only areas that the learners got wrong and extra exercises given for reinforcement.

The teachers were also asked if their grammar assessment practices were in any way similar to those of their past teachers. The majority of the teachers indicated that their assessment practices were similar to those of their past teachers. They explained that certain skills were enhanced through the use of same assessment practices and that they also focused on the same areas as their teachers. Here are some of the responses:

T6: Yes, because certain skills can only be enhanced through the use of the same practices mentioned.

T11: It's similar because I put into practice what I learnt from my previous teachers.

T8: Yes, because they all seem to focus on the same areas.

Secondly, the teachers were asked in what ways their grammar assessment practices differed from those of their teachers and most of the teachers indicated that they did not differ at all. They said they did not differ and they had emulated their past teachers in grammar assessment. Here is what some respondents indicated:

T1: They do not differ.

T2: I have emulated my old teachers copycat style.

A few teachers indicated that their practices differed in some way. They explained that they emphasised communicative competence more than grammatical competence. Also, about three teachers indicated that they used less of oral assessment and their assessments were mostly written. Here are other examples:

T3: In a few ways because I do not consider grammatical competence more important than communicative competence. However, as a teacher of language I wish my learners knew how to use grammatical structures correctly.

T6: The level of questioning has been enhanced due to a whole range of material and experiences e.g. the use of social media.

T9: Nowadays we put so much emphasis on the written assessments.

The participants were then asked if they were adequately trained to test grammar by the methodology courses and they stated that they were not trained enough to assess grammar because the methodology courses did not pay particular attention to grammar testing.

T1: I wasn't prepared at all.

T2: Not really as I was trying to find my feet but with time I acquired enough confidence and began to test according to my conviction in assessment.

T3: I wouldn't say I was prepared. The training course did not pay so much attention to grammar testing.

T8: No, because the duration for my methodology and teaching practice was not adequate enough for me.

The teachers were asked if having gained experience their grammar assessment had changed in any way and one teacher responded that it had changed as he had become more lenient to grammatical errors. And another said that he was now including more oral exercises to ensure learners thought on their own and not coping from friends. However, the majority said they had maintained their grammar assessment practices.

The findings show that the teachers were themselves tested through the use of fill in the blanks and complete the sentence exercises as well as transformations. The teachers have also maintained the grammar assessment practices of their past teachers.

5.6 Challenges Teachers Faced when Teaching Grammar: Interview Data

The challenges that teachers face when teaching grammar was a theme that prominently emerged from the face to face interviews. Out of the twelve respondents involved in the interview only two stated that they had no challenges at all. The difficulties fell into three categories. These challenges included pedagogical difficulties, challenges due to materials used and due to the learners themselves.

5.6.1 Pedagogical Challenges

The first category of challenging aspects included issues of lesson delivery. Most of the respondents mentioned that one aspect of grammar that was really hard to do was explaining to the learners so that they could understand. T1 even indicated that it was so difficult that he sometimes confused the learners:

T1: Yes of course there are some aspects I find difficult to teach. What is difficult really is delivery of some grammar items sometimes to the point of confusing the learners. But I think if I was teaching a class of brilliant learners it would be easier.

Another respondent added that it was hard to explain to learners aspects that he termed as unquestionable. The teacher stated:

T3: The aspects of grammar that seem unquestionable and have been there for years. Where you tell the pupils that this is just how it is.

Teachers also reported that they had difficulties in teaching inversion, phrasal nouns and reported and direct Speech. Difficulties in teaching reported and direct speech were among the commonly cited hard to teach aspects to a point where one teacher confessed to the fact that she skipped these topics on the scheme:

T5: A few naughty ones like phrasal nouns and also reported speech.

T11: Direct and reported speech, sometimes I skip them.

5.6.2 Nature of Books

Some respondents also stated that the challenges they faced when teaching some aspects of grammar was due to the nature of the books they were using in their schools. The respondents said that some books were shallow while some lacked details because they were produced with

the assumption that learners had acquired the prerequisite knowledge which wasn't the case. This is what they had to say:

T3: Books in senior secondary do not explain the aspects of grammar from the background. They were produced with the assumption that learners have acquired the prerequisite knowledge.

T7: It depends with the book because some books are very shallow like MK and I will have challenges to teach.

5.6.3 Learners' Failure to Apply Grammatical Rules

The other category of difficulties concerned the learners that the teachers had. The teachers unanimously agreed that the learners they had failed to grasp and apply grammatical rules. Consider the following response:

T1: Learners can't get right the structure rules. They fail to construct sentences especially when there are no examples on the board.

Another common challenge was the failure of learners to apply the so called rules in transformations. Here is what T9 indicated;

T9: Learners struggle with the governing rules to come up with correct sentences especially in rewrites. Just explaining how and why their answers are wrong takes time.

Apart from failing to apply the rules, they also stated that learners lacked practice and so they found grammar challenging. Here is what T12 had to say:

T12: Learners who don't practice always find challenges. They forget distinctions, sentence construction and also distinguishing between written and spoken.

5.6.4 Learners' Backgrounds

Some teachers stated that the backgrounds of their learners made it hard to teach grammar. The stated that the catchments areas of their schools consisted of learners who had no background of English and also some who had at some point dropped out of school. Here are some responses:

T5: The kind of children we have here are those who had stopped school then came back.

T6: Considering the kind of learners and catchment area of the school, some learners are using English for the first time. Some learners come as far as Mpongwe (rural) keeping themselves in cabins nearby.

The findings show that the teachers faced several challenges in the teaching of grammar to do with lesson delivery, the nature of teaching resources and the nature of the learners they had.

5.4.3 Summary of the Findings

The study employed a qualitative descriptive research design. The research instruments which were used were; observation guide, interview guides and document analysis. The study established that the teachers' understanding of grammar was that of transformational generative and structural grammar. It was discovered that the teaching of grammar was prevalent. They believed that grammar teaching must be rule based and form focused. Consequently, they mostly taught grammar explicitly using deductive techniques. Therefore, the teachers also tested grammar using decontextualised, discrete point exercises such as fill in the blanks, sentence completion and transformations. From the narrations of the teachers, it was gathered that the teachers mostly experienced grammar teaching and testing in the same way they executed it.

CHAPTER SIX

DISCUSSION OF THE FINDINGS

6.0 Overview

This chapter discusses the findings of the study. The data collected from the interviews, observations and document analysis was categorised and analysed under the themes generated from the objectives. The objectives were to: establish teachers' understanding of grammar, analyse teachers' beliefs on how grammar should be taught, analyse the beliefs of teachers on how grammar should be tested and examine how the experiences of teachers affected the teaching and testing of grammar. Finally, the teachers' classroom practices based on the data collected were analysed based on the complex dynamic systems theory that supports the view that teacher cognition is a complex dynamic system. This was also supported by the use of recontextualisation as advanced in Bernstein's code and pedagogical discourses theory.

6.1 Teachers' Understanding of English Grammar

The first objective sought to establish teachers' understanding of grammar through the use of interviews. Teacher understanding is a very cardinal aspect in the study of teacher cognition because as earlier stated in the literature review, the decisions teachers make in class will depend on the teachers' understanding of that particular topic or lack of it. The study revealed that to some teachers, grammar meant the rules of the language while to some grammar meant sentence structuring and the last set of teachers said that grammar was language itself. The teachers also felt that the most important aspects of grammar to teach were the rules of the language and specialised vocabulary. From the responses of the participants, it was discovered that the teachers' view of grammar was that of transformational generative grammar. The teachers viewed grammar as the rules of the language and according to them learners had to show their understanding of grammar by how well they applied the grammatical rules when structuring sentences. The findings of this study are in tandem with the findings of Mwanza (2016) who also found that teachers in the central province of Zambia had a traditional view of grammar.

The views of the teachers agree with Brown's (1994) view of grammar who defines grammar as a system of rules governing the conventional arrangement and relationship of words in a sentence. This definition follows after transformative generative grammar which was proposed

by Chomsky (1957) who states that grammar is a set of rules for generating language. It is primarily focused on linguistic competence. Linguistic competence is defined as the ideal language system that enables speakers to produce and understand an infinite number of sentences in their language and to distinguish grammatical sentences from ungrammatical ones (Chomsky, 1965). Therefore, because this is the view that dominated the teachers' understanding of grammar in the study, the teachers were found to teach rule dominated lessons. Lessons that only focused on form and not function and which taught grammar out of context.

As a contrast to transformational generative grammar, Hymes (1966) suggested the notion of communicative competence. Communicative competence emphasises both form and function. Communicative competence considers one's knowledge of what to say, when to say, how to say, why to say and to whom to say. Therefore, when teaching grammar, the teacher needs not only consider the grammatical rules but also consider the social context in which such an utterance would be acceptable. This is because according to Hymes (1972:279) "There are rules of use without which the rules of grammar would be useless." This is the theory that underlies communicative language teaching recommended by the English language syllabus. Therefore, because their understanding of grammar was that of transformational generative grammar, they practiced it in their classrooms without bearing in mind the dissatisfactions that come with this view or what the English language syllabus stipulates. The teachers in this study mainly focused on the correct application of the rules and not the appropriacy of the sentence. In their own words, they stated that what really mattered were the rules and not what was actually said. However, the most acceptable way of conceiving grammar is one that considers both form and function. The teachers' understanding of grammar is narrow and does not encompass all the four components of communicative competence. However, this shows how teacher cognition can positively or negatively influence the application of curricular because it will definitely be reflected in the classroom choices of the teachers.

6.2 The Beliefs of Teachers on how Grammar should be Taught

The second objective sought to analyse the teachers' beliefs about how grammar should be taught and this was done through the use of interviews and lesson observations. The results showed that the teachers believed that grammar should be taught explicitly using deductive techniques as can be seen in their responses. The respondents described a similar progression of

a grammar lesson where the teacher begins the lesson with a situation or brainstorm, introduces the topic, gives examples, explains the rules and gives exercise both oral and written. It was observed in the lessons that teachers' lessons were deductive as learners were not given chance to notice or detect grammatical patterns so that they work out the rules for themselves. The findings of this study conform to the findings of Morina (2016) and Graus and Coppen (2016) who found that teachers believed that grammar should be form-focused and taught systematically and explicitly and not implicitly. The findings of this study also concur with the findings of Mwanza (2016) who discovered that in the central province of Zambia, grammar teaching was form focused, explicit and rule explanation was predominant.

From the foregoing findings, it can be established that teachers valued explicit grammar instruction over implicit grammar instruction. For instance, in the interviews all the teachers indicated that the grammatical rules were important for learners to know. Therefore, during lesson observations it was noticed that all the teachers worked towards raising the awareness of their learners to English grammatical rules and structures. Rule explanation and application was at the center of all the grammar lessons observed. This study agrees with Ebbsworth and Schweers (1997) assumption that his Puerto Rican participants' were more in favour of conscious grammar instruction because of the traditional approach adopted in Puerto Rico. The same is the case for the respondents in this study.

These findings are also in line with the teachers' understanding of grammar. This is because if they view grammar as the rules of the language, then they might as well employ a kind of instruction that is conducive for learning of the rules of the language and explicit grammar instruction is such an approach. According to Ling (2015), explicit instruction refers to teaching methods that make form as the center. It draws the learners' attention to the rules and their exceptions. The teachers in this study taught grammar explicitly using deductive techniques. The sort of techniques that did not provide learners the opportunity to practice language in natural communicative situations where rules are often forgotten and flouted. They taught grammar in such a way that they encouraged memorisation of the rules. For instance, the teacher in the first lesson description made the learners recite the rules at the end of the lesson. This is contrary to the syllabus recommendation that teachers use methods that encourage learners to reflect, think and do rather than reproduce language from rote learning. Regardless of what second language

acquisition theories state about the importance of the use of real life communicative activities in the teaching of grammar and what the syllabus recommends, the teachers in this study still taught grammar at a sentential level with much emphasis on grammatical rule application. Nevertheless, it was just a reflection of their grammar teaching cognitions.

Furthermore, from the observation of their lessons it was discovered that the teachers' beliefs about how grammar should be taught were a fusion of contradictory language learning theories. The researcher found that the teachers were predominantly preoccupied with grammatical rules, a high regard for accuracy, the use of metalanguage and the use of deductive techniques which showed the influence of the cognitive code approach and grammar translation method. However, the teachers also seemed to have a noteworthy influence of behaviourism as noted in their use of pattern practice and the use of tables to practice grammatical rules. Some teachers actually in their own words indicated that they were trying to cement good habits in their learners. For example, the teachers explained the grammatical rules to the learners which is a cognitive approach but they also used tables and pattern drills to practice grammar. This shows that the teachers understanding of grammar was not refined because they were practicing behaviourism and cognitivism in the same lesson. Therefore, this study concludes that the teachers' cognition in the teaching of English grammar was marred by conflicting sets of knowledge and this was reflected in their classroom practices.

The results of this study also found that teachers valued error correction and they believed that grammatical errors must be corrected immediately whether they interfered with comprehensibility or not. All the teachers indicated that error correction was important and they practiced this belief during their lessons either by correcting the learners themselves or by using their peers. The error correction techniques of the teachers were not implicit as the communicative approach would have it through means such as clarification requests, confirmation checks, and recasts (Larsen-Freeman, 2009) but the teachers would ask the class to state whether what was said was correct or not and sometimes they would just outrightly say no. The teachers indicated that they corrected errors because oral errors had a tendency of being transferred to written work. They also stated that they were trying to form correct habits in the learners. The majority of the respondents felt it was their duty to correct errors because learners came to school to learn. This was in accordance with the findings of Thu (2009) and

Basturmkien, et al (2004) who indicated that teachers in their studies corrected errors whether they interfered with comprehensibility or not. However, this is contrary to Krashen's (1985) view that errors should not be corrected if they do not interfere with comprehensibility because he claimed error correction might hinder second language development in such a way that it strikes the learners' confidence and stirs up the affective filter. Krashen suggests that error correction has no real effect in language acquisition but it does in conscious language learning as it encourages the learners to rethink the rules (Dubois, 2018). Nonetheless, error correction need not to be done instantly as the teachers in this study did. The learners need to be encouraged to engage in meaning making conversations especially if the errors don't interfere with comprehensibility. However, the teachers' understanding is that language is rule governed which influenced their belief that the flouting of rules needs to be corrected immediately. Therefore, it was simply a reproduction of their cognition. This is because the beliefs of teachers will have a direct implication on the teaching-learning transaction. They predict the teacher's behaviour in a classroom and reflect what a teacher provides in a classroom (Morina, 2016). The teachers indicated that error correction was paramount in the grammar teaching process and their corrective practices consequently reflected it.

The study also found that the teachers strongly believed that metalanguage should be used for learners of all proficiency levels from grade eight to grade twelve. Ellis (2006) stated that when teachers decide to use metalanguage, they are treating language as an object rather than utilizing it as a tool for communication. It was observed that during grammar teaching the teachers applied grammatical terminologies. For instance, from the lesson descriptions presented one can see the use of terms such as conditional, infinitive, determiner, verb, future simple tense and so on to describe language. The teachers used the terms freely and expected that the learners already knew them. However, there is debate in language teaching regarding the use of grammatical terms when teaching grammar because the use of grammatical terms is associated with the grammar translation method and methods after it want to avoid it. Furthermore, the use of grammatical terms is a characteristic of explicit grammar teaching and is only beneficial in helping learners formulate the rules that they will need to be able to easily understand language (Berman, 1979). It is discouraged in communicative language teaching. The following are some of the reasons that Borg (1999) posits as the disadvantages of using grammatical terminologies

and the reasons why it is discouraged in communicative language teaching. The use of grammatical terms or metalanguage causes the teaching of language in abstraction and adds to the complexity of second language learning because it allows learners to talk about language rather than communicate. Whether a teacher will use metalanguage when teaching grammar or not depends on his/her cognition concerning it. The teachers in this study used the terms knowing that their learners already knew them and they expected their learners to be able to define them. Research suggest (Myhill et al, 2013) that metalinguistic knowledge is an area of challenge for many teachers but this study found out that the teachers in Luanshya district were very conversant with the grammatical terminologies and used them liberally with their learners.

The teachers practiced the beliefs they professed in the interview. This finding was in tandem with the findings of Deng and Lin (2016) who concluded that the teaching behaviours of the teachers in their study were synchronised with their teaching beliefs. From the findings it was established that the beliefs of the teachers in the present study favoured the cognitive code approach and the grammar translation way of teaching grammar as it was observed in their lessons that they valued systematic, explicit and deductive grammar instruction. This is because what the teachers know and understand grammar to be influences their beliefs about how grammar should be taught and it consequently reflects in their classroom practices. This is just to show that teacher cognition is a complex dynamic system where understanding will influence beliefs and beliefs will influence classroom practices because there's internal connectivity among the dimensions of teacher cognition.

However, their beliefs contravened the syllabus stipulation that they teach the English language using the communicative approach. This is because the communicative approach gives superiority to an inductive approach to grammatical rules and generalisations. They also contravened the communicative approach in the sense that they mostly taught grammar at a sentential level without any context. They did not involve meaningful communication nor did they use authentic situations and materials which are some of the tenets of communicative teaching (Manchishi, 2017). What this means is that teachers will not just follow syllabus stipulations just because they have been outlined but they will practice what they understand and know. The teachers in this study understood grammar to be transformational generative grammar and there was no way of them to applying a functionalist approach to grammar teaching.

6.3 Teachers' Beliefs about how Grammar Should Be Tested

The third objective sought to analyse the beliefs of teachers on how grammar should be tested and was achieved through the use of interviews and document analysis. Larsen-Freeman (2009) states that grammar testing just like grammar teaching can either be done explicitly or implicitly. Explicit testing is done through the use of decontextualized, discrete-point items such as sentence unscrambling, fill-in-the-blanks, error correction, sentence completion, sentence combining, picture description, elicited imitation, judging grammatical correctness, and modified cloze passages. It was discovered that the participant teachers in this study tested grammar explicitly just as they taught it explicitly. The main goal of language teaching is to achieve communicative competence in a learner. Therefore, a successful test is one that can successfully test communicative competence. However, the explicit assessments used by the teachers in this study only focused on testing linguistic competence and sidelined sociolinguistic, discourse and strategic competences. According to Canale (1983), there are four fundamental components in any assessment that need to be tested for one to successfully test communicative competence and these include linguistic, sociolinguistic, discourse and strategic competences. The inclusion of all the competences when testing grammar allows the tester to capture the complexity of language use. This is because it allows for learners to show their knowledge of not only grammatical rules but also their knowledge of how to stimulate and sustain a conversation as well as knowledge of the forms to adopt in particular situations and of language as discourse. This is what communicative language testing does.

Communicative testing is the testing that corresponds to communicative language teaching. According to Brown (2005) it involves the use of authentic materials to test grammar that will make the communication meaningful. It also involves the use of unpredictable language input and creative output where the teacher frames questions in such a way that he does not predict what the learners will say. However, the teachers' beliefs about how grammar should be tested did not align to the contemporary ways of testing grammar which are also recommended by the English language syllabus in Zambia.

The document analysis revealed that they gave learners fill in the gap exercises, complete the sentence exercises and transformations from the prescribed books they used. These formats are among the explicit tests listed by (Larsen-Freeman, 2009). The testing formats they chose

reflected their understanding and beliefs of grammar. They did not test the learners' grammatical knowledge communicatively. The structural formats that the teachers in this study used only looked at the linguistic competence and they tested the learners' grammatical knowledge out of context. However, it was just a reflection of the teachers' beliefs and it hindered the teachers' adherence to the syllabus. Their testing practices were directly in line with their understanding of grammar and their beliefs about how grammar should be taught. One can see consistency in their understanding, beliefs of how grammar should be taught and now the testing of grammar. This is the reason why teacher cognition in this study is considered as a complex dynamic system. There's internal connectivity between understandings, beliefs and practices. These elements are not independent from each other but are facets of the same complex dynamic system.

It was also discovered that the teachers used the assessment formats they used because they were easier to mark considering the large classes they had. Actually, the teachers may have known more than what was observed because cognition is subject to the exigencies of the classroom. Its manifestation in the classroom is influenced and affected by surrounding factors or elements and in the case of this study the sizes of the classes.

Furthermore, in their marking of written work the teachers were primarily concerned with rule application before anything else. For instance, T1 and T7 even stated that the content didn't even matter whether appropriate or not as long as the rules were adhered to. However, this was in contrast to the Communicative approach which emphasises the testing of both form and function. This is because for an utterance to be appropriate it needs to satisfy both form and function. Nonetheless, to the teachers in this study function did not matter as long as the sentences were grammatically correct, a view that is narrow and disadvantageous to the learners' second language development. For an utterance to be successful, grammatical rules and the rules of use should marry bearing in mind that language is a social issue (Nyimbiri and Mwanza, 2020). It would even be more profitable for teachers to consider social grammar as they teach and test English grammar. Wilcox (2004:30) defines social grammar as "Rules about how to use grammar in a cultural or social context in order to create acceptable utterances." This means that the teachers in their grammar testing should give exercises that give learners a cultural or social context in which they practice the rules they have been taught.

Therefore, by not using communicative formats for their in-class assessment in their testing of grammar the teachers contravened the recommendations of the syllabus. These findings echo the findings of Zulu (2016) and Zulu and Manchishi (2018) which revealed that the teachers in their respective studies only tested linguistic competence using mostly multiple-choice questions and they were not familiar with communicative testing techniques.

This study therefore concludes that the teachers believed that grammar should be tested more explicitly using decontextualized fill-in-the-blanks exercises, error correction, sentence completion and transformations. The teachers' beliefs of how grammar should be tested also contrasted with the recommendations of the syllabus mostly because they lacked knowledge of how to test grammar communicatively but also because their grammar testing techniques were in line with the teaching approaches they chose.

6.4 The Experiences of Teachers in the Teaching and Testing of Grammar

The fourth objective was to examine how the experiences of teachers affected their teaching and testing of grammar and was achieved by employing face to face interviews. In the study of teacher cognition, the experiences of teachers are very cardinal because they tend to shape the beliefs of teachers and also increase the teachers' knowledge and understanding. In line with numerous studies (Öztürk and Gürbüz, 2017, Boyd, et al, 2013, Moodie, 2016) the impact of apprenticeship of observation and prior language learning experiences were noticeable in the formation of the teachers' cognitions. The findings indicated that the teachers' early language learning experiences were instrumental in the shaping of their grammar teaching behaviours.

From the narrations of the teachers in the interviews, it was established that the respondents had created initial perceptions on how English grammar should be taught based on their language learning habits and by observing their own teachers in the past. For instance, T2 stated that he ensured that he was as close as possible to Standard English both in pronunciation and general approach because that is what his teachers did. The teachers also indicated that their past teachers assessed grammar mostly through written class exercises which included transformations and fill in the blank exercises. They indicated that their teachers were mostly strict and considered everything from spellings, punctuations and grammatical rules. The past teachers' assessment practices really influenced them to an extent where they said that their own grammar assessment

practices did not in any way differ from those of their past teachers. What this means is that through observing their teachers in action learners form initial conceptions of what teaching and testing is. This is what Lortie (1975) termed as the apprenticeship of observation. The apprenticeship of observation recognizes that prospective teachers do not enter teacher education as blank slates but they arrive with an extensive apprenticeship of observation in teaching methods and with prior knowledge and beliefs about their subject area (Grossman, 1991). Therefore, the participants formed their own conceptions of what grammar teaching and testing was and tried as much as possible to emulate their past teachers.

From the narrated experiences, it was noted that the teachers were taught explicitly using grammatical terminologies. Not only that but their teachers also emphasised grammatical correctness and errors were corrected to ensure correct usage. For instance, T3 stated that his teachers taught them how to talk about the past, present and the future using the correct verb forms. He added that if anyone made an error in using the articles his teachers were very particular especially in earlier grades so that correct usage became a matter of habit. From this we can see why T3 has continued to view language learning as habit formation as he stated: *I correct them myself there and then because language learning is habit formation.* This is what the majority of the teachers were observed doing in their own classes. Form was at the centre of their grammar lessons. They taught grammar using metalanguage and instantly corrected errors. This shows how their experiences of grammar as learners had influenced their grammar teaching beliefs. This attests to Borg's (2015) assertion that teachers' prior language learning experiences create cognitions which form the basis of their early conceptualization of language teaching during teacher education and may continue to influence them throughout their professional lives.

The teachers indicated that their past teachers used question and answer, teacher exposition, the use of oral exercises, mechanical drills, group work, class discussions and pair work as their grammar teaching techniques. They stated that they liked the methods their teachers used in teaching grammar and confessed to emulating them in their grammar teaching. For instance, T7 indicated that if she had known she was going to be a language teacher, she would have paid a lot more attention to her teacher's grammar teaching methods because she liked them. The same practices that the teachers mentioned to be their past teachers' grammar teaching techniques are the same ones they were using in their own grammar lessons. They did not conceal the fact that

they were copying their own teachers' grammar teaching practices. This shows how prior learning experiences can influence the beliefs of teachers to an extent where they become resistant to change. This is so because according to Schempp (1989) as cited in Smagorinsky and Meghan (2014) teachers have a difficult time imagining alternatives to what they experienced as learners.

However, two teachers seemed to have adopted grammar teaching approaches that directly contrasted with the way in which they themselves had been taught the language. For instance, T1 and T10 tried to avoid the teaching methods of their past secondary school teachers. T1 had stated that he did not like his teacher's teaching style because it was purely teacher centered and that was what made him not to remember anything about grammar as a pupil because in the first place he wasn't involved. Even in assessment he stated that his teacher loved assessing grammar using composition, a practice he now entirely avoids. On the other hand, T10 said she avoided error correction class because her grammar learning was not pleasant because of the teacher's constant correction of her errors. This was compounded by the fact that she came from a poor background and for this reason, she felt the teacher favoured other learners instead of her. These findings just confirm that sometimes past learning experiences act as anti-apprenticeship of observation as found out by several other studies (Mohammed, 2006, Moodie, 2016) who found that their participants' English learning experiences served as anti- apprenticeship of observation because their public school teachers provided models of what not to do as language teachers. As can be seen from the narrations of teachers in the face to face interviews, the teachers chose some grammar teaching behaviours of their past teachers to avoid. For instance, they mentioned that they avoided using tables and mechanical drills. They also avoided simply testing learners without teaching. Also, they avoided teaching grammar in abstract. Others avoided giving too many compositions and so on. These practices modeled what not to do when teaching grammar. This shows how negative experiences can positively shape a teacher's cognition.

Apart from being influenced by experiences as learners, the teachers' beliefs were also influenced by experiences as pre-service students. The findings of this study reveal that the teachers in this study were greatly influenced by methodology courses in tertiary education. The respondents indicated that methodology courses were very helpful in shaping their grammar teaching practices. The participant teachers' indicated that it was from the methodology courses

they learnt that grammar teaching should be learner-centered. They also stated that they learnt that grammar teaching must be based on the application of grammatical rules and that error correction by the teachers should be avoided but instead teachers should use other learners. Consequently, the aforementioned practices were observed in their lessons. These findings are directly linked to the findings of (Öztürk and Gürbüz, 2017) who found that the several aspects of their pre-service education were at the centre of the teacher cognition of the participants in their study.

The teachers in this study also stated that their initial conceptions of grammar teaching did not change even after being exposed to tertiary education. The teachers stated that what they were learning in school on grammar is what they found in college and that methodology courses actually provided them with more knowledge on how to go about inculcating that knowledge in the learners. These findings are in line with the assertion that beliefs that are established early on in life are resistant to change (Borg, 2003). Further, the consistency in the view of grammar from primary, secondary and tertiary education suggests that ideologically, transformational generative grammar is the norm of language teaching in Zambia. It also suggests that it is also the expected norm of language usage in Zambia.

Lastly, on the experiences of teachers in grammar teaching and testing the objective considered the teaching context itself. The participant teachers in their narrations indicated many factors that influenced their grammar teaching according to their teaching contexts. It was discovered from their experiences that the teaching and assessment practices and choices of the teachers were determined by several factors such as sizes of their classes, the caliber of the learners and the learners' prior exposure to the language, the availability of the teaching materials and also the infrastructure. Upon observation the researcher found that the sizes of their classes determined what assessment they gave. It was noticed that they gave complete the sentence exercises, fill in the gaps and transformations because they were easier to mark considering the number of their learners. This proves the fact that teacher cognition is context sensitive. The decisions that teachers make in the process of teaching and testing grammar are dependent on their own peculiar classroom contexts. This confirmed Borg's (2003) assertion that teachers' classroom practices are shaped by numerous interacting and sometimes conflicting institutional, pedagogical, personal and physical factors. Teachers' understanding of their classrooms and their

own actions are both context dependent and subject to continual reorganization in interaction with the environment (Borg, 2006).

In conclusion, the experiences of teachers as learners are very influential in their teaching and testing of grammar because they formed their initial conceptions of grammar. The initial conception or beliefs also tend to be resistant to change and will continually be depicted in their own classrooms. Also, their experiences as pre-service students are at the center of their grammar teaching and testing. This is because teacher training introduced them to the dynamics of a classroom. Finally, their experiences of their own teaching contexts also influence the decisions they make in class. A teacher may know something or hold a certain belief but its execution will be subject to the exigencies of the classroom.

6.5 Challenges Teachers Face when Teaching English Grammar

During the interviews another theme emerged and it was the challenges teachers faced when teaching grammar. Like studies before it (Bell, 2016, Myhill, 2016), this study discovered that most teachers had some challenging aspects when teaching grammar.

The participant teachers in this study declared that they found the teaching of inversion, direct and reported speech and phrasal nouns quite challenging. They stated that the real issue was with making the learners understand. The researcher concluded that it was a lack grammatical pedagogical knowledge rather than a lack of grammatical content knowledge. Subject matter knowledge is only one of the several components of knowledge that Shulman (1986) Wilson, et, al (1987) identify as being necessary for effective teaching because an adept understanding of the grammatical subject matter alone is not sufficient to be able to teach successfully. In fact, Borg (2006) asserts that the link between subject knowledge and effective teaching may not be as direct as we might suppose. Among other things, to ensure understanding in their learners, teachers need to know ways of expressing the grammatical knowledge so that the learners are more likely to grasp it (Mohammed, 2006).

Other factors that influence the decisions of teachers when teaching grammar are institutional and environmental factors (Borg, 2003). The teachers in this study faced some challenges to do with the actual school setting where they were found. The challenges cited included the poor nature of the books they were using in their schools. The respondents said that some books they

were using to teach grammar were shallow while some lacked details because they were produced with the assumption that learners had acquired the prerequisite knowledge which wasn't the case. However, the teachers stated that the books were shallow because they had an initial conception of ideal grammar books that would support grammar learning based on what they were exposed to. Also, they want to teach the same way they were taught using the same materials they were exposed to. Therefore, one can see how teacher cognition can frustrate policy implementation. This is because the same books that the teachers term to be shallow are the books that the curriculum recommends and were recently introduced in schools. This is in line with Kagan (1992) when he defines teacher beliefs as unconsciously held assumptions about academic material to be taught.

Also, the learner profile posed a challenge for the teachers who stated that their learners were of low caliber, they lacked practice, they came from poor backgrounds and had difficulties in all aspects of grammar especially grammatical rules governing tenses and direct and reported speech. These findings are consistent with the findings of Öztürk and Gürbüz (2017) who found that the learner profile was a pertinent factor in shaping the teachers' practices. Based on their own personal experiences, teachers thought that their learners did not possess sufficient background knowledge for them to teach grammar successfully. Therefore, the teachers believed that the way they taught and tested grammar suited the levels of the learners. One can see how power relations come into play. Based on their view of their learners' abilities, the teachers practiced control over how they taught and tested English grammar. This agrees with Kagan (1992) when he says that teacher beliefs are unconsciously held assumptions about the nature of students as well.

6.6 Summary of the Discussion

From the discussion it was concluded that the teachers' view of grammar was that of transformational generative grammar, a view that is narrow as it does not account for the functional use of language. Also, because they understood grammar to be the rules of the language, their grammar teaching was done explicitly using deductive techniques. However, this way of teaching grammar is only focused on form and not function. Their grammar teaching beliefs corresponded with their understanding of grammar. Consequently, they tested grammar explicitly with much emphasis on linguistic competence which is just one component of the four

components of communicative competence. However, it was discovered that their beliefs about how grammar should be taught and tested were as a result of their experiences. They taught and tested grammar in the same way they were taught and tested. Therefore, it can be concluded that the beliefs, understandings and experiences of language teachers are interrelated and form one internal mental system. These elements are not independent from each other but are facets of the same complex dynamic system. However, this system is context dependent as the beliefs and experiences may not be depicted due to various external factors such as class sizes and learner profiles. We can also verify that teacher cognition is dependent on the initial introduction to language teaching because we confirmed from the teachers' narrations that they taught grammar depending on how they were taught as is espoused in the apprenticeship of observation. However, teacher education programs also had a profound effect on the shaping of their grammar teaching and testing cognitions.

CHAPTER SEVEN

CONCLUSION AND RECOMMENDATIONS

7.0 Overview

The purpose of the study was to examine how teacher cognition influenced how teachers understood, taught and tested English grammar in selected secondary schools of Luanshya district. Therefore, this chapter will present the conclusions and the recommendations of the study.

7.1 Conclusion

Teacher cognition is a field of inquiry that was established in the 1990s and reached its peak in the 2000s. It is defined by Borg (2003:81) as a study of “what teachers know, belief and think, and its relationship to their practices.” Central to this is the idea of teachers as decision makers who make decisions before and while teaching. They do not follow curricular designed by others in a thoughtless manner. And this study acknowledged that the Zambian secondary school syllabus for English stipulates that teachers use the communicative approach in the teaching of grammar. However, the interpretation and implementation of this is dependent on the teacher’s beliefs, understanding and experiences of grammar teaching which directly and indirectly influence their decisions. There’s been no research in the Zambian context on teacher cognition in the teaching of English grammar. The few studies done on grammar (Mwanza, 2016, Mumba, 2019 and Lungu, 2006) all only considered the application of certain methodologies in the teaching of the English language.

This study was therefore undertaken to examine the influence of teacher cognition in the teaching and testing of English grammar in selected secondary schools of Luanshya district. Here is a summary of the findings:

The first objective was to examine the understanding of teachers of grammar. It was achieved through the use of face to face interviews. The findings show that teachers’ understanding of grammar was that of transformational generative grammar. Their understanding was form-focused traditional grammar which leaned towards correctness. Therefore, they stated that the most important aspects of grammar to teach were the rules of the language and some particular

aspects such as tenses, punctuations, spellings and vocabulary which they considered foundational to any language.

The second objective was to analyse the teachers' beliefs about how grammar should be taught and was achieved through interviews and lesson observation. The teachers also described and followed a similar lesson progression. The lessons were predominantly traditionally, systematically and explicitly taught with techniques such as teacher exposition and question and answer. The teachers' emphasis was on form, rule explanation, the use of metalanguage and instant correction of errors.

The third objective analysed the teachers' beliefs about how grammar should be tested. The findings show that the teachers frequently gave written assessments in form of transformations, fill in the blanks and complete the sentence exercises. The majority of the respondents did not know any other ways of testing grammar apart from the structural formats mentioned. A few teachers mentioned oral sentence construction exercises and composition. It was also discovered that teachers found application as the most important aspect of grammar to test.

The fourth and last objective examined how the experiences of teachers affected the teaching and testing of grammar. The findings show that the majority of the respondents experienced traditional grammar from their past teachers and teacher training. Their teachers used traditional methods to teach grammar and these are the methods the teachers stated that they found themselves using most of the time. Another influential aspect in shaping their grammar teaching cognitions was found to be tertiary education. The respondents stated that methodology courses widened their view of grammar and taught them the methods to use when teaching grammar. The findings also show that the teachers have maintained the grammar assessment practices of their past teachers since most of them stated that methodology courses did very little to prepare them for classroom grammar assessment. However, contextual factors such as learner abilities, availability of materials, infrastructure and supportive school environment all affected how they now teach and test grammar.

As an emerging theme, teachers faced challenges when teaching grammar which included poor quality of learners, their own pedagogical knowledge and the lack of correct teaching materials.

7.2 Recommendations

In view of the findings, the following were the recommendations;

a. Teacher Training Institutions

The study recommends that teacher trainers should teach various forms of grammar and how they should be taught.

b. Secondary Schools

Secondary schools should organize Continuous Professional Development programs for teachers where the cognitions of teachers can be countered or enforced for successful implementation of curricular.

c. Teaching Materials

Since the taught said that they taught and tested grammar according to the prescribed books they had, it is recommended that the Ministry of General Education produces grammar teaching materials that are communicative in nature.

7.3 Proposals for Further Research

Teacher cognition is one of the key factors to consider in language teaching. This study narrowed the gap that was there between the influence of teacher cognition and the teaching and testing of grammar in Zambia. Nevertheless, there is still room for further research in teacher cognition. The following are suggested areas for further research:

- a. Teacher cognition in the use of the communicative approach.
- b. Changes in the cognition of in-service teachers undertaking postgraduate programmes

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APPENDICES

Appendix A: Interview Guide for Teachers on the Understanding, Beliefs and Experiences of Teachers on how Grammar should be Taught and Tested.

THE UNIVERSITY OF ZAMBIA
SCHOOL OF EDUCATION
DEPARTMENT OF LANGUAGE AND SOCIAL SCIENCE EDUCATION

1. What does grammar mean to you?
2. Describe a typical lesson involving the teaching of grammar.
3. How do you test grammar?
4. How have your experiences as a pupil affected the way you teach and test grammar?
5. How has teacher training affected the way you teach and test grammar?
6. How have your experiences as a serving teacher affected your grammar teaching and testing?

Appendix B: Observation Guide

THE UNIVERSITY OF ZAMBIA
SCHOOL OF EDUCATION
DEPARTMENT OF LANGUAGE AND SOCIAL SCIENCE EDUCATION

CONTENT	REMARKS/OBSERVATIONS	OBSERVED BELIEFS/VIEWS
TEACHER NAMES/PSEUDO		
CLASS		
TOPIC		
TECHNIQUES USED		
TEACHER ACTIVITIES		
PUPIL ACTIVITIES		
TEACHER COMPETENCE IN GRAMMATICAL KNOWLEDGE		
OVERALL IMPRESSION OF THE LESSON		
I. Learner centeredness		
II. Response to arising challenges		
III. Rule explanation		
IV. Use of terminologies		
V. Error correction/marking		
VI. Variety of techniques		
VII. Nature of assessment given		
VIII. learner participation		
IX. Nature of instruction; Explicit/ implicit		

Appendix C. Informed Consent Form

THE UNIVERSITY OF ZAMBIA
SCHOOL OF EDUCATION
DEPARTMENT OF LANGUAGE AND SOCIAL SCIENCE EDUCATION

Dear Respondents,

My names are JULIET PHIRI. I am currently a student at the University of Zambia pursuing a Master's degree in Applied Linguistics. This research is a major requirement for me to complete my programme. Thus this exercise is purely academic.

1) Purpose

The researcher aims to investigate what teachers know, believe and do in the teaching and testing of grammar. The researcher seeks to establish the understandings, experiences, beliefs and views of teachers in the teaching and testing of grammar. Furthermore, the researcher means to establish the factors that lead to the formation of the aforementioned beliefs and understandings. Also, the role that the institutional contexts as well as the overall educational system play in the decisions teachers make before and while teaching and testing grammar.

2) Consent

Participating in this exercise is voluntary. You are free to decline to participate in this exercise.

3) Confidentiality

All data collected from this research is treated with utmost confidentiality. Participants are assured that they will remain anonymous and untraceable in this research.

4) Rights of Respondents

All efforts will be taken to ensure that the rights of participants are protected and respected. Participants are assured that they will suffer no harm as a result of participating in this exercise.

Participants are free to seek for any clarification at any point of the exercise and to inform the researcher if they feel uncomfortable about any procedure in the research.

6. Declaration of Consent

I have read and I fully understand this document. I therefore agree/disagree to participate in this exercise.

.....

Signature

.....

date

Appendix D: Ethical Clearance Letter



**THE UNIVERSITY OF ZAMBIA
DIRECTORATE OF RESEARCH AND GRADUATE STUDIES**

RESEARCH DEPARTMENT

APPROVAL OF STUDY

31st August, 2020

REF NO.HSSREC-2020-FEB-014

Juliet Phiri,
LUSAKA.

Dear Ms. Phiri,

RE: “TEACHER COGNITION IN THE TEACHING AND TESTING OF ENGLISH GRAMMER IN SELECTED SECONDARY SCHOOLS OF LUANSHYA DISTRICT”

Reference is made to your protocol dated 1st February, 2020. HSSREC resolved to approve this study and your participation as Principal Investigator for a period of one year.

Review Type	Ordinary Review	Approval No. HSSREC-2020- FEB-014
Approval and Expiry Date	Approval Date: 20 th August, 2020	Expiry Date: 19 th August, 2021
Protocol Version and Date	Version - Nil.	19 th August, 2021
Information Sheet, Consent Forms and Dates	• English.	To be provided
Consent form ID and Date	Version - Nil	To be provided
Recruitment Materials	Nil	Nil
Other Study Documents	Questionnaire.	
Number of Participants Approved for Study		

Specific conditions will apply to this approval. As Principal Investigator it is your responsibility to ensure that the contents of this letter are adhered to. If these are not adhered to, the approval may be suspended. Should the study be suspended, study sponsors and other regulatory authorities will be informed.

Conditions of Approval

- No participant may be involved in any study procedure prior to the study approval or after the expiration date.
- All unanticipated or Serious Adverse Events (SAEs) must be reported to HSSREC within 5 days.
- All protocol modifications must be approved by HSSREC prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address.
- All protocol deviations must be reported to HSSREC within 5 working days.
- All recruitment materials must be approved by HSSREC prior to being used.
- Principal investigators are responsible for initiating Continuing Review proceedings. HSSREC will only approve a study for a period of 12 months.
- It is the responsibility of the PI to renew his/her ethics approval through a renewal application to HSSREC.
- Where the PI desires to extend the study after expiry of the study period, documents for study extension must be received by HSSREC at least 30 days before the expiry date. This is for the purpose of facilitating the review process. Documents received within 30 days after expiry will be labelled "late submissions" and will incur a penalty fee of K500.00. No study shall be renewed whose documents are submitted for renewal 30 days after expiry of the certificate.
- Every 6 (six) months a progress report form supplied by The University of Zambia Humanities and Social Sciences Research Ethics Committee as an IRB must be filled in and submitted to us. There is a penalty of K500.00 for failure to submit the report.
- When closing a project, the PI is responsible for notifying, in writing or using the Research Ethics and Management Online (REMO), both HSSREC and the National Health Research Authority (NHRA) when ethics certification is no longer required for a project.
- In order to close an approved study, a Closing Report must be submitted in writing or through the REMO system. A Closing Report should be filed when data collection has ended and the study team will no longer be using human participants or animals or secondary data or have any direct or indirect contact with the research participants or animals for the study.

Specific conditions will apply to this approval. As Principal Investigator it is your responsibility to ensure that the contents of this letter are adhered to. If these are not adhered to, the approval may be suspended. Should the study be suspended, study sponsors and other regulatory authorities will be informed.

Conditions of Approval

- No participant may be involved in any study procedure prior to the study approval or after the expiration date.
- All unanticipated or Serious Adverse Events (SAEs) must be reported to HSSREC within 5 days.
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- Where the PI desires to extend the study after expiry of the study period, documents for study extension must be received by HSSREC at least 30 days before the expiry date. This is for the purpose of facilitating the review process. Documents received within 30 days after expiry will be labelled "late submissions" and will incur a penalty fee of K500.00. No study shall be renewed whose documents are submitted for renewal 30 days after expiry of the certificate.
- Every 6 (six) months a progress report form supplied by The University of Zambia Humanities and Social Sciences Research Ethics Committee as an IRB must be filled in and submitted to us. There is a penalty of K500.00 for failure to submit the report.
- When closing a project, the PI is responsible for notifying, in writing or using the Research Ethics and Management Online (REMO), both HSSREC and the National Health Research Authority (NHRA) when ethics certification is no longer required for a project.
- In order to close an approved study, a Closing Report must be submitted in writing or through the REMO system. A Closing Report should be filed when data collection has ended and the study team will no longer be using human participants or animals or secondary data or have any direct or indirect contact with the research participants or animals for the study.