The Prevalence of Technology Usage in the Teaching Vocabulary in English in Selected Primary Schools of Kasama District of Zambia.

by

Clenia Ng'andu

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DECLARATION

This work has not previously been presented in any form to the University or to any other body whether for assessment, publication or for any other purpose (unless otherwise indicated). I therefore confirm that the intellectual content of the work is the result of my own efforts and no other person.

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APPROVAL

This thesis by Clenia Ng'andu was approved as fulfilling the requirements for the award of the Degree of Master of Education in Literacy, Language and applied Linguistics by the University of Zambia.

Examiner 1

Name:

Signature:…… Date:……

Examiner 2

Name:

Signature:…… Date:…….……

Examiner 3

Name:

Signature :……Date ……

Chairperson board of examiner

Name:

Signature:……..... Date: ……..

Supervisor

Name: Dr. Sitwe Benson Mkandawire

Signature:…… Date:……

DEDICATION

This thesis is dedicated to my parents (Regina Chilala and S. Ng'andu), and Child (Vincent Siabanyama) for their inspiration, spiritual and moral support.

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TABLE OF CONTENTS

DECLARATION i
COPYRIGHT ii
APPROVAL iii
DEDICATION iv
ACKNOWLEDGEMENT v
LIST OF ABBREVIATION ix
CHAPTER ONE: INTRODUCTION TO THE STUDY 1
1.0 Overview 1
1.1 Background 1
1.2 Meaning of Vocabulary 3
1.3 Purpose of the Study. 5
1.4 Statement of the Problem. 5
1.5 Research Objectives 5
1.6 Research Questions 6
1.7 Significance 6
1.8. Delimitation 6
1.9. Limitation 7
1.10 Operational Definition 7
1.11 Theoretical framework 7
1.12 Summary 9
CHAPTER TWO: LITERATURE REVIEW 10
2.0 Overview 10
2.1 The use of technological gadgets in teaching vocabulary among early graders? 10
2.2 The technological applications, software and learning platforms used for teaching vocabulary in lower grades. 15
2.3 The views of teachers on the use of technology in teaching vocabulary among early graders. 21
2.4 Summary 37
CHAPTER THREE: METHODOLOGY 39
3.0 Introduction 39
3.1 Research Design 39
3.2 Study population 39
3.3 Study Sample and Sampling Techniques 40

3.3.2.1Purposive Sampling 40
3.3.2.2 Simple Random Sampling 40
3.4 Data Collection Method 40
3.4.1 Questionnaire Method 41
3.4.2 Interview Method 41
3.4.3 Observation 41
3.5 Data Analysis Procedure 41
3.6 Interview Guide 41
3.7 Classroom lesson observation 42
3.8 Data Collection Procedure 43
3.9 Data analysis procedure 44
3.10 Trustworthiness 45
3.11.1 Credibility 45
3.11.2 Dependability 46
3.11.3 Conformability 46
3.12 Ethical Considerations 46
3.12.1 Reciprocity 47
3.12.2 Confidentiality 48
3.12.3 Health considerations of participants 48
3.13 Summary 48
CHAPTER FOUR: PRESENTATION FINDINGS 50
4.0 Overview 50
4.1 The Use of Technological Gadgets in Teaching Vocabulary among Early Graders. 50
4.1.1 The Use of Mobile Phones to Teach Vocabulary 51
4.1.3 The Use of Laptops, printers and Desktop Computers in teaching. 52
4.2 Technological Applications, Software and Learning Platforms used for Teaching Vocabulary. 54
4.3 The Views of Teachers on the Use of Technology for Teaching 56
4.3.1 Views of Teachers on non-Usage and inconsistencies in use of Technology in Teaching Vocabulary. 60
4.7 Summary 61
CHAPTER FIVE: DISCUSSIONS OF FINDINGS 62
5.0 Overview 62
5.1 Technological gadgets teachers use when teaching vocabulary among early graders 62

5.2 Technological applications, software and learning platforms used for teaching vocabulary in lower grades. 64
5.3 The view of teachers on the use of technology in teaching vocabulary to early graders. ... 66
5.4 Summary 70
6.0. Overview 71
6.1 Conclusions 71
6.2 Recommendations. 72
6.3 Suggestions for further studies 73
REFERENCES 74
APPENDICES 80
Appendix A: Interview Guide 80
Appendix B: Observation Checklist 81
Appendix C: Research Questionnaire 82
Appendix D: Time Frame 86
Appendix E: Proposed Research Budget 87
Appendix F: Sample Profile 88

LIST OF ABBREVIATION

CALL	Computer Assisted Language Learning
CDC	Curriculum Development Centre
DEBS	District Education Board Secretary
DST	Digital Story Telling
EAP	English for Academic Purpose
EFL	English as a Foreign Language
EGRA	Early Grade Reading Assessment
ELL	English Language Learner
ESL	English Second Language
FL	First Language
GRZ	Government of the Republic of Zambia
ICT	Information and Technology Studies
IT	Information Technology
LLP	Lubuto Library Parthers
LoI	Language of Instruction
MoE	Ministry of Education
MoGE	Ministry of General Education
MoI	Media of Instruction
OLPC	One Laptop Per Child
PBL	Project Board Learning
PLIP	Public Library Innovation Program
PLP	Primary Literacy Programme
PRP	Primary Reading Programm
PVT	Picture Vocabulary Test
SACMEQ	Southern African Consortium for Monitoring Education Quality
TBLL	Task-Board Language Learning
TBTL	Task-Board Language Teaching
TPACK	Technological Pedagogical Knowledge

UNT	University of North-East Thailand
UNZA	University of Zambia
USAID	United States for Agency International Development
ZAT	Zambia Achievement Test
ZPD	Zone Proximal Development

ABSTRACT

The study investigated the prevalence of using technology in teaching vocabulary in English using technology in selected primary school of Kasama district of Zambia. Using a descriptive research design, the study adopted a qualitative methodology. Questionnaires, interview guides and observation check list were used in collecting data. The sample size was twenty teachers who taught grades two to five classes from five schools, including twenty pupils from the same schools. Thematic analysis was used to analyze the data that was gathered. The study sought to address three objectives: firstly it aimed to establish the use of technological gadgets teaches of lower grades use in teaching vocabulary. Secondly, the study wanted to ascertain the technological application, software and learning platforms that were used for teaching vocabulary among early graders and the third objective investigated the views of teachers in teaching vocabulary among early graders. The study discovered that among the gadget provided by technology smart phones, iPad, laptops, computer, desktop and tablets were the tools teachers used in the teaching of vocabulary. Among all these gadget, the phone was the most used tool because it was the most accessible and available device. Furthermore, the study confirmed that even though technology had a lot of softwares, applications and platforms teachers of Kasama district only used WhatsApp, tiktok, you tube, audiobooks, Facebook, video games and power point when teaching vocabulary. It should also be noted that, despite teachers mentioning these platforms and software only four teachers from two different schools were seen implementing what they had claimed in the questionnaires. Most of the learners too, attested to the fact that, some of teachers had never used any form of software or platform in teaching vocabulary, except for four pupils from two different schools indicated that, their teachers sometimes would utilise the stated technological affordances in teaching vocabulary. Additionally the study showed that most of the teachers had a positive attitude towards the use of technology in teaching vocabulary as the results indicated that, the use of technology was a promising solution for diverse learners with different abilities, as technology provided multiple affordances which enhanced inclusiveness in the learning of vocabulary. However some teachers showed ignorance and negative attitude towards the use of technology owing to a number of reasons which include lack competencies in operating the gadgets, unavailability of technological tools in schools and lack of language special rooms. The study therefore recommended that

the government should increase funding in schools to facilitate the purchase of various technological tools and construct language special rooms to cater for learners with disabilities. The study also recommended that district education officers in collaboration with head teachers should ensure that teachers hold regular continuous professional development meetings to capacity build the teachers on the use of technological strategies and operations of various gadgets for effective teaching and learning.

Key word: Technology, prevalence, strategy, vocabular

CHAPTER ONE: INTRODUCTION TO THE STUDY

1.0 Overview

In this chapter, the nature of the study is presented by outlining the purpose of the study, statement of the problem, research objectives and questions. The significance of the study, delimitation and limitation of the Study are also explained. The definition of key terms and the theoretical framework and background of the problem have been provided. The chapter ends with summary of the main subtopics presented.

1.1 Background

The teaching of vocabulary is a critical component of literacy instruction among early grade learners Willingham & Price, (2009); Simpson & Randall, (2000). Vocabulary is significant because it helps learners understand a wide range of the materials; they interact with in written or spoken form. Willingham and Price (2009, p. 91) observed that, a person who knows more words can actually speak, and even think more precisely about the world. Vocabulary is important as it expands the horizons of learners, the more words a learner knows the higher the chances of understanding what they read or hear. Yung (1997) emphasised the importance of vocabulary and adds that, Vocabulary acquisition plays an important role in mastering a language. A learner with insufficient vocabulary size will not perform well in every aspect of language itself, Vocabulary skill is often considered as a critical aspect of foreign language learners as limited vocabulary in a second language, impedes successful communication. Additionally, Zhou and Mann (2021) believe that, while without grammar very little can be conveyed, without vocabulary nothing can be conveyed", vocabulary serves as the very basis of language development, and no language acquisition can take place without the acquisition of vocabulary. This study argued that, foreign language acquisition is generally deemed to be closely associated with vocabulary study; therefore, lexical deficiency constantly interferes with the daily communication. Simultaneously, it is believed that vocabulary carries the basic information needed to understand and express information. However, the importance of vocabulary learning has never been overemphasized in learning a foreign language and it was not until the 1970s that researches into vocabulary learning started to grab considerable

attention. Since then, many teachers, researchers and scholars have devoted themselves to this filed, making remarkable achievements.

Some research indicate that teaching vocabulary can be considered as problematic, as some teachers are not really sure about the best practice in the teaching and sometimes not really aware how to start forming an instructional emphasis on the vocabulary learning Berne & Blachowicz,(2008). Further, Linhan, (2004) also observed that Zambia still staggering to raise the low literacy levels in both local languages and English. The study indicated that learners in Grades 3, 4 and 6 could not read in Zambian Languages and they could not read English texts two years below their grade level.Yang (1997) noticed that, many college students still encountered difficulties in reading their English textbooks owing to the fact that, their vocabulary size was limited, and suggested that, in order to facilitate the learning process for learners, a deep understanding of vocabulary teaching is rudiment. Zhou and Mann (2021) added that, there were more researches centring around how to improve and promote vocabulary learning on the basis of learning strategies. Laufer,(2003) commended that, vocabulary instruction strategies have a bearing on learner's level of understanding in schools. Yang and & Chen, (2007) advised that technological strategies are very helpful for language learning in this modern era, technology facilitates the learning process and provide different affordability, such as interpersonal connection and interaction in social media. In addition, Jones and Shao (2011) state that learners had a positive reaction to using new technology, and they looked at technology as a rightly combined and well-designed avenue for learning. Recently, learning by mobiles had become a new tendency to help learners deal with materials Lan and & Sie (2010); Tahounehchi,(2021). The coming of new technologies had given effective means for language learning so that leaners could improve their knowledge of different sub-skills and skills Astika,(2015). Moreover, technology provided variety of mobile applications that could help pupils expand their vocabulary. Because of the popularity of such technological applications, many language educators were interested in investigating how they may use technology to teach particular aspects of local language and foreign/second language. Suzanne (2014) asserts that, technological strategies deepened the learners' understanding of reading content and improved listening and speaking after they completed online collaborative tasks. Besides, Taji et al (2017) also observed that digital tools were widely used in language teaching

vocabulary around the world, especially when the Pandemic Covid-19 had pushed the education to opt for hybrid system which enabled the lecture session to be done in online and also face to face interaction. Robin further contended that, digital tools improved Vocabulary Acquisition.

Zambia's adoption of ICTs in schools remains visibly low and slow. The perceptible incremental uptake of technology is tardy despite high levels of motivation, this might be attributable to factors such as a lack of infrastructure, equipment and skilled teachers, among others Salehi and Salehi,(2012); Tondeur, van Keer, van Braak and Valcke, (2008), including the absence of a comprehensive ICT Education Policy. Camera Education (2014), commended that the policy documents in Zambia acknowledged the need for ICT use in education and predicted that, the use of technology improved the livelihood related skills of people. Inline, Camera Education (2014) appreciated that, technology granted access to a substantive body of knowledge shaped by numerous skilled scholars and educators around the world. MCM, (2006) indicates that, the use of technology in teaching aimed at modernising the educational dispensation system with the goal of improving the quality of education and training at all levels ICT in education policy and strategies depends on policymakers who are usually in strategic positions to affect an educational shift so that it compares equitably with others across the globe.

There is a need to be careful and intentional when selecting strategies for teaching vocabulary. Appropriate choice and deployment of strategies can make a big difference in determining if vocabulary learning becomes an efficient or inefficient, and even pleasant or frustrating experience" GU, (2018). The use of technology as suggested by many researches may provide beneficial strategies through many affordances' technology provides.

1.2 Meaning of Vocabulary

Vocabulary is generically defined as the knowledge of words and word meanings. More specifically, vocabulary is used to refer to the kind of words that students must know to read increasingly demanding text with comprehension Kamil & Hiebert, (2005). It is something that expands and deepens over time. TESOL by international Association (2021), defined vocabulary as the words of a language, including single items and phrases or chunks of several

words that convey a particular meaning, the way individual words do. Vocabulary addresses single lexical items words with specific meaning(s) but it also includes lexical phrases and multiword expressions TESLO (2021) confirms that, vocabulary is central to English language teaching because without sufficient vocabulary, students cannot understand others or express their own ideas. Wilkins (1972) added that, “while without grammar very little can be conveyed, without vocabulary nothing can be conveyed” (pp. 111–112). Lewis (1993) further argues that, “Lexis is the core or heart of language” (p. 89). Particularly as students develop greater fluency and expression in English; it is significant for them to acquire more productive vocabulary knowledge and to develop their own personal vocabulary.

Schmitt, (2000) Further, noted that, Vocabulary is considered essential to successful second/foreign language learning .Hence, offering a valuable foundation for both language learning at later stages and real-life communication, vocabulary knowledge assists learners to communicate effectively and perform successfully in all related skills of listening, speaking, reading, and writing. The more vocabulary, therefore, a learner understands the more skilful expressions he/she can make. Dong et al (2020:1) provided further insight by stating that, “Vocabulary knowledge, is regarded as the minimum semantic unit in reading comprehension and regarded as a component of linguistic comprehension, which refers to a semantic schema on passage mental image cognition and single word or character semantic meaning identification”. The meanings of new words are very frequently emphasized, whether in books or in verbal communication. Vocabulary is considered as central in language teaching and is of paramount importance to a language learner. Conclusively, Nation (2001) describes the correlation between vocabulary knowledge and language practice as complementary: The skill of vocabulary enables language use and conversely.

In light of various definitions of vocabulary, it should be noted that, vocabulary serves as the foundation for learning any subject in school as it facilitates comprehension of texts and activities from any given subject. It is with these benefits at hand, that, the current study strives to investigate the use of technology in the teaching of vocabulary among early graders in selected schools of Kasama, Zambia, to improve the vocabulary levels.

1.3 Purpose of the Study.

The purpose of this study was to establish the prevalence of teaching vocabulary in Bemba and English using technology in selected primary schools of Kasama District of Zambia.

1.4 Statement of the Problem.

A few years after Zambia independence in 1964, literacy levels across the country begun to decrease SACMEQ, (2010); Manchishi, (2004); Mkandawire, (2017); Tambulukani, (2001). Multiple factors are reported associated with this decline that included the language of instruction, insufficient instructional materials, ill qualified teachers, and poverty Mkandawire,(2022). Despite the Zambian government through the Ministry of Education having put up interventions to improve reading, pupil's performance in reading has been poor USAID/Zambia, (2022). If this problem is not addressed it will slow down the economic development of the country. Zambia, together with other countries world over has faced many challenges of poor reading levels. In 2013 the national literacy framework of Zambia was launched in which the teaching of vocabulary, phonics, phonemic awareness, fluency and comprehension were recommended to be taught in every literacy class by teachers through a prescript literacy lesson Ministry of Education, Science, Vocational Training and Early Education, (2014; 6-7). It also recommended the use of diverse activities including technological gadgets to teach reading. Despite this policy, literacy levels have continued to decline against the increase in population Mkandawire, (2022). It is not known whether teachers are using Technology in teaching vocabulary. Therefore, this study investigates the prevalence of the use technology in teaching vocabulary in Bemba and English in selected of Kasama.

1.5 Research Objectives

The study addressed the following research objectives;

i. To establish the use of technological gadgets, if any, by teachers when teaching vocabulary among early graders?

ii. To ascertain if class teachers used any technological applications, software and learning platforms when teaching vocabulary in lower grades?
iii. To investigate the views of teachers on the use of technology in the teaching of vocabulary to early graders?

1.6 Research Questions

The research questions that the study will respond to are as follows;

i. What technological gadgets, if any, did teachers use when teaching vocabulary among early graders?
ii. What technological applications, software and learning platforms were used for teaching vocabulary in lower grades?
iii. What were the views of teachers on the use of technology in the teaching of vocabulary to early graders?

1.7 Significance

The results of this study may help school authorities reposition the use of technology in teaching, especially the teaching of Zambian Language and English. Ministry of Education may also use the results as the basis to capacity build and train teachers so that they can use various technological strategies and explore other opportunities which technology provide. The current study is important as it contributes to the existing board knowledge in the area of language teaching. Most of the schools in Zambia are implementing inclusive Education in teaching, the use of traditional methods need some backup solution to enhance its successfulness. Therefore, it is hoped that the findings of this study may contribute to the improvement in language teaching even among learner of diverse learning needs and abilities as the incorporation of technological strategies seems to be a promising approach that will improve learner achievement and make teaching easier for teachers.

1.8. Delimitation

This study was conducted in the urban schools of Kasama district in the provincial Headquarters of Northern Province. However only Five (5) schools were be selected.

1.9. Limitation

The limitation of this study was the challenge of balancing between work and other activities related to this research, since I did not go on leave.

1.10 Operational Definition

Prevalence - The commonness of a particular practice.

Technology- refers to the expertise to use modern machinery to do things with much ease, perfectly and in a quicker way.

Educational technology - The use of technological skills and strategies enhance teaching and learning.

Strategy - A general plan to achieve long-term or overall goals under conditions of uncertainty.

1.11 Theoretical framework

It is a believed that a theoretical framework helps in framing the inquiry for data analysis and interpretation may be made based on the definitions provided by the researchers mentioned below. Theoretical framework helps to root the research focus under investigation within theoretical reinforcement. Casanava and Li (2015) contend that a theoretical frame work is a structure that can hold or support a research study's theory. It offers and examines the idea that underlies the existence of the research problem under consideration. A study is developed through a theoretical framework which serves as a 'lens' or a foundation' and offers the theoretical presupposition for the investigation's larger context.

A schema, or scheme, is an abstract concept proposed by J. Piaget to refer to our, well, abstract concepts. Schemas (or schemata) are units of understanding that can be hierarchically categorized as well as webbed into complex relationships with one another. For students, their schemas pretty much amount to what they already know about a concept. They may have learned it in other classes or through their own experiences. What they "know" may be

incorrect. The job of the teacher is to either expand or correct their schemas about important concepts in our fields. The schema theory informed the direction of this study. Willingham and Price (2009) viewed the schema theory as schema theory since students with limited schemas, or prior knowledge, have more difficulty in learning new words Jenkins & Dixon,(1983). Developmental instructors must take this concern into account when contemplating appropriate vocabulary instruction for their students. Willingham and prince (2009) noted that, when learning new words, the lack of schema, often due to limited reading, proves a common problem for developmental education students Willingham & Price,(2008); Willingham,(2009) Stahl, Jacobson, Davis, and Davis (1989) stated, "According to schema theory, the reader's background knowledge serves as scaffolding to aid in encoding information from text" (p. 29). The concept of scaffolding has foundations in Vygotsky's (1978) theoretical work on Zone of Proximal Development (ZPD), described as the distance between students' actual developmental level and potential level with direct instruction or peer collaboration. This theory suggests that as students' experiences with words grow, it becomes easier to learn new words. With reference to the above argument, schema theory supports the teaching of vocabulary to early graders to equip the learners with the ability to understand and be able to communicate both through writing and speaking. Schema theory particularly suit this study because vocabulary is learnt in bits or chunks, and learners need to have the knowledge and build up with the ones they learn each day in order to comprehend any given text. Alqahtani, (2015) confirms that, for comprehending oral and written materials, vocabulary is an essential skill that must be mastered by the learners. It is vital because without sufficient vocabulary, it would be difficult to comprehend the inputs learners receive. Alqahtani, (2015).Zimmerman (1997) (as cited in Lin et al., 2013) points out that "vocabulary is central to language and of critical importance to EFL learners". Therefore, vocabulary has a pivotal role in language learning, and unlike grammar, which is a system of a limited numbers; vocabulary is an open set of many thousands of items. It is practically impossible for a learner to learn, or complete any class activity without sufficient vocabulary, thus the theory applies well to this study which focuses on the prevalence of the use of technology in the teaching of vocabulary to early graders in Kasama district, Zambia. Employing this theory to this study will enable the researcher to determine whether technology is being used in teaching vocabulary and be able to draw a conclusion.

1.12 Summary

This chapter presented background information on the prevalence of the use of technology in the teaching of vocabulary among early graders in selected schools of Kasama district. The chapter also gives the statement of the problem, objectives, significance of the study, theoretical framework and definitions of key terms. The next chapter presents the literature review.

CHAPTER TWO: LITERATURE REVIEW

2.0 Overview

The previous chapter introduced this study by highlighting the background, problem statement, research objectives, limitations and delimitations. This chapter intended to provide a review of the synthesis of the literature related to the use of technology in the teaching of vocabulary among early grade learners. This chapter presents the discussion of literature related to this study. The first discussion is on objective one, followed by the second objective and ends with the third objective. Each study cited ends with a paragraph linking it to the present study and provides the gap in the existence to justify the need to undertake the current study. It also presents the summary of the reviewed literature.

2.1 The use of technological gadgets in teaching vocabulary among early graders?

The study found that, technology allowed teachers to accommodate every learning style whether students learn best through lectures, reading, examples, or videos. In addition to resources like textbooks and worksheets, technology equips educators with various tools to help students develop a better understanding of the material because students learn in unique ways and incorporating more learning methods increases the likelihood that all students will grasp the concepts.

A study by Adom and Aravind (2019) revealed that in recent years technology had changed dramatically. Due to the increasing need and accessibility of technology, it had expanded the toolbox and provided opportunities to the teachers for using technology. Computer devices were considered to be the more powerful tools which had come in various forms. The internet helped connect those devices and could connect students in the classrooms, through schools or around the world. The study discovered an availability of computers and interactive boards in schools, and the schools were connected as well as to the whole world providing high-speed network connectivity. Technology was present in schools in the form of tablet devices, smartphones, and laptop computers were now used as a part and parcel of the teaching-learning process. The objective of the study was to provide information about various technological tools that could help enhance the teaching and learning process. These tools could help the teachers in creating, manipulating, using and sharing information over the networks.

The study by Adom and Aravind(2019)is pertinent to the current study since it shed light on the use of Computer devices and other tools that could help to enhance the teaching and learning process , which is the more reason this study was this study was carried out. The current study is necessary to investigate the use of technological gadgets in the teaching of vocabulary in lower grades of Kasama. In contrast to Adom and Aravind(2019) study which concentrated on the use of technological tools in teaching and learning in general.

The study by Taji, Fatimah, Muhammad and Ahmad (2017) investigated the impact of a model created with the help of computer and mobile phone on the EFL vocabulary learning of the students at a public university on a Preparatory Year Program. The study used a quasi-experimental pretest posttest control group design. The participants were 122 students in their first year at a public university. Half of them (N = 61) were male and half were female (N = 61). Six weeks treatment period involved vocabulary learning activities presented through PCs in the language laboratory and receiving multi-glossed vocabulary cards on the mobile phones through a social networking mobile phone application WhatsApp. Findings suggested that performance of treatment group was significantly better than that of control group on achievement posttest. The impact of treatment was found gender neutral as male and female participants benefitted from it alike.

The findings of the study by Taji et.al(2017)was similar to the current study in that it aimed to see the impact the use of computer and mobile phone had in the teaching of vocabulary in in a public university through a quansi-experimental pre-test post-test control group design, hereby giving the current study insight on the likely results of using the aforementioned gadgets .However this study differs to the present study because the current study sought to investigate the use of technological gadgets in Kasama district among the early graders ,besides the study used a descriptive mode of inquiries under qualitative design. This makes the currents significant.

Chabinga,(2021) framed his study as, 'Emerging Technologies for Teaching and Learning: An investigation into the Role and Use Of iPad In English Second Language in Three Primary schools in Northern Zambia,' is situated in Northern Zambia in the Mungwi District. The study sought to investigate the role and use of emerging technology (that is iPad), for literacy development in Grade six English Second Language schools. The purpose was to gain insight

into the role emerging technologies played in fostering English Second Language (ESL) and literacy development in the era of new multimodal texts. This entailed acquiring an understanding of how highly ZeduPad tablets might facilitate meaning-making in the process of developing literacy skills.

In order to achieve this objective, the study employed the Input Hypothesis and Affordance theories as lenses through which to view language and literacy teaching and learning. In particular, the study employed a pragmatic paradigm intertwined with a mixed method, thereby combining the prototypes of quantitative and qualitative research. A pragmatic paradigm affords the researcher a degree of objectivity. The focus was to investigate both learners' and teachers' perspectives on how they used ZEduPads to facilitate teaching and learning. Thus, as a non-participant observer, who keenly observed how learners were engaged in multimodal texts and how meaning-making was accomplished through the use of ZEduPad Tablets.

Data was thus collected through the questionnaires, focus groups, individual interviews and classroom observations. The overlapping information gleaned through these instruments allowed me to step inside the natural set-up of the ESL and literacy learning practices as a non-participant observer to gain feedback first-hand while striving to maintain the relatively objective stance required for unbiased interpretation. Non-participant observation allowed me to view participants' perspectives on new literacy practices, while numerical data enabled me to complement the thematic data quantitatively and eventually to interpret the numbers. A Total of 225 learners across three primary schools, seven teachers and one district official were involved in the sample. The schools were selected because they had already been using the ZEduPads for teaching and learning in Northern Zambia.

The study by Chabinga (2021) is significant to the current study, since it sought to seek a deeper understanding on the role and use of iPad In English Second Language in Primary schools However, the current study differs from Chabinga (2021) study because the current study's focus is on the use of technology in teaching vocabulary in selected primary schools among lower grade, learners, particularly of Kasama district. The current study used qualitative study which is one of the reasons why the present study must be carried out.

Another study conducted by Gaided (2013) in Canada indicated that iPad and iPod technology had the potential to assist learners struggling with second language acquisition. Gaided (2013)

investigated the use and impact of iPad and iPod technology in second language learning and the findings showed the value of these technological devices in this domain. The researcher observed that iPad technology had a positive impact on second language learning. The research aimed to understand how learners progressed with iPad in German primary school. It was observed that the success of iPad technology was dependent on the opportunities within the interactional conversation's learners were given during learning. The study concluded that iPad technology was a suitable tool for literacy development with regard to listening and speaking proficiency. In addition, interactional conversation aided by technology was invaluably beneficial in teaching and learning a target language and that iPad technology was more suitable for fostering language acquisition through collaboration and interaction as long as learners were enabled by I Pod's affordances.

The works by Gaided (2013) demonstrates the value this study attaches to the use of iPad and iPod as technological gadgets in teaching language. The research stressed that the success of iPad technology was dependent on the opportunities within the interactional conversation's learners were provided during learning .Although the above study was conducted in schools of Germany respectively, the study is related to the study at hand because, it emphasised the use of technology in teaching language, though with a condition that, there must be a collaboration and interaction between learners' and the iPod affordances during learning. The relevance of the study at hand is that, was done in Kasama in selected schools to improve the teaching of vocabulary through the use of technology.

A study conducted with pre-school teachers in New Zealand by Hunter and Daly (2013) investigated the use of iPad applications (apps) in the teaching of language. In the investigation, four-iPad language apps were identified which pre-school teachers then used to teach language. The findings indicate that the use of iPad, and carefully chosen language apps for language learning, were useful in providing authentic learning. The apps also aided learners' pronunciation skills.

The relevance of Hunter and Daly (2013)'s study to the results of this study is that it commends the use of iPads in teaching of language. The study focused on the use of technology among pre-school learners in New Zealand, it was determined that when teachers made use of carefully selected applications on for language teaching, learners' authentic learning and

pronunciations were enhanced. The current study is still of great value because its result may impact positively on the teaching of vocabulary and influence teachers to have a positive attitude towards the use of technology in Zambia and particularly in Kasama district.

Haleem et al, (2017) one of the fundamental components of the United Nations' sustainable development 2030 agenda was quality education. It aimed at ensuring inclusiveness and equitable quality education for all. Digital technologies had emerged as an essential tool to achieve this goal. These technologies were simple to detect emissions sources, prevented additional damage through improved energy efficiency and lowered-carbon alternatives to fossil fuels, and even remove d surplus greenhouse gases from the environment. Digital technologies strived to decrease or eliminate pollution and waste while increasing production and efficiency. These technologies had shown a powerful impact on the education system. The recent COVID-19 Pandemic had further institutionalized the applications of digital technologies in education. These digital technologies had made a paradigm shift in the entire education system. It was not only a knowledge provider but also a co-creator of information, a mentor, and an assessor. Technological improvements in education had made life easier for students. Instead of using pen and paper, students nowadays use various software and tools to create presentations and projects. When compared to a stack of notebooks, an iPad was relatively light. When opposed to a weighty book, surfing an E-book was easier. These methods aid in increasing interest in research. This paper is brief about the need for digital technologies in education and discusses major applications and challenges in education.

The relevancy of Haleem et al, (2017*)* study to the results of this study showed that an iPad was one of the gadgets technology provides. An iPad had numerous advantages as compared to the traditional strategies of teaching and learning. These technologies showed a powerful impact on the education system especially during the recent COVID-19 Pandemic that had further institutionalized the applications of digital technologies. Digital technologies had made a paradigm shift in the entire education system. The studies suggested that an iPad as a technological tool could be a co-creator of information, a mentor and an assessor, its affordances made life easy for students, through the use various software and tools. Although this study was carried out among tertiary students, it was pertinent to the current study since it looked at the need for digital technology, specifically the use of an iPad in teaching and

learning. The present study, however is concentrated on the primary lower grades of Kasama district and is particularly focused on the teaching of Vocabulary.

2.2 The technological applications, software and learning platforms used for teaching vocabulary in lower grades.

This section presents review of studies on the technological platforms and softwares used in teaching vocabulary to early graders.

A study by Boozer and Simon (2012), indicates that, the teaching approaches effectiveness have become more closely aligned with technology in establishing curriculum and disseminating course instructions. To the extent that Cengage MindTap and other digital learning tools are utilised offers a platform for measuring learning effectiveness through grade out comes. This analysis University Business classes within the core curriculum as part of a finance major elective to measure if the use of such tools is statistically associated with higher grades. Independent variables analysed are homework (HW), Quizzes and exams. Mixed results concluded that each independent variable in a simple regression produces stronger coefficients of determination with higher beta values in classes where MindTap is used but the association is less robust in a multivariate analysis. Mean grades collectively for all courses where MindTap was used were 80.49 compared to 79.42 for courses taught without MindTap.

The study by Broozer and Simon (2021) is pertinent to the current study because it sought to obtain deeper understanding of how technological platforms (MindTap) can improve the grades among University students of Jacksonville States; similarly, one of the objectives of the current study is to ascertain the softwares and platforms used by teachers in teaching vocabulary among early graders. The study by Broozer and Simon however, differs from the present study in that it did not focus on the teaching of vocabulary among early graders, which is why the current study must be carried out. Instead it only focused on how MindTap as a technological platform would improve learning among University students pursuing business courses.

A study by Rickman (2000) reviewed the latest studies on the usefulness of technology in teaching vocabulary in Vietnamese secondary education, translation and visuals were traditionally used as major techniques in teaching new English lexical items. Responding to

the Vietnamese government policy issued in 2008 on using IT for a quality education, the application of PowerPoint was considered to be the most prevalent type of technology used in the classrooms throughout in Vietnam as Rickman (2000) stated. The paper reported the impact of implementing PowerPoint in teaching vocabulary in English classes in a Vietnamese secondary education setting. The study, with a two-group pre-test and post-test design aimed at testing the effects of PowerPoint on learners' vocabulary retention and investigated the learners' attitudes towards the use of PowerPoint-based materials in teaching and learning vocabulary. 68 grade 10 students in an upper-secondary school in the Mekong Delta participated in the study. Three instruments were used to collect data: English vocabulary tests, questionnaire on students' perceptions toward the use of PowerPoint, and interview questions on teachers' evaluation of the contributions of PowerPoint to vocabulary teaching and learning. Results indicated that participants in the experimental group outperformed those in the control group in terms of vocabulary retention and their attitudes towards the use of PowerPoint in teaching and learning vocabulary were positive.

The study by Rickman (2000), despite it being carried out in Vietnam particularly in Secondary schools, is relevant to the current study in Kasama district of Zambia, as it informs the study at hand on the effectiveness of one of the technological gadgets in the teaching of vocabulary. Rickman's (2000) study indicates that the use of PowerPoint presentations in class make lessons interactive for the students resulting in more improved students' participation in the classroom. The other similarity of the two studies is that Rickman's (2000) study had its focus on the teaching of vocabulary in Vietnamese and English, Similarly, the present study focuses on the teaching of vocabulary in Bemba and English in Kasama district.

EdTech (2019) suggest that, students can learn via online videos, audiobooks, interactive online games, and more, all at their own pace, because online content is easily updated, students can immediately access the most recent information. The study further indicates that students in the U.S. performed better in reading when both the teacher and students used devices in the classroom or when the teacher solely used application or software in the classroom.

The study by EdTech (2019) is comparable to the current study considering that it was premised on investigating the role technology has in teaching and learning in general. Though

the study was done in United States of America, it remains important to the current study because the study suggested some of the technological affordacies that can be used in teaching and how they can positively enhance learning.

A study of Kumrul et al (2022) which was conducted in Bangladeshi focused on examining how the mobile assisted language programme using some application provided by technological tools, WhatsApp affected Bangladeshi tertiary level EFL learners' vocabulary learning. The study included sixty-four EFL students who had intermediate level of English competency, and they were chosen using random sampling. After establishing the learners' homogeneity with a vocabulary examination/test, the researchers separated the participants into two categories, namely experimental group (N = 34) and control (N = 30) group, and then their vocabulary knowledge (i.e., synonyms and antonyms) was assessed. The research involved 14 session treatment with the control group using the usual traditional method and the experimental section using WhatsApp to teach new words. A vocabulary post–test for the both classes was conducted after the completion of the course. In addition, both groups were given an attitude questionnaire to see how they felt about the traditional vocabulary acquisition method and utilizing the WhatsApp approach. According to the findings of this study, the experimental group performed better than the control group. Furthermore, as compared to the other group, learners who utilized WhatsApp to improve their vocabulary skills showed a more favourable attitude toward learning foreign language vocabulary. The current research would have further ramifications for English instructors, learners, researchers, and other stakeholders as well.

The relevance of Kumrul [2022] study to this study is that it adds light to the current study by highlighting the effect of the use of technology-assisted language programs on vocabulary learning among students. A study of Kumrul [2022] was done among tertiary level learners and was carried out in Bangladesh; the current study remains pertinent because it is done in Zambia, in the context of Kasama district to assess the prevalence of technology in teaching vocabulary among the early grade learners.

Another study was carried out by Cheta and Yinka, (2016). The empirical study was a survey type armed at evaluating the degree or extent to which teachers in the present ICT age utilize the avalanche of supportive software that adorn the Education scene. The software included;

productivity, research communication, problem solving and educational, realizing their supportive role in facilitation and improvement of learning. Thus, five research questions guided the study. An instrument tagged ICT software System (ICTSS) was used in the study. A major finding of the study was that teachers utilized word processing and research software (Browser, search engines and plug-ins) very well in their lessons while other productivity software (spreadsheet, presentation, database, Graphic, digital audio and digital video editing); communication, software problem solving software and educational software, were yet to be truly explored. However, a major recommendation was that teachers needed to learn how to use the software because they would boost productivity in terms of learning outcomes .

This study by Cheta and Yinka(2016) is relevant to the current study its focus is on the use of softwares in teaching and learning. The study also suggests some of the software that can be used in teaching, the recommendations of this study informs the current study. Although this is pertinent it can not address the aim of this study because current study was done in Kasama district of Zambia , which is a developing nation.

A similar research was done by Laura, Gary, and Craig, (2017) the study established that computer-based technology had infiltrated many aspects of life and industry, yet there is little understanding of how it can be used to promote student engagement, a concept receiving strong attention in higher education due to its association with a number of positive academic outcomes. The purpose of this article was to present a critical review of the literature from the past 5 years related to how web-conferencing software, blogs, wikis, social networking sites (Facebook and Twitter), and digital games influence student engagement. The study prefaced the findings with a substantive overview of student engagement definitions and indicators, which revealed three types of engagement (behavioral, emotional, and cognitive) that informed how we classified articles. Findings suggested that digital games provided the most far-reaching influence across different types of student engagement, followed by web-conferencing and Facebook. Findings regarding wikis, blogs, and Twitter were less conclusive and significantly limited in number of studies conducted.in the past 5 year that had past, Overall, the findings provided preliminary support that computer-based technology influenced student engagement, however, additional research was needed to confirm and build on the findings. The study concluded providing a list of recommendations for practice, with the intent

of increasing understanding of how computer-based technology may be purposefully implemented to achieve the greatest gains in student engagement.

The study by Laura, Gray and Craig(2017) is essential to the current since it was premised on the use of softwares in teaching in order to improve the engagement of learners and suggested some recommendations for practice to increase the benefit from the aforementioned platforms softwares and applications. The current study was done among early graders and it exclusively primary research which made use of qualitative methodology to analyse the use of digital platforms, softwares and application in teaching vocabulary among early graders of Kasama district.

Regarding the use of softwares in teaching and learning Azza and Ahlam, (2023) observed that, the effects of the COVID-19 pandemic and the associated radical changes to the teaching landscape had rendered the employing of digital learning platforms in the professional training of teachers to become imperative. The instructional design competencies were among the most important competencies among teachers. The researcher found it necessary to test the effectiveness of digital learning platforms to provide teachers with the required competencies,(both cognitive and practical) and helped them improve the competencies. The study aimed to measure the effects of using the Google Classroom platform to develop instructional design competencies and learning engagement among pre-service teachers in Saudi Arabia. The study used a quasi-experimental approach, with a one-group design (pre- and posttest) , which included 61 female student teachers. Three measurement instruments were utilized, namely, the achievement test, the product evaluation card, and the learning engagement scale. The results of the study showed that using Google Classroom as a digital learning platform was effective in helping the pre-service teachers acquired and developed their cognitive and practical competencies in instructional design. The findings further revealed high levels of learning engagement at cognitive, behavioral, and social levels among the pre-service teachers who participated in learning instructional design through the Google Classroom platform. Our findings emphasized the need for greater investment in digital learning platforms to support pre-service teachers' professional training, as these students could benefit from the potential the platforms offered in developing their instructional design competencies.

Azza and Ahlam(2023)carried out a study which was relevant to the current study because it looked at the use of technological platforms in teaching and learning, although it was conducted at tertiary level in Saudi Arabia , the findings of this study informs the current study on the effects of digital learning platforms in teaching, it also reveals the importance of t the competencies of teachers in developing instructional design in teaching. However, ,the study at hand differs from the previous study because , this study was premised on use the technological platforms in teaching of Vocabulary in early grades of Kasama primary schools and the study used the qualitative design.

Furthermore, Simin and Athirah, (2015) did a study on the modernization of the education system, the digitalization of the educational environment and learning management systems (LMS), where one of the discovered was learning platforms, as the most urgent directions the present pedagogical work was taking to reap the benefits of the digital environment. The researcher also observed that the Education quality could be improved in different ways: by changing the content of learning, forms of learning, learning methods and teaching aids; promoting the use of learning platforms in schools; introducing programming and robotics; using learning management systems and other systems. Technologies and digital solutions were transforming the educational landscape in technology-enhanced learning environments. The study adds that, on one hand, there were many possible solutions that provided technology-enhanced learning; while on the other, there was need to transform educational processes, to transform competence in teaching, to analyze learning outcomes so that technology-enhanced environments could support knowledge construction. The researcher used many methods such as the systematic literature analyses; development of learning platform evaluation tools; analyses of learning platforms; and surveys on teachers' attitudes to learning platforms. Altogether, the 705 teachers expressed their opinion on using learning platforms as a tool for enhancing knowledge construction, providing feedback and analyzing students' learning results. The researcher further discussed the results of analyses on nine learning platforms developed in Latvia Malaysia, conducted using an evaluation tool with 22 criteria.

The study by Simin and Athira(2015)in Malaysia among teachers is significant to the current study it brought out some the factors needed for successful implementation of digital platform

usage in teaching and learning. The preset study which was undertaken in lower primary classes in Zambia specifically Kasama district, and was aimed at ascertaining the digital platforms, applications and softwares in teaching of vocabulary among early grades.

2.3 The views of teachers on the use of technology in teaching vocabulary among early graders.

Attitudes and beliefs can either enhance or constrain teachers' use of ETs for instruction. Simply put, when the perceived usefulness does not match the perceived usability, teachers tend to be reluctant to change their teaching practices, regardless of the specified training that enables teachers to comprehend technologies competently; technologies will almost certainly be funneled or used inappropriately via the traditional pedagogy. Studies reveal that teachers' attitude plays an exceedingly important role in the successful integration of ICT in teaching and learning. (Hernández-

The study by Kaumba, M. (2021) interrogated disablers and enablers in the uptake of Information communication Technologies (ICTs) in five rural primary schools in Mwinilunga district, Zambia. A qualitative research methodology and descriptive research design were applied.

An Interview schedule and focus group discussions were used as research instruments to interrogate the research problem. The Findings revealed that, the teaching of the ICT Component particularly in Creative and Technology Studies in rural schools of Mwinilunga District faced many challenges such as lack of ICT equipment, poor internet connectivity, limited skilled human resources and lack of supportive infrastructure. To overcome the disablers, various strategies were applied by schools such as use of personal cell phones as teaching devices, use of zonal schools for capacity building points in ICTs and use of ICT expert teachers as resource persons. The study recommends that Government should make Provision for computers and computer facilities in schools through collaboration with other education stakeholders, the government through the Ministry General Education needed to train more teachers in ICT teaching methodologies and there was also need to provide all schools with power supply so that teachers in rural areas can effectively implement the teaching of information Communication.

The study by Kaumba et.al (2021) is similar to the present study because it was done in Zambia and the methodology used is actually the same. Kaumba et.al (2021)'s was relevant to the current study because it informed the present study on the factors that were likely to affect the views of teachers on the use of technology in teaching vocabulary. Although this study was done in Zambia, the present study is pertinent because it focuses on the teaching of vocabulary in lower primary in selected urban schools of Kasama district, while Kaumba et.al (2021)'s study was premised on the teaching of ICT in rural schools of Mwinilinga district.

A study by Kurt and Dindar (2012) suggested that the effective use of technology in educational environments and its successful integration increased the Productivity of instructional processes. The study revealed that Constant and good-quality support was supposed to be provided to teachers for technology use in educational environments. Thus, it was necessary to find answers to the question of what kinds of activities could be used to provide teachers with constant support for technology integration in educational environments. The study aimed at determining teachers 'views and their suggestions about the process of technology integration into educational environments and investigate the problems experienced in the process. The research sample included a total of 21 teachers teaching at Tepebasi Resat Benli elementary School in the city of Eskisehir. Of all the participating teachers, 11 of them were elementary school teachers, and 10 of them were field teachers. The qualitative research method was applied. The research data were analyzed with the help of thematic analysis. The Research data were collected via the focus-group interviews held with the teachers, observations and Researcher journals. The data collected in the study were gathered under two main themes Depending on the open-ended questions directed to the teachers regarding technology use and on the related literature. These themes were „Problems experienced by teachers regarding technology Use in class and Suggestions for effective use of technology.

The relevance of Kurt and Dindar (2012) was that, although it was done in Eskisehir among elementary schools, this study had similar objectives as the current study. Besides, the findings of this study informed the current study on the methodology, data analysis procedures and the likely results on the responses on the views of teachers concerning use of technology in teaching. Therefore, the present study was important because it addressed the Zambian

situation on the views of teachers on the use of technology in teaching of vocabulary particularly in lower primary schools of Kasama district.

A study by Muhamad and Huma (2022) revealed that, the rapid expansion of the Information and Communication Technologies (ICTs) had transformed learners into digital learners, requiring teachers to integrate technology into their pedagogical approaches, where teachers' attitudes, technological knowledge, and skills played a significant role in its effective integration. From this perspective, the study presented teachers' perceptions regarding technology integration in their teaching-learning practices at all educational levels in light of the previous studies performed in the last 5 years In Pakistan. The findings revealed that teachers exhibited positive perceptions regarding technology integration in teaching-learning practices. They believed that technology-incorporated teaching assisted them in enhancing their instructional practices effectively, making the learning process exciting and interactive, and keeping learners motivated. Regarding barriers, the slow speed of the internet, load shedding, lack of infrastructure, online teaching experience, and training were reported as the main obstacles that hinder teachers from effective integration of ICT into their teaching practices. According to Ahmad, Muhammad and Huma, (2022) the study findings suggest that concerned authorities should set clear and effective policies to make efficient use of ICT by allocating a sufficient budget and ensuring all necessary facilitation (e.g., ICT infrastructure, tools, software, internet, and labs) in all educational institutions. Furthermore, particular attention needed be devoted to supplying adequate opportunities for the career development of teachers in developing technological competencies, which helped them successfully use ICT in their instructional practices.

The study further revealed that, the development of new technology and the central role it played in current times had allowed an increasing number of children and young people (CYP) to use it on a daily basis for academic, entertainment, and socialization purposes. Muhamad and Huma (2022) also noted that although the role of technology in affecting CYP's mental health and education is well researched, there was need to investigate the teacher perspective, considering educators' pivotal role in supporting CYP's wellbeing and learning. Understanding the teacher perspective could provide important information about practical issues surrounding the use of technology in education and can provide insights into how their

practices are affected by their views. Therefore, the study aimed to investigate teachers' views on how the use of technology affected CYP's emotions and behaviors. An exploratory, qualitative research approach was taken, and semi-structured interview data was collected from eight teachers and analysed thematically. The results suggested that teachers recognised the importance of technology as a learning and teaching tool, as long as it was used in a balanced way; there was also a consensus on the negative consequences of the 'socioeconomic digital divide' on CYP's emotions and behaviours . However, they held conflicting opinions on issues related to the impact of technology on socialisation processes, self-esteem, and the demonstration of specific behaviours like social isolation. Teachers' perceptions could inform strategies for using technology effectively in the classroom and for supporting CYP's mental health and wellbeing, which, then more than ever, was to be at the forefront of whole-school approaches.

Despite the importance of the aforementioned earlier study in this field of use of technology in teaching and learning, the research done by Muhamad and Huma (2022) was conducted in Pakistan among tertiary students and might not accurately reflect the view of teachers in primary schools of Kasama district of Zambia.

In order to ascertain the perception of teachers on the use technology in teaching, Mundy, Kupczynski and Kee (2012) conducted a study and observed that, although many schools are equipped with the latest instructional technologies, multiple studies have indicated that more than half of the teachers equipped with computers only used them for administrative functions, and only half of their students were reported to be using technology more than once a week. Many faculty members lacked the technological proficiency needed to take advantage of the new technologies, which made them unable to bring the technologies into the classroom and led to many standing unused in the classroom. This study analyzed teachers' perceptions of technology use in the classroom by surveying those who participated in the TeachUp! Technology empowerment program created and developed by Digital Opportunity Trust USA, Inc. (DOT USA). Mundy et al, (2012) noted that the results showed that teachers who were part of DOT USA's TeachUp! Program perceived a significant increase in the areas of student engagement, student excitement, student acceleration of learning, and student proficiency with computer technology. The analysis had indicated that faculty members needed not only to

learn how to use technology at a basic level but also to learn how to integrate that technology into their curricula. In addition, newer teachers from digital native generations needed to be taught how their acquired skills could be used to integrate technology into the classroom curriculum to provide complex cognitive engagement for their students. The study also concluded that it was essential that the role of the teacher as a professional in the classroom be not discounted when evaluating classroom curriculum development and strategy, including those that integrated various technologies.

The study by Mandy et.al (2012) is related to the current study since it offered information on the perception of teachers on the use of technology in teaching and learning, a theme that is important to it. However, the current study's objective is not premised on the views of teachers on the use of technology in secondary schools of USA a developed nation, but rather to investigate the perception of teachers of early graders on the use of technology in Kasama district of Zambia which is a developing country.

In addition Zhumabayeva et.al (2021), carried out a study that focused on developments in information and communication technologies to enable more information services to be used in education applications. The researcher observed that it was important for educators to adopt technology, follow it closely and show a positive attitude towards technology in order to be able to use the developing technology in the classroom. The study also suggested that using technology was not a privilege but a necessity. The researcher also noted that Technological developments affected the structure and functions of educational institutions. For this reason, teachers were expected to integrate their lessons with technology in order to train individuals of the information society. This study aimed to determine teachers' views on the use of information and communication technologies in education. Mixed research method was used in the study including experimental dimension and qualitative research. A total number of 58 teachers participated in the study. Results of the study provided useful implications for teachers in developing the ability to work in the information and educational environment. The study recommended that, in addition to supporting teachers with in-service training on computers, the Internet should be used to ensure continuous training of teachers. Schools needed to be supported by experts in

educational technologies, while recognizing the Curriculum to provide enough flexibility in using technology in classrooms.

The study by Zhumabalayava et.al (2021) was beneficial to the current study because it demonstrated the conditions that could enhance positive attitude among teachers towards the use of technology in schools of Kazakhstan. However, the present study used a descriptive research design and focused on teachers' perceptions on the use of technology in lower primary grades, the previous study used the mixed research method in Kasama district of Zambia.

.Linda, S. (2003) commissioned a survey to measure the role that computer technology played in today's classroom, a explored the emerging trends in education technology. This article highlighted the results of the survey and the meaning of those results. It included the Statistics on the correlation among teacher training, years of service and technology use. A study by Linda (2023)was a CDW-G national survey which found that most teachers believed that, the use of computer technology translated into higher student achievement and improved parent-teacher communication.The "Teachers Talk Tech" survey, conducted by CDW Government, Inc. (CDW-G) provided a forum for teachers to express their views about technology in their classrooms, concluded that teachers viewed computers as a valuable teaching tool that could improve students' academic performance and attention in class, while strengthening the lines of communication with parents.

More than 600 K-12 educators – represented an equal number of elementary, middle, and high school teachers – were interviewed in the survey. Forty percent of those teachers were between the ages of 35 and 49; 45 percent were between the ages of 50 and 64. The teachers had an average of 17 years teaching experience; 40 percent had taught for more than 20 years. Ninety-nine percent of the teachers surveyed said they had access to computers at school and 96 percent said they had a computer at home. Linda (2003) submitted that a large majority (76 percent) of the teachers said that training is the key to increased technology use. In fact, the survey found a strong correlation between the number of hours of computer training a teacher had and his or her belief in the benefits of computer technology. Further correlation was noted between a teacher's years of service and his or her opinion about computer use. Although 61 percent of all the surveyed teachers agreed that computers sometimes are more effective than

teachers in getting material across to students, 80 percent of the teachers with fewer than ten years in the classroom said computer technology makes their job easier; only 69 percent of teachers with more than ten years of service agreed.

The study by Linda (2023) is relevant to the current study since it brought out some of the factors that affect teachers' attitude towards the use of technology in teaching. Despite Linda's study on the role of computer technology in teaching, there are still unknown reasons regarding teachers' perception on the use of technology in teaching vocabulary in selected lower primary schools of Kasama district.

A mixed method study by (Ramos et al., 2014) was conducted to investigate reliability and validity factor of the teacher's attitudes on the use of ICTs in universities, In Tanzania, a mixed study conducted in secondary schools by Ndibalema (2014) reinforced the findings and the correlation. The research reported that teachers exhibited positive attitudes towards ICT integration. However, teachers were not particularly knowledgeable about the use of technology for teaching and learning. In other words, the interplay between technological competence, beliefs and attitudes suggests that positive attitudes alone towards technology in teaching do not necessarily entail competence in this potentially transformative technological instructional application. Teachers' perceptions about educational technological innovations vary considerably, with technophiles and technophobes present in equal numbers at most educational institutions.

The study added that, comprehending and accounting for diverse perceptions towards technologies was necessary for any school seeking to benefit from the adoption of contemporary educational technologies. This was because irrespective of how complex the technologies turned out to be, the students' achievement continuously depended on teachers developing an optimistic attitude towards them. Further revelations indicated that, it was until recently, that the adoption of mobile devices in Zambian schools was still fragile and volatile. Misconceptions abound, and the resistance by parents, teachers and other stakeholders to the integration of technology in teaching and learning was widespread. On the one hand, these attitudes, beliefs and perceptions were economic in origin. While, some were personal barriers that border on the belief that technology distracted and disrupted the learning process. This

had contributed to the slow integration of technology for teaching and learning in most Zambian schools.

Beliefs behind economic considerations revealed that Zambia was not fully developed and therefore schools which already operated with inadequate teaching resources could not afford to purchase technological devices. This also pointed to insufficient funding and failure to recognize education as the primary economic driver for development – in any country .More pertinently; these beliefs portray a lack of ICT policy awareness on the part of teachers. The researcher also observed that, there was limited sensitization on many issues, which particularly attributed to lack of information in the public domain in such matters as educational ICT policy and its curricula guidelines, and on how technologies could be used. It was also due to a lack of speedy connectivity, electricity and hardware. At the personal level, the beliefs revealed that the teachers lacked the skills to use technology for teaching and learning while some could not afford to buy technological devices such as the iPad technology.

The studies by Ramos et.al (2014) whose findings were reinforced Ndibalema (2014) is similar to the current study in that it addressed a similar objective to one the current study seeks to investigate. .Despite that it looked at teachers' attitudes towards the use of technology, the study was done among Universities and secondary respectively, and it used mixed method which makes the current study that used a qualitative method of great importance because it was carried out in schools of Kasama district among the lower graders.

In another r study by Ministry of Education(2013) disclosed that, ICT would assist teachers to the global requirement to replace traditional teaching methods with a technology-based teaching and learning tools and facilities, according to empirical studies. In this regard, The Ministry of Education, through the latest Education Blue print (2013-2025), in sighted the importance of technology-based teaching and learning into the schools' national curriculum. The study aimed at analyzing teachers' perceptions on effectiveness of ICT integration to support teaching and learning process in classroom. In Malaysia, ICT was considered as one of the main elements in transforming the country to the future development.

A survey questionnaire was distributed randomly to the total of 101 teachers from 10 public secondary schools in Kuala Lumpur, Malaysia. The data for this quantitative research were analyzed for both descriptive and inferential statistic using SPSS (version 21) software. The

results indicate that ICT integration had great effectiveness for both teachers and the students. Findings indicate that teachers' well-equipped preparation with ICT tools and facilities was one the main factors in success of technology-based teaching and learning. . It was also found that professional development training programs for teachers also played a key role in enhancing students' quality learning. For the future studies, the researcher suggested a need for consideration of other aspects of ICT integration especially from management point of view in regard to strategic planning and policy making.

A study by the Ministry of Education, through the latest Education Blue print (2013-2025), was pertinent to the present study since it placed an emphasis on analyzing teachers' perceptions on effectiveness of ICT integration to support teaching and learning process in classroom, which was a significant aspect of the current. However, the current study used interviews and questioners to collect data. This study was done in was done in Malaysia while the current study was done in selected primary schools of Kasama district of Zambia

Another study by Abdullah and Ozene, (2021) reveals teachers' views on the educational software used in primary reading and writing Teaching process. The research was considered as qualitative research as case study. The data were obtained by interview and observation. The sample of the study consists of 26 primary school teachers who teach the first graders in the 2018-2019 academic year in primary schools in the central district of Niğde, Turkey. The selected teachers were chosen using simple random sampling method. In the Research, semi-structured observation and interview forms were used as data collection tools. The data were analyzed by the content analysis method. It has been determined that educational software for students provided an advantage in terms of concretization of teaching, differentiation of activities, minimizing individual differences between students, giving attention to the lesson, giving them an opportunity to apply what was learned, addressing many different sensory organs in students, motivating and supporting students.

The study by Abdullah and Ozene, (2021). Is significant to the current study it focused on the views of teachers on use of educational software's which addresses one of the objective the present seeks to address. The present study is still important because the findings of this research Turkey, may not satisfy the needs of the lower primary schools of Kasama district. Moreover, the current study used purposive sampling in choosing teachers as participants.

According to Alzahrani (2015) the purpose of this study was to examine the effect of technology support, teachers' confidence in using technology, their beliefs about using technology, and their perceived skills on the use of instructional and application software. The data used was from 1335 K-12 teachers involved in the Technology Uses and Perceptions Survey (TUPS) study. Teachers were located in 40 different institutions across the state of Florida. According to the findings of this study, the most significant factor in the instructional and application software use of teachers was found as perceived technology skills. Therefore, professional development for perceived skills or technology competencies of teachers might contribute to increasing the instructional or application software use of teachers. In terms of confidence and comfort using technology, they both had direct and positive effects on instructional and application software. Also, the total effect of support from technology specialists for instructional software use is more than application software use. As evidenced by the models developed in this research, teachers' perceived technology skills for instructional and application software use directly and positively affected their beliefs on usefulness. Our effort to provide more emphasis on the combined effect of a collective set of factors to explain teacher use of technology leads us to address the gaps in the literature on technology use (i.e., the effect of demographic factors and technology availability).

The study by alzahran (2015) aimed to examine the effect of technology support, teacher's confidence in using technology and the teacher's beliefs. This study is relevant to the current study because its finding informs the current study on many aspects needed for a successful implementation of software incorporate in teaching. However this study did not look at the case of lower primary grades of Kasama district on the use of technology in vocabulary teaching. This is why the current study was carried out.

UNESCO (2014) reported that, a group of master educators from Zambia had received training on how to use technology effectively for learning during a workshop held at UNESCO in Paris. The workshop, held between 3 and 6 November, expanded the technical and pedagogical competencies of teacher trainers who would work with secondary school instructors from across Zambia. The 'train-the-trainer approach' ensured the workshop had a wide reach and functions to improve the effectiveness of hundreds of classroom teachers.

UNESCO (2014) reported that participants included 15 teacher trainers who would work with pre- and in-service instructors preparing to teach a new computer studies course which was recently added to the national curriculum. The training reflected UNESCO's ongoing commitment to help build the capacities of teachers in developing countries and ensured that information and communication technologies were used to improve and enrich learning opportunities.

To help the master trainers prepare instructors for the computer studies course, UNESCO structured the training around hands-on tasks to demonstrated pedagogy of 'working-with-technology' rather than 'telling-about-technology.' The participants created websites to share lesson learned at the workshop upon their return to Zambia. They also wrote sample classroom lessons that incorporated technological applications such as databases and spreadsheets. An online group was created on social media to keep the participants and facilitators connected after the training.

The Zambian delegation to Paris was led by Mrs. Celia N.M. Sakala, Director Standards and Curriculum in the Ministry of Education, Science, Vocational Training and Early Education. The participants comprised Ministry of Education officials, university lecturers and resource Centre trainers from each of the 10 provinces in Zambia. The hands-on nature of the activities won praise from the Zambian participants. Anthony Chomba, a master-trainer from the Muchinga Province said that "even though the participants had different skills and varying strengths, the sessions included everyone and at the end of the day no one felt left out".

UNESCO (2014)'s report which saw some teachers of computer studies in secondary schools from all provinces of Zambia, lecturers and other Ministry of Education officials being trained on how to use technology effectively for learning in Paris , was very significant to the current study .The teachers trained by UNESCO (2014) in Paris are more likely to have a positive attitude towards the use of technology in teaching and learning, because there is correlation between competencies and perception in terms of implementing educational technologies. Despite the importance of this report, the UNNESCO report does not address the needs of the learners in lower grades, particularly in the teaching of vocabulary in primary schools of Kasama district, Hence the need to carry out the current study.

Furthermore, the Asian Journal of Education and Training Vol. 7 aimed to examine the development of EFL students' vocabulary knowledge adopting a task-based method with 32 Thai students who enrolled in English for Communication course at a university in northern Thailand. Statement of the Problem was that Students majoring in Thai at the School of Liberal Arts, the University of North eastern Thailand (hereinafter, UNT), had encountered a number of difficulties in communicating in English. In particular, their vocabulary knowledge for writing or speaking English was notably limited. Many students reported that they lacked the confidence to communicate in English. That would have been owing to a lack of lexical resources. Several studies also reveal that many Thai students did not generally comprehend English in both spoken and written messages due to a lack of vocabulary knowledge.

The above study conducted in Thailand is similar to the current study in that Thai students' vocabulary knowledge for writing and speaking English was notably limited, just as is the case the among early grade learners in Kasama. The importance of this study to the current study at hand is that it confirms that, the teaching of vocabulary can really problematic sometimes; hence a lesson can be drawn from how Thailand tried solved the problem of limited vocabulary among the students using teaching strategies provided by technology for the enhancement of effective teaching and learning.

A study by McClung (2004) a Foreign Language (EFL) teacher who tried to improve Japanese students' learning had little effect on improving their language ability and their intrinsic motivation to improve. Consequently, a number of teachers began to use interactive technology in the classroom although it had not been systematically implemented or widely studied. Understanding the approaches of successful EFL teachers—specifically, how teachers using an andragogic approach through experiential learning might affect student engagement—was the purpose of this qualitative study. The conceptual framework focused on student-centred learning and included Knowledge's theory of andragogy and Kolb's experiential learning. The perceptions of 10 EFL teachers chosen through purposeful sampling and who regularly used technology in the classroom were gauged through structured interviews, direct observations, and document analysis. Emergent themes were extracted from the data through interpretive analysis. Results supported the fact that andragogic-based tasks with technology increased student engagement in the Japanese EFL university classroom by

directly improving interaction between students and by stimulating communication and autonomous learning. The outcome of the study was a professional development program that was designed to provide better teacher training on facilitating technology-based lessons that engage learners and improve their language skills. Positive social change will result from providing better teacher training that focuses on facilitating technology-based lessons that engage Japanese university learners' full potential and improve their language skills in more meaningful way.

This study by McClung (2004) is essential to the current study since it presents a topic similar to the current study whose finding inform the current study. The current study will exclusively use qualitative methodology just as in the study by McClung (2004) to analyze the prevalence of the use of technology in teaching of vocabulary in among early grade learners in Kasama district.

Lawrence et al.'s (2020) study on English for Academic Purposes (EAP) programs in 40 universities and colleges across North America suggested that neglect of pedagogy and content could cause training to be predominantly focused on the how instead of the why, thus failing to connect implementation of digital technologies to authentic teaching settings. Lawrence et.al (2020) observed that, practitioners' limited competence and confidence in digital technologies integration was another issue which raised some concern. Tovar Viera and Velasco Sánchez (2020) also found that English as a Foreign Language (EFL) university language instructors in Ecuador displayed limited competency and experiences with using digital technologies and consequently were not informed of ways to fully harness the positives of the technologies which were at hand. The situation was even more dire at the start of the pandemic, when the rapid and unexpected transition to distance learning could not allow much time for robust formation and enactment of guidelines and training in what worked online. That lack of professional development for language teachers was further compounded by a lack of resource availability. The study indicated that one of the main stumbling blocks was a lack of computers for student's use, which in turn took a heavy toll on the promotion of student-centred learning. Sociocultural factors, for instance the exam-oriented culture, would have also subjected teachers to teaching to the test instead of engaging in innovative pedagogical methods. Therefore, the study took the form of a systematic review, with relevant literature on

the topic of digital technologies integration in English language teaching extensively reviewed and critiqued. The study was expected to serve as a useful addition to the existing body of research in a number of ways. First, it offered a broad and holistic understanding of English teachers' practices of digital technologies integration and to be determinants of such practices. Second, the study helped to identify several gaps in research and issues in practice. Specifically, systematic reviews were useful in pinpointing methodological concerns, through which the robustness of evidence derived from prior research could be properly assessed. Furthermore, this systematic review was set out to advance understanding of practices of digital technologies integration among English teachers and the factors influencing this process. Hence, a total number of 20 empirical studies, drawn from peer-reviewed journals, were selected based on several inclusion criteria before being carefully synthesized and evaluated. The main findings derived from these studies were divided into two parts in response to the two research questions. First, in terms of implementation, digital technologies were revealed to be predominantly utilized for teacher-centred purposes. Teachers also adopted digital technologies to address different content-specific areas as well as their and students' needs. Second, several contributing factors in digital technologies adoption were found to have included teachers' pedagogical beliefs, competence and confidence in digital technologies integration, availability of resources, professional development and socio-cultural context. Therefore, the study based its conclusion on the recurring findings hence, recommendations were that provided in terms of research, practice, and policymaking.

The findings of these studies by Lawrene et.al (2020) are relevant to the current study in that it was carried out to give a solution to similar problems though the studies were carried out in various countries. These studies sought to improve vocabulary among students using the opportunities technology provide through various gadgets. Although the reviewed studies were carried out among college and university students and in other parts of the world, the findings of the study are significant to the current study because the study contended that vocabulary digital technology's adoption implied some inclusion of teachers' pedagogical beliefs, competence and confidence in digital technologies integration, availability of resources, professional development and socio-cultural context which may equally be obviously of need in the context of Kasama to improve the levels of vocabulary teaching and learning.

Lysenko et al (2019), noticed that there was a challenge with improving the quality of education which persisted because of developing countries which had limited educational resources, especially when there was little or no special training for lower primary teachers who were expected to teach beginning literacy and other essential competencies .In their review of the literature on pedagogy, curriculum, teaching practices and teacher education in developing countries' found that teachers would over-rely on basic recall, rote learning, memorization, repetition, and recitation in their practice. The study's major recommendation was that teachers needed to be able to use communicative strategies that encouraged pedagogic practices that were interactive in nature as they are more likely to be effective for student learning. In a meta-analysis of randomized experiments aimed at improving the quality of the primary schools in developing countries, similarly, a study by McEwan (2015) indicated that successful interventions worked to develop teachers' capacity to deliver effective classroom instruction, relying especially on educational technology and small group learning.

The two-phase study was designed as a quasi-experiment to learn about the impacts of the interactive early literacy software and the library of digital books and stories on primary students' reading abilities and reading instruction in Kenyan schools. For more than a term 1899 students from 48 classes learnt to read with the software. A standardized test detected significantly higher reading gains for the experimental students' than for the control group. The study was designed as a two-group, non-equivalent, pre-test-post-test quasi-experiment and was conducted in primary schools in Mombasa and Nairobi, Kenya. It unfolded in two phases; phase 1 took place in 2015 and was followed by phase 2 in 2016. During this timeframe, low primary classrooms were also experiencing the second and third year of the TUSOME national literacy programme (Let's Read; 2014–2019). In both years, experimental teachers implemented the computer-based intervention Experimental students also outperformed control students on the end-of-year exams. The system of training and support coupled with the software implementation yielded some positive albeit modest shifts in reading instruction. Building the capacity of schools and teachers would enable students to benefit from the inputs of the software after the research ceases.

The study by McEwan (2015) is significant to the current study in that, this study was premised on the impacts of the interactive early literacy software and the library of digital books and

stories on primary students' reading abilities and reading instruction in Kenyan schools. Similarly, the current study focuses on the teaching of vocabulary using technology to early graders in Kasama district of Zambia. The results of this study by Lysenko et.al (2020) influence the current study as it suggests one of the likely hindrance to the use of technology in schools as was the case in many developing countries.

Lecturers' Perception of Technological Pedagogical Content Knowledge in Nigerian Colleges of Education is another study which was carried out by Aina Kola and Abdulwasiu Adebayo Azeez, (2022), this study appreciated that, the technologies in schools globally made teaching and learning easy and also, in the era of COVID-19, prevented the spread of the virus among students and teachers. This study observed that, every nation had invested heavily in integrating technologies into teaching in its learning institutions. Teacher training institutions globally needed to prepare pre-service teachers who were sound in integrating technologies into teaching. For lecturers of the tertiary institution to achieve excellence in teaching and learning depend on their use of I.C.T. in the classroom. However, the situation in Nigerian schools is different because most teachers did not have adequate knowledge of integrating technologies into learning. Research studies showed inadequate I.C.T. devices and a low usage level among College of Education lecturers in Nigeria. This challenge had created more problems for teacher training institutions such as colleges of education. Moreover, Critical among these problems was the inability of the teachers to teach students effectively during the COVID-19 lockdown. In light of this, this study investigated lecturers' perception of Technological Pedagogical Content Knowledge in Nigerian Colleges of Education. Therefore, the study focused on technology, subject content, pedagogical content, technological content and TPACK domains in three public Colleges of Education. The Colleges of Education programmes in Nigeria comprised courses in art and humanities, science and technology. Hence, the participants for this study were sampled from all courses in the Colleges of Education programmes. The study investigated lecturers' perception of Technological Pedagogical Content Knowledge (TPACK) in Nigerian Colleges of Education. This was a survey method of research, where a questionnaire was used to obtain data from teachers in three public Colleges of Education in a state. The questionnaire was a five-point Likert scale containing 29 items on technological pedagogical content knowledge (TPACK). The data obtained were analyzed using descriptive statistics. Results show that teachers possess the

technological knowledge required for their teaching profession and use various teaching pedagogies to teach.

Besides, teachers integrated technologies to teach subject content using suitable teaching methods. Finally, teachers employed minimal technologies for their teachings, and only a few lecturers own personal technologies. One of the implications of the outcome of this research was the teacher's challenge to e-learning. This research indicated that Nigerian Colleges of Education teachers had not been adequately engaging students in online teaching during COVID-19. This finding implied that these Colleges' lecturers are not engaging in electronics learning because they did not have the required devices. The teaching paradigm had shifted from face-to-face classrooms to mobile electronic learning because of the COVID-19 pandemic. Students were engaged in remote learning at their homes during the international lockdown. Given this, students in many Colleges of Education in Nigeria must had missed a lot because lecturers did not have the technologies for this teaching mode. Technologies had replaced the conventional method of teaching and learning worldwide. by

The study by Kola and Azeez is beneficial to the current study because it sought to bring out the views of lectures in Nigeria's Colleges of Education on the use of technology in teaching, the current study has a similar objective among other objectives. The finding of this study provides insight to the present study, even though the study at hand is particularly concerned with the views of teachers in teaching vocabulary among early graders of Kasama primary schools. The current study exclusively used a qualitative.

2.4 Summary

The academic literature in the field of Educational technology in language teaching practices particularly the teaching of vocabulary, demonstrate the relevance and significance of the subject covered in the current study. The use of technology in language teaching is regarded as a crucial pedagogical strategy in the teaching and learning process, according to empirical and theoretical studies. It can contribute significantly to accomplishing educational objectives when used properly. The research approach for the study, which focuses on establishing the prevalence of the use of technology in teaching of vocabulary in English and Bemba among

early graders in selected schools of Kasama District Northern of Zambia, will be described in the following chapter with this knowledge as a backdrop.

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This chapter discusses the methodology, research design, study population, the study sample and sampling techniques as well as the methods and instruments used in collecting data. The chapter further presents data analysis, ethical consideration as well as the references used.

3.1 Research Design

A research design is a plan or blue print of how you intend to conduct the research (Kothari, 2006). Best and Kahn (2003) is a plan or blue print according to which data is collected to investigate the research hypothesis or question in the most economical manner. A descriptive research design under qualitative mode of inquiry was used in this study because it enabled the researcher to obtain, examine and comprehend the significance that various social phenomena had for different persons or groups. The researcher followed the study participants in their natural environment (selected schools), and the gathered information as was the result of the encounter. Meaning the researcher had a chance to speak to the participants in their normal environment, to observe and be able to draw inferences from their responses .The qualitative approach deals with verbal data, which assisted the researcher in understanding the social phenomena from the participants' point of view and to have a vital understanding of the subject being studied (Ng'andu 2013) This study therefore, was guided by social constructivism philosophical paradigm which enabled the researcher to have an understanding and be able to explain in belief about the nature of reality, what was understood about it , and how the researcher acquired this information that described existing phenomena by asking individuals about their perceptions, attitudes, behaviour and values.

3.2 Study population

According to Mugenda & Mugenda (2003), in order to provide an accurate and reliable description of characteristics, attitude and behaviour of its members, a sample of the population to be studied is sufficient. For this study, the target population was drawn from Kasama District of Northern Province- Zambia in public primary schools, which are (V

Primary School, W Primary, X Urban Primary school, Y Primary school and W Primary School) five in number respectively. Therefore, this included the teachers of grade 2 to 5 with their pupils from the stated schools.

3.3 Study Sample and Sampling Techniques

This study had the sample size of four teachers from each school and four pupils from Grade 2-5 from each school giving total of 40 participants. This study involved random sampling and purposive sampling.

3.3.2.1Purposive Sampling

According to Omari (2011), purposive sampling is the picking units most relevant or knowledgeable in the subject matter of the study. Purposive sampling was used in selecting teachers as respondents. Primary teachers were selected because they were considered to have relevant information about the topic under study.

3.3.2.2 Simple Random Sampling

This provided an equal chance for every member of the population to participate (Creswell, 2014). This method was used in the selection of students as respondents. Some pieces of paper with numbers 1 to 10 will be put in a box and learners will be asked to pick the numbers, the learners who will the numbers 7 and 9 will be ask to participate in the interview,

3.4 Data Collection Method

Methods of data collection refer to the methods the researchers use in performing research operations (Kothari, 2004). In this study primary data was obtained using questionnaires, observation and interviews, while secondary data was gathered from various documents, journals, books, the Internet, websites and reports relating to this study.

3.4.1 Questionnaire Method

Kombo (2006), a questionnaire is a list of questions arranged systematically and designed to solicit information from the individuals. The researcher used open-ended questionnaire to collect information from pupils and teachers.

3.4.2 Interview Method

The interview is a method of data collection involves the presentation of oral-verbal stimuli and reply in terms of responses (Kothari, 2004) it involves structured and semi-structured interview. The researcher used semi-structured as the respondents were few. Also, the overall reason for using the interview method was that this study involved experiments. In this study, the interview was used for teachers and Pupils.

3.4.3 Observation

This method helped the researcher to collect data by observing the teaching of English in the classroom using Educational Technology. Then the observed situation in the classroom and existing literatures for the study was used as a source of variables constructed in the questionnaire. The researcher opted to use this method because it provided relevant information. Also, it provides room for the researcher to verify the information acquired through questionnaire and interviews.

3.5 Data Analysis Procedure

Data analysis is a process of inspecting, cleaning, transforming and modelling data with the goal of discovering useful information, suggesting, conclusion and supporting decision making. (Hellerstein2008). Data collected was analysed qualitatively. Qualitative data was analysed and interpreted by organizing data into themes or topics guided by the objectives of this study then establish the relationship among these themes or topics.

3.6 Interview Guide

Non-standardized semi-structured interviews are commonly deployed in qualitative studies to get in-depth responses to research questions. According to Creswell (2014) the researcher

would have a list of important themes, problems, and inquiries to address. Depending on the direction of the interview, the sequence of the questions can change in this form of an interview, and extra questions can be asked (Kombo and Tramp, 2006). Kambo and Tramp (2006) suggest that no system of inquiry can be as illuminating as an interview in order to justify this tool in data collection. It is organic and offers accurate details about a phenomenon. Since data are facts or number from which references can be derived, there must be a process of data preparation before information can be presented and interpreted. Data can be seen as the raw material from which knowledge is obtained, much as trees are the raw materials from which paper is generated. In general, the term "data" refers to the fact that some knowledge or information already existence has been represented or coded in way that is suited for improved processing or use. After being gathered and analysed, data only becomes information that can be used to make decisions in some way. A primary source is one where the researcher collects the data initially, whereas a secondary source is one where the researcher obtains data that has already been gathered by other sources (Ng'andu, 2013).

The researcher used an interview guide on teachers in light of the aforementioned. The strategy was chosen in accordance with Maree's (2007) assertion that interacting with people is the best way to learn their perspectives on the world and how they live. The researcher used interviews to better comprehend the experiences and points of view of the participants. The researcher believed that participants who had real-life experience owing to the interviews. The researcher was able to learn about the experiences, sentiments, and opinions of the teachers regarding the use of language in the classroom at multilingual institutions. Participants were asked for their consent before responses were recorded. This gave the researcher the opportunity to receive both verbatim and handwritten responses for purposes of crosschecking and response verification.

3.7 Classroom lesson observation

The data was gathered through the observation method of data collection. The use of technology among 20 teachers during the teaching process was observed notes were taken. The use of technology among pupils was observed in class during lesson observation from the five schools' lower primary schools (Two Grade 2 to 5 classes and two classes per school).

The observation method was used to monitor the use technological gadgets in teaching vocabulary among early grade leaners and teachers and field notes taken. An observation, according to Marshall and Rossman (2010), is the methodical recording of observable phenomena in the wild. According to Creswell (2012), observation refers to the researcher taking field notes while observing people's behaviour and activities at the research site. This method was employed in this study to gather data to establish the use of technological gadgets usage in the classroom when teachers were teaching vocabulary lessons. To do this, the researcher took notes while simultaneously attending lessons to study the practical use of language activities in four primary schools.

3.8 Data Collection Procedure

Setting the parameters for the study and data collecting, as well as the processes taken to obtain information to address research questions, are all part of data collection methods (Creswell 2009). As a result, the University of Zambia's ethical clearance committee was contacted for clearance and introductory letters in an effort to follow the data collection protocol. Additionally, the researcher requested approval from the DEBS office in Kasama district. The researcher used an interview guide on teachers and had classroom observations on various days, each requiring an estimated 30 to 40 minutes, after receiving DEBS approval to move forward with data collection. However, consents from the participants and relevant school heads were obtained before collecting data from the participants. The participants were given the full explanation of the study's goal as well as assurances that the information collected would only be used for academic purposes.

To make data gathering in the field easier, the aforementioned was done. This made it possible for the researcher to speak freely with the teachers at the chosen schools.in general, rigorous adherence to the research protocol was a requirement for participation in this study. The researcher listened carefully and recorded pertinent terms as the individuals shared their opinions. The replies that were more closely related to the study's primary themes received special consideration. In order to prevent it from affecting the participants' responses, the researcher's opinions about the study were never mentioned during the interviews. As much as possible, time was provided to each participant to express their opinions. The interviewer

always thanked the subjects for their cooperation and their important time at the conclusion of each interview.

3.9 Data analysis procedure

Data reduction, data display, and conclusion drawing or verification are the three tiers of operations that make up data analysis in the qualitative paradigm, according to Yin (2011). When it comes to the analysis of data, there isn't a single approach that can be used in all situations; instead, the methodology is determined by the study objectives (Lincoln et al 2011). At the start of the data collection process, the researcher becomes familiar with the information gathered by carefully looking through the data and noting themes or codes.

Following that, data was distilled into common words, phrases, recurrent themes, or other patterns that aid the researcher in comprehending and interpreting the data. This aided the researcher in determining the relationships between the main categories and their subclasses. The themes found in data are then brought together through selective coding in order to show how they relate to one another.

Therefore, this study used a thematic research design under qualitative mode of inquiry. The data was then arranged, accounted for, and explained in accordance with participants' perceptions, values, feelings, and experiences in an effort to construct their understanding of the phenomenon. This was done in an effort to make sense of the data collected in terms of participants' explanations or definitions of the situation, noting patterns, themes, categories, and regularities as explained by Cohen, et al. (2011). In order to interpret the data after it had been analysed, emergent patterns, concepts, and participants explanations were compared to the theory chosen for the study, the associated literature that had been read in chapter 2, and the recently discovered information. The above steps can be summarized as follows;

i. Familiarization: this process involved learning about the data. It's crucial to obtain a complete overview of all the facts. Reading through the notes made and generally familiarizing oneself with the data were all part of this process.
ii. Coding: the researcher used labels or codes to emphasize and characterize the content of selected passages in the texts. After that, the data that had been coded was gathered into groups to provide an overview of the key concepts and terminologies.

iii. Creating themes: after observing the codes, recurrent themes were created by looking for patterns within them. Codes that were deemed unnecessary at this time were eliminated.

iv. Themes were examined in this section to ensure that they were accurate and relevant representations of data.

v. Naming and defining themes: in this step, topics were identified and described. The process of defining themes entailed precisely what each theme represented and determining how it aided in the comprehension of facts. The process of naming themes includes creating a good sensible name for each topic.

vi. Data presentation- The researcher concluded by presenting data that matched the aims and study questions that were described in chapter one.

3.10 Trustworthiness

Credibility, dependability, transferability, conformability, and authenticity are terms to describe the elements of data trustworthiness in qualitative research (Lincoln et al 2011). According to Creswell (2007), there are eight steps for ensuring reliability: member checking; think description; external audits; triangulation and various data resources; peer review and debriefing for external checks; negative case analysis; clarification of researcher bias. Since researchers do not employ instruments with established criteria to ascertain validity and reliability in qualitative investigation, trustworthiness is used to accomplish so (Cresswell, 2012). In this study, trustworthiness was centred on the study's dependability, believability and conformability.

3.11.1 Credibility

The confidence that can be placed in the veracity of the research findings is known as credibility (Mulenga, 2015). This guarantees the validity and accuracy of research findings. Credibility in this study is ensured by using a variety of data collection techniques and altering the interview criteria. The responses were cross-checked and validated by the researcher using member check.

3.11.2 Dependability

The steadiness of the results throughout time is referred to as dependability (Lincoln, 2011). Participants must assess the study's conclusions, interpretations, and recommendations to ensure that they are all supported by information obtained from the study's informants (Creswell, 2012), by making sure that the outcomes are completely explained, and every detail is provided, dependability was maintained. Additionally, enquiry audit assessed in making sure that the results were reliable and repeatable.

3.11.3 Conformability

Continuity of outcomes through time is referred to as dependability (Lincoln, 2011). The study's recommendations, interpretation, and findings must all be evaluated by partisans to determine whether or not they are backed up by data gathered from the study's informants (Creswell, 2012). Reliability was preserved by making sure that the results are fully explained and that every detail is given. Inquiry audit also helped to ensure that the outcomes were trustworthy and reproducible. In qualitative research, authenticity was also essential. The researcher wanted assurances that the researcher's conduct and evaluation were sincere and liable (Kambo and Tromp, 2006). In this study, the researcher concentrated on accurately and fairly expressing the participants' experiences.

3.12 Ethical Considerations

Every research endeavour must be conducted ethically. According to Cohen et al. (2011), ethical issues that arise in educational research in particular can be incredibly deep and intricate, and they frequently put researchers in moral binds that may be seen remarkably insoluble. Ethics is concerned with preventing harm to the welfare and interest of the research and researcher subjects as a result of the research being done. When research participants endure worry, stress, guilty, and self-esteem damage during data collection and in the interpretations drawn from the data they provide, Creswell (2014) warned that researchers would harm the people or groups they investigated. The researcher followed ethical guidelines that were intended to safe guard persons who were taking part in the research. Participants in this study received an overview of the study's overall goal. The researcher highlighted that the

study was scholarly and intended to satisfy one of the objectives for an education matters program. They were consideration made to properly follow the ethical guidelines by the University of Zambia.

In order to protect the interest of both the researcher and the participants, ethical considerations were given careful consideration throughout the research. Since ethics involve two groups of people, individuals conducting research should be conscious of their duties and obligations, and those being "researched upon" have fundamental rights which should be maintained. The researcher requested permission from the University of Zambia ethic committee as a result. The DEBS office issued a permit. Participants were given a covering letter outlining the study's objectives so they could freely provide the information. Any interview would start with an introduction statement informing participants of how the conversation would progress and assuring them of the privacy of the information they would be sharing.

3.12.1 Reciprocity

In research, the researcher would not provide favours or payments in cash or hand in exchange for the participant's generosity and voluntary participation in the study. This improved communication between the researcher and the participants and they may also be seen as a means for the researcher to recognize the participant's participation to the study. To the greatest extent possible, the researcher the researcher did not offer any type of compensation to the volunteers. First of all, the researcher lacked the funds necessary to compensate the volunteers. Secondly, this can impede participants' responses, lowering the calibre of the data to be gathered from them in that individuals might offer the researcher positive responses in an effort to merely please the researcher. By not employing any sort of money to show appreciation for the research participants in order to get information from them, the researcher for this study ensured that reciprocity does not in any way impact the participant's responses. In order to acknowledge the participants contributions to the success of the study, the finding of this investigations was made available to them upon request.

3.12.2 Confidentiality

In research, confidentiality refers to the idea that participant identification information won't be shared (Marshall and Rossman, 2010). Participants' privacy was respected by keeping their names and other identifying information in secret at all the times. In order to encourage the participants to provide the data that the researcher was seeking during the data collection procedure, this was simply done to ensure they were safeguarded. The informed consent process involved obtaining the participants' voluntary participation and informing them of their rights to withdraw from the study at any time. The researcher greatly respected the rights to and dignity of their participants and made it clear to them that they were free to do so at any time they desired. All participants received guarantees of complete secrecy and privacy of their answers.

It should be highlighted that in some study, maintaining secrecy anonymity maybe challenging to implement. In this situation, certain institutions or participants may be easily recognized since they have distinguishing characteristics (Creswell, 2009). As the researcher describes the study's circumstances and participant profiles, these characteristics may become apparent. In this study, precautions were taken to make sure that readers would not even be able to quickly identify the participants by name based on the presentation of the findings. Particularly when creating verbatim, codes were utilized to denote the participants and names of the schools.

3.12.3 Health considerations of participants

Since data was gathered part of the when there was COVID-19, the researcher made sure to take health precautions into account as indicated by the health professionals, such as keeping a social distance when conducting interviews and classroom observations, using face masks, and avoiding crowded areas when conducting interviews.

3.13 Summary

The methodology used for this study was thoroughly described in this chapter, including details on the research approach, research design, study site, target population, sample size, sampling techniques, research instruments, data collection techniques procedure, data

analysis, trustworthiness, and ethical considerations provided at the end. The next chapter will deal with analysis, discussion and interpretation of the findings.

CHAPTER FOUR: PRESENTATION FINDINGS

4.0 Overview

The previous chapter presented the methodology of this study by highlighting on the research design and the mode of enquiry. The results of this study are presented in the current chapter. The findings are organized in relation to the research questions. The data is presented following research questions which are modified as main themes. The study sought to address the following research questions:

(i) What technological gadgets, if any, did teachers use when teaching vocabulary among early graders?

(ii) What technological applications, software and learning platforms were used for teaching vocabulary in lower grades?

(iii) What were the views of teachers on the use of technology in teaching vocabulary among early graders?

Despite the adherence to the research questions, the chapter presented them as thematic areas with other more specific subthemes emanating from the data where voices and narratives of respondents are presented.

4.1 The Use of Technological Gadgets in Teaching Vocabulary among Early Graders.

This first research question of the study intended to establish the technological gadgets, if any, that teachers were using when teaching vocabulary among early graders in selected primary schools of Kasama district. In-service teachers were interviewed face-to-face to get information on this question. The results revealed a range of opinion regarding the use of various technological gadgets in teaching vocabulary among early graders. The participants were asked to mention the forms or kinds of technological gadgets they used when teaching vocabulary. The results showed that technological gadgets such as mobile phones, laptops, desktop computers, and projectors assisted them in improving learners' vocabulary and made both teaching and learning easier.

4.1.1 The Use of Mobile Phones to Teach Vocabulary

The findings demonstrated that the teachers used mobile phones as the most available technological gadgets to teach vocabulary in primary schools of Kasama. The interviews with in-service teachers revealed that teachers used a variety of mobile phones as demonstrated by the teachers' responses below:

> Teacher 3 from school V: *The phone help me a lot in teaching vocabulary in that it I used it to check the correct pronunciation of words that I am teaching that day.*
>
> Teacher 14 from school X: *The recordings on phone help me to teach vocabulary, because I used the recorded stories on my phone and ask learners to identify the new vocabulary as they listened to the story of the day.*
>
> Teacher 5 from school W: *the technological gadget that I use most of the time is my phone, I download the songs that contain the words or sound that I will be teaching. Sometimes I upload the picture for the word which Intend to teach, and that makes my work easier than drawing on the board. The more I use technology in teaching the more affordances I discover to make my work easier*.
>
> Teacher 13 from school Y: *Most of the time, I find the phone recorder App helpful to use during assessment of vocabulary fluency. Somehow, this recorder can be a way of record keeping because you even grade them at another time if I get to grade immediately.*

As can be seen from the teachers responses above, finding showed that teachers used the used the phone for various activities relating to the teaching and learning of vocabulary. This was also supported by the observation data which showed that some teachers used their phones when teaching vocabulary. In some of the classes the learners confirmed the use of phones by teachers in vocabulary lessons.

4.1.2 The Use of iPad and tablets in Teaching

Several other teachers revealed that they used iPad and tablets to teach in class on various topics including vocabulary. The teachers indicated that the iPad and tablets they used were self-owned and did not belong to the school.

> Teacher 9 from school X: An *iPad helps to save a lot of time because sometimes I just download some videos which my learners watch, the videos have many illustrations on the vocabulary to be taught. Sometimes I watch the video to see other strategies others use to teach various concepts in language which include vocabulary teaching.*
>
> Teacher 5 from school Y: *Most of the time, I find the tablet recorder App as it is a good resource during assessment of vocabulary fluency. The phone help me a lot in teaching vocabulary in that it I used it to check the correct pronunciation of words that I am teaching that day.*
>
> Teacher 3 from school V: *said that, the more I use an iPad table teaching the more affordances I discover to make my work* Teacher1 from School V: *Even though there are various forms of technological gadgets, mostly I use my phone since it's the only form of technology available for me. I use game songs from my phone which help the learners to learn vocabulary while having fun.*

The data from teachers mentioned above agrees with what the researcher observed. The teachers said the gadgets they used in teaching were personal properties.

4.1.3 The Use of Laptops, printers and Desktop Computers in teaching.

Several teachers indicated that they used laptops when teaching vocabulary in classroom, The teachers indicated that the laptops they used were owned by them and did not belong to the school. Some participants involved in the study used desktop computers to plan teaching topics while others used the gadget in assessment preparations and record keeping.

Teacher 17 from school W: *I use my laptop when assessing learners' vocabulary. This gadget also helps me in recording keeping of all the information regarding assessments which makes it easier to track the progress of every child.*

Teacher 9 from school X: *A computer helps to save a lot of time because sometimes instead of writing my lesson on the board, I just make my learners watch videos that have many illustrations on the vocabulary to be taught. This makes learners to be more interested and pay extra attention as I teach. Sometimes I watch the video to see other strategies others used to teach various concepts in language which include vocabulary teaching.*

The data from teacher 2 from school V agrees with that of teacher 5 from school W. These teachers had the following to share; *The more I use my laptop, the more the functions I discover such that, I no longer waste time drawing pictures to illustrate the new vocabulary of the day, I just print what is provided. Sometimes I use the tasks provided on these gadgets if they seem to be more appropriate.*

Teacher 1 from school y: *For class assessment preparations and record keeping and other related issues, I use the desktop in the staffroom. I also write and keep my lesson plans on this gadget.*

Teacher 9 from school Z: *The desktop computer helps me to prepare assessments and lesson preparation. Sometimes I print out word cards and stories to help me teach the vocabulary of the day.*

Teacher 3 from school V: *The form of technology I mostly use is a desktop and a printer, most of the assessments in use in the aspect of vocabulary teaching are printed so that it becomes easy to keep the assessments for future use.*

Although most teachers from the five schools reported the use of mobile phones and computers during interviews, the researcher did not observe the use of any of these gadgets during lesson

observation with exception of two schools where a phone and a laptop was used in a vocabulary lesson. In the two schools, diverse usage of technology by both teachers and learners was observed where learners were listening to a game and a song played on the teacher's mobile phone.

4.1.3.1 Interview with the learners

> Pupil 1 from school Z: *Yes sometime our teacher gives us printed word card and stories to read in class and also for our homework.*
>
> Pupil 5 from school V:*I have never seen my teacher using any kind of technology in class*.
>
> Pupil 6 from school X: *No, our teacher only teach us from the board.*
>
> Pupil 7 from school Z: *At times my teacher makes us listen to game songs from the phone, and we enjoy it.*
>
> Pupil 9 from schools Y: *Our teacher sometimes uses a laptop where we watch and copy some tasks.*
>
> Pupil 4 from school Y*: During the tests sometimes our teacher uses the tablet where we read the words and listen to the pronunciations.*
>
> Pupils3, 6, 10 and 12 from school X, Y, Z and W*: Said that, we have never seen our teachers use any form of technology in our language classes but we write typed question papers when we have tests.*

4.2 Technological Applications, Software and Learning Platforms used for Teaching Vocabulary.

The second research questions sought to establish the nature of applications (Apps), Software and Learning Platforms that teachers in schools used to teach vocabulary and other topics. A few teachers indicated that they used WhatsApp, Facebook, TikTok, Microsoft tools such as word and PowerPoint, and YouTube. The following voices reflect what teachers said.

Teacher 10 from school X: *I use WhatsApp to send notes to my pupils especially homework so that their parents can help them. This homework is usually typed on word shared with them parents through a WhatsApp group which we created at the beginning of the year.*

Teacher 2 from school V: *"I download word games and stories from face book which I latter use when teaching. This really helps me to make my work easy and interesting too. Technology provides the affordance that is easy and convenient to use when teaching. I write my lesson plan on the laptop."*

Teacher 5 from school W: *the technological application software that I use most of the time in my phone is You Tube and Tick Tok I download songs that contain the words or sound which I later use when teaching.*

Teacher 4 from school X: *Yes, I sometimes incorporate the use of technology applications such as Microsoft power point when teaching as it is effective to teach with visual picture for the word which I intend to teach, and that makes my work easier than drawing on the board. Sometimes I use word games in teaching and I have discovered that it makes my work easier.*

From the findings, it can however be deduced that, the use of technology comes with Diversely challenges varying from one school to another school, the earlier findings indicated that most of the teachers were observed using phones for various function such as Facebook, WhatsApp and Tiktok.

4.2.1 Interviews with learners on the use of digital platforms, software's and applications.

Most of the learners in classes indicated that, their teachers had never used any form of software in class when teaching vocabulary. However, another smaller group which said that some times their teachers used digital platform, software and applications in teaching vocabulary. The conversations went as follows:

Pupil 12 from school Y: *Our teacher sometimes sends work on my parents WhatsApp.*

Pupil 15 from school Z: *Our teacher shows us pictures and other illustrations from YouTube and Tiktok and we like watching from Tiktok.*

Pupil 13 from school Z: *Our teacher taught us how to get language lessons on Facebook, I use the phone at home to learn independently.*

Pupil 18, 17, 11, and from schools W, X, Y and Z, respectively. *Said our teachers do not uses and form of software when teaching.*

4.3 The Views of Teachers on the Use of Technology for Teaching

The findings from the third research question suggested that most teachers had a positive attitude towards the use of technology in teaching vocabulary. Teachers stated that the use of technology in education was important as it enhanced the delivery and learning of content.

The findings also suggested that technology provided tools that could facilitate learning. Further, it was observed that if technology was used in conjunction with interactive media, technology would play a huge role in guiding the development of young learners and would enables them to play and express themselves while cultivating vocabulary skills in a safe and engaging way.

Further, the providence of technology had potential to deepen learners understanding and improve the skill of listening and speaking for better communication in both written and spoken form. When participants were asked to share their views about the use of technology in teaching vocabulary, the majority indicated some positivity towards this idea as they felt that technology provided many tools and strategies that when incorporated in teaching would make both teaching and learning easy. During interviews, teachers said the following;

Teacher 11 from school W: *I think the use of technology in teaching is helpful as it enhances understanding, motivates learners and makes teaching easier. Further, technology helps in making the task of*

assessing and tracking of learners' performance easier since both the assessment and performance record can be stored safely for a longer period and be shared whenever there is need.

Teacher 8 from school W: *Yes, technology should be incorporated in the teaching of vocabulary, because, of its multimodality in nature. The of technological strategies promote inclusiveness in classroom teaching because, for example, my class is a class of mixed abilities, I use pictures which I download from internet to when teaching new words to my learners so that learners with hearing challenges can also benefit.*

Teachers 7 from W: *My learners are able to associates the word with the object on the picture. I have also observed that when I use any technological tool in teaching, my learners are able to retain the information longer and with much easy as compared to instances that I use traditional methods. Further, I have a very noisy class but when I am using my phone or laptop in teaching my learners' attention is attracted and they stay quiet but following with understanding.*

Teacher 12 from school X: *I am a friend of technology; due to lack of material I use my laptop and sometimes my phone to research the information and illustration of words I am going to teach. Furthermore, I download songs, word games and stories which I latter use when teaching. This really helps make my work easy and interesting. I also write and store my lessons plan on the laptop.*

Teacher 14 from school Y: *Said that I use my I am assessing my learner's vocabulary, it saves time and it is more convenient in terms of record keeping. Integrating technology-based strategies help keep the learners motivated throughout the lesson hence reducing on absenteeism. Ever since I started using technology completing the syllabus has never been challenge.*

Teachers 4 from school V: *Technological tools are a resource in teaching as they provide among other affordances, unlimited information that widen the teachers understanding on a wide range of topics of teachers' interest. Besides, technology provides programs that can take o role of a teacher where a teacher can record lesson and post audio or videos on WhatsApp, YouTube, Tik Tok, Facebook, work also be kept on the computer so that learner can use the information at their convenient time. For example, during the pandemic time schools were closed but on-line lessons were the only alternatives that save to cover the lost time.*

Teacher3 from school V: *Technology provides a role of a diary to both the teacher and the learners. The teacher can keep the record and the learner can also use the recorded work this also makes the work of the teacher easy in case there is need to handover the class to another teacher.*

Teacher 5 from school W: *Teaching using traditional ways can be boring at times, learners need more interesting ways. Additionally, technology provide tools that can be used for reference by other users and the owner at any time, for instance, lessons on various topics can be downloaded on different software and be used by anybody who may need to. Using technology can help learners improve the four language skills because it provides materials which support constant and regular practice.*

Teacher 4 from school V: *Technology provides words reference resources which are excellent. I use visual dictionary websites to search for meaning of the vocabulary I will be teaching, besides when I have challenges, I get in-time support while reading. I wish all my learners had these gadgets, because it was going to be easy for them to expand their vocabulary knowledge in the comfort of their homes.*

Teacher 3 from school V: *For me, I find the use of technology helpful in terms of serving time. I have an overcrowded class and sometimes I get tired trying to explain some concepts, but if I had a PowerPoint projector, it could help save the energy. Sometimes my learners are noisy when I use any form of technology, my learners become stimulated to pay attention because of the visual support.*

Teacher 5 from school W: *The use of technology helps me to expose my learners to use media express vocabulary knowledge. Learners whose parents have these gadgets at home always make effort to ask me how they can access the games, songs and audible stories so that they could use their guardians' devices when they get home. Sometime the come and sing the game songs and retell the stories they learnt independently away from school.*

Teacher 1 from school V: *since I started using technology, my learners have learnt to read simple story books which they down load from the phones with help of their parents. This has helped the learners to increase the reading volume by reading digital text and increase reading volume listening to digital-texts with a text-to-speech tool and audiobooks.*

Finding suggested that, participants appreciate the incorporation of technological strategies in language teaching. Teachers confirmed that modern electronic gadgets had many benefits that teachers utilized in improving vocabulary. However, the participants were of the view that there was need to create hands-on opportunity for learners to manipulate word features in a way that allows them to generalize beyond isolated individual examples to entire group or words that are spelt the same way. They also felt that there was need to develop a deliberate program that would compel teachers to incorporate technological strategies with traditional pedagogies so that there would not be any teacher who would think the use of technology in language teaching is an option or just an initiative of the teachers. This would further help teachers who may not know the point at which they can probably make use of technology in their lessons.

4.3.1 Views of Teachers on non-Usage and inconsistencies in use of Technology in Teaching Vocabulary.

Teachers in primary schools of Kasama district in general have a positive attitude towards the integration of technology in teaching vocabulary among early graders. However, the interviews and lesson observations revealed that most of the teachers do not use technology in teaching, as evidenced in the discussion below:

> Teacher 10 from school X: *Yes, I incorporate the use of technology when teaching but it's not as effective as it is supposed to be when it is done in special rooms. I came from a private school where they have English laboratories where all forms of gadgets are stored and made use of. Lack of supporting teaching resources is a hindrance to effective instruction for learners. School management should make efforts to purchase most of the required resources and facilities so that learners can be exposed to multimedia facilities in language learning. The use of technology proved to be very effective at a private school where I once taught, because we used to have periodic seminars where all teachers had their knowledge refreshed. New teachers would be trained in this area upon reporting.*
>
> Teacher 9 from school Y: *The school has no technological tools and I equally do not have a smart phone so it is impossible to incorporate technology in my teaching.*
>
> Teacher 5 from school W: *I find it difficult to use my phone or laptop in classroom because there is no power to charge the gadgets. Sometimes, internet is a challenge. Moreover, the school does purchase bundles and so I find the use of technology expensive.*
>
> Teacher 4 form school V: *I do not know where and when I should use technology in my teaching, moreover, I do not know how to use any technological gadgets in teaching and I feel it wastes a lot of time.*

> Teacher 7 from school Z: *There are no special rooms for language teaching where technological equipment can be kept so that learners can access and have hands on(practice). For technology to be effective learners must interact with the gadgets.*

The majority of teachers who were interviewed disclosed the reasons such as lack of suitable technological tools or gadgets such as desktops, computers and projectors among others. Some schools did not have access to electricity in the classrooms, these hindered teachers from using technology effectively. Hence, using their phones which they charged from home. Other teachers said they did not know how to operate some of the devices. From the findings, some teachers indicated that the only gadget they had access to, were their phones this could not allow them to explore a wide range of affordances the use technology comes with. Besides, schools did not have access to internet and teachers could not afford to buy bundles. The other factor owing to the reason for not using technology was the overcrowded classrooms against one gadget which was teacher owned.

4.7 Summary

The majority of teachers who were interviewed stated that they incorporated the use technological strategies in classroom teaching because technological strategies helped to ensure that learners are engaged in their learning and the work of the teacher was made easy by reducing on writing on the board and minimized explanation as all these would be done through the use of technology. The use of technology helped the teachers to meet their objectives with the expect since the use of technological tools enhance understanding of concepts. Most important of all facts was the fact that most of these participants found their collaboration with parents was strengthened and parents were able to also be aware of the performance of their children through homework and sharing of progress report via WhatsApp.

CHAPTER FIVE: DISCUSSIONS OF FINDINGS

5.0 Overview

The findings of the study were presented in the previous chapter. This chapter presents a discussion of findings. Reference is made to the literature and theory that the study adopted, to discuss the implication of the findings on the prevalence of teaching vocabulary in Bemba and English using technology in selected schools of Kasama District of Zambia as indicated by both teachers and learners. In discussing the findings of the study, the discussion is presented under research objectives as follows:

5.1 Technological gadgets teachers use when teaching vocabulary among early graders

Findings indicate that teachers found out that technology provided a lot of tools that they needed to incorporate in order to teach vocabulary in English effectively. The findings of the study established that among other teaching materials used in teaching vocabulary among early graders were various technological gadgets which included phones, laptops, projectors, recorders and desktops. These finding implies that teachers of early graders used the aforementioned gadgets in teaching vocabulary in the classroom. These findings correlate with pan (2003) who indicates that China found the modern electronic technologies such as radios, films and projectors to be beneficial, reforming and efficacious in improving educational quality across the country..

Some of the teachers were observed using their phones while very few used iPad, laptops, tablets and desktops. Despite the some of the teachers' knowledge to operate PowerPoint projectors and other gadgets not mentioned above, none of them was seen using these other devices owing to a lot of factors which includes non-availability in schools, to lack of power connection to poor internet. The findings are supported by Chatel (200) who adds that the use of iPad has a lot of advantages than the use of ordinary teaching strategies because iPad provide for both visual and audio components which increases vocabulary knowledge, leaners' engagement and foster positive behaviour towards learning. This also fits well with Kisumu (2002) whose findings disclosed that primary schools in Kenya used the radio to improve the

teaching and learning of English to enable learners communicate fluently, independently and accurately in everyday life.

The study showed that teachers in Kasama aware that vocabulary development is a vital aspect of literacy development which needs to be handed with almost concern, no wonder most of them used at least a form of technological tool in one way or the other in their lessons. These results are in line with discoveries of Chabinga (2001) who acknowledge that some schools in Northern Province particularly in Mungwi utilized zed iPad (iPad) in teaching and learning of English language. Consistent with Chabinga (2001)'s observations Godwin's findings, concluded that iPad promoted collaboration and learner centeredness hence facilitating self – directed learning a mode favoured by both teachers and learners. There has been a call for all schools in Zambia to embrace inclusive learning. Some teachers in Kasama indicated that, the use of technology was another way to enhance inclusiveness of learners of all levels and different abilities. This is as contended by Uganda (2021), which meant that, the Ugandan government needed to increase findings for ICT such as laptop, smart phones, iPad and many more in primary schools to cater for the needs and requirements of children with dyslexia in their learning. These studies concede with what Rickman (2000) revealed, that the use of PowerPoint was facilitative in teaching vocabulary in English classes in a Vietnams and participants in the experimental group outperformed those in the control group in terms of vocabulary retention, PowerPoint cultivated positive attitudes towards the teaching and learning of vocabulary.

The study has demonstrated that when teachers and learners used technological tools in teaching and learning, purposeful interaction was encouraged among them. This was uncovered in Kumrul et.al (2022) 's study conducted in Bangladeshi which focused on examining how the mobile assisted language program using some applications provided by technology, affected vocabulary learning. Kumrul et.al (2022) commended the use of WhatsApp as it favoured vocabulary learning and improved learners' attitudes towards learning. Mobile assisted language programs can make teaching and learning easy, prevent spread of virus among students and teachers (in the era of COVID 19) and make marking and results sharing easy, Kola and azeez, (2022).

The study demonstrated even more favourable effects of the use of technology in language teaching in terms of interactive pedagogical practices. MClan (2015) s that shares that, relying on technology and small group learning is a successful intervention to develop teachers' capacity to deliver effective classroom instructions. Computer - based intervention could enable students to benefit from the inputs of software when used in teaching language. The findings indicate the unquestionable interest in and need. Computer based learning needed less supervision of learners, learners' progress gradual at their own pace with simple progression procedure by the help of computers images that matched with the word meanings. In other words, vocabulary development can only be effectively attained by incorporating the aforementioned technological strategies and tools among others like it was done in classes in Kasama district.,

From the findings of this research, it can be deduced that, on a general perspective, the teachers of early graders not making use of technological gadget that the made mention of in the questioners and interviews effectively. This is as was evidenced in the lesson observations. The major reasons for not using technological gadgets in teaching vocabulary were lack of suitable technological tools and lack or inadequate competencies on how to operate the devices and most important of all is that the teachers were not fully aware of the positive impact the incorporation of technological strategies had on the teaching and learning of vocabulary. There was also an observation that most schools had at least some of technological gadget but the teachers believed that it could only be used for administrative purposes.

5.2 Technological applications, software and learning platforms used for teaching vocabulary in lower grades.

The study discovered many technological application software's and learning platforms being used in the teaching of vocabulary in lower primary grades of Kasama district. Teachers observed that the use of technological software's, applications and platforms were helpful affordances provided by technology. Teacher had realised that the use of what's app, power point, YouTube, video games, Tik Tok and Facebook provided the most far reaching influence across different types of learner's engagement. This was demonstrated in the lesson observation and interview done with both the teachers and the learners in the lower grades of

learners. Some of the teachers the lesson observed confirmed that teachers used different software's and applications in their lessons. The study by Rickman (2020)is in support with the findings considered to be the most prevalent type of technology used in the class of Vietnam. Further findings indicated that the use of software and different applications such as what's app increase collaboration and interaction among learners thereby providing them encouraging team work. It also observed that teachers and guardians of the learners were through this application encouraged to interact and collaborate on the performance of the learners improving the performance of learners. The study by Boozer and Simon, (2020) agreed with these findings. Furthermore, the information from the questionnaire showed that some teachers were using Facebook applications in teaching vocabulary. The teachers would browse or download lessons on vocabulary shared on some literacy group page(pages) and utilize them in their lesson. They confessed that Facebook was a very helpful application in the area of teaching vocabulary. These findings are consistent with the findings of Dagon et al, (2020) that reviewed the literature from 5 years had passed and concluded that web-conferencing, software, blogs, wikis, social networking sites (Facebook, twitter)and digital game influence student engagement and improve vocabulary skills.

During covid-19, teachers of Kasama claimed that they found the use of what's app very useful. The interview information indicated that teachers used what's App to share lessons though they had access to smart phone but at least most of the learners benefited from the initiative, Kilickaya(2010)support the findings by adding that the use of different digital learning platforms such as google classroom, had a positive impact on development of high level of learning engagement at cognitive, behavioural and social level of learners Mclung.(2004)observed that given the effect of covid-19 pandemic employing digital learning platforms had become imperative. The data from schools brought out the findings of Nam and (2012) who recommended the use of various platforms enhanced learning environment and had potential to support knowledge construction. Besides, software provides audio enhancement of the lessons which facilitate instant feedback in each task. Furthermore, using mobile literacy games like spelling-tests exposes both the teachers and learners to the game thereby encouraging participation, creative and language use. Further, the software's promotes purposeful communication and fluency for computer-based learning in Zambia.

From the numerous platforms, applications and software's provided by technology, the findings revealed that, the teachers only used a small number in teaching vocabulary. However the lesson observations unveiled a different picture, such that the list of the software, applications and platform that was collected through interview and questionnaires had reduced. This lead the researcher to conclude that, there was no effective exploration of digital platforms, software's and applications in the teaching of vocabulary in Kasama district among teachers of lower grades.

5.3 The view of teachers on the use of technology in teaching vocabulary to early graders.

The finding of the study established that most of the Teachers had a positive attitude towards the use of technology as was observed in their classroom teaching practice. Teachers indicated that they found the use of technology advantageous in various ways ranging from being a resource for planning and teaching as well learning, to being an essential tool for effective assessment and record keeping. The ability to engage learners, encourage social interaction among others could not be over emphasized vocabulary by teachers who were interviewed. The findings are in line with the discoveries of Eristic et al, (2012) who contended that technology provides student centred activities which can enable learners to engage in learning and create their own digital work to participate in interactive activities. Further research revealed that the ability of technology to provide both reading and learning materials amplified the previous methods of instruction. Pan (2003) also adds that, the incorporation of technological affordances can help create better instructional activities that can encourage learners be involved in their learning and check their progress. All these factors were then realized and used to the advantage of the learners in the classrooms of Kasama to improve vocabulary learning among early graders.

The study established that the use of various software's incorporated in classroom practices provided opportunities for learner's development of critical thinking. Anderson – Mman and honey (1998) Reinking and Rickman (1990) alluded that children had shown remarkable improvement in vocabulary acquisition and comprehension when electronic texts were used in place of traditional print – based texts because learners' involvement in reading which

enriches vocabulary and critical thinking because of many instructional packages which facilitates learning. This however equates with the findings of Chabinga (2021), who claims to have keenly observed how leaners were engaged in multi-mode texts and how meaning making was accomplished through the use of ZEDU IPADS tablets. The results of Chabinga's research were consistence with Godwin's (2011) findings, which discover that iPad promote learners' language and literacy development by promoting collaboration and learner centred teaching. The digitized content focalized self-direct learning which is more favourable by both teachers and learners.

However, the researchers also brought out some challenges relating to the effectiveness of the use of technology in teaching vocabulary. Teachers indicated that while the use of technology was a very welcome move to improve vocabulary learning and teaching some concerns need to be addressed to enhance its effectiveness. These challenges range from lack of access to technological tools, inadequate knowledge to operate the tools by both teachers and learners, lack of power and poor power and internet supply, none availability of money to purchase internet bundles among others. Juel and midencupp (2000) observed that all the aforementioned challenges had a negative effect on the implementation of the use of technology in some parts of Nigeria. Juel and midencupp (2002) adds that, learners need hands on opportunities to manipulates word features in a way that allows them to generalize beyond isolated individual examples to entire group or words that are spelled the same way. In addition, Kesiena and Okoboh (2010) 's findings disclosed that, I.C.T provide learners with additional opportunities to extend their vocabularies by increasing the amount of reading and writing they do through the use of online materials. It was further noted that, there could never be effective results without proper orientations on the use of these devices, and even more impossible if the gadgets in question are not available. The study by Uganda (2021) confirms that teachers faced a lot of challenges in teaching children with dyslexia ranging from lack of specialized training, financial constraints to inadequate I.C.T materials. Further, there was also need for specialized rooms for children with special needs, calling for more findings from the government.

The study disclosed that, the form of technology ubiquitous among teachers in Kasama were smart phones, most of the schools could not afford other forms of technological tools due to

lack of funds. Some teachers also did not know how their phone could be used in teaching as they only used them for research purposes. Besides, teachers who used phones in teaching complained that it was difficult to have their learners benefit from technology, since the screen on the phones are small and that there was only one phone to be used. Teachers described this situation to be frustrating and a hindrance to effective use of technology.

The finding discovered numerous roles technology which can play in the teaching of vocabulary. Teachers of Kasama observed that the use of technological strategies helped learners to benefit from visual displays of word relationships within a text, this was demonstrated in the lesson observations where some teachers taught vocabulary using their gadgets showing both the words and the pictures to match a relationship. The study by Haleen, Mohd and Rajiv(2023) is in support with the finding of the teachers in Kasama by adding that technology aids learners to make simple progression through images that match with word meaning, hence making learning easy and interesting .Further, findings reveal that technology has the ability to connect fun and learning with online vocabulary knowledge. It was also observed that, the incorporating of technological strategies aroused interest and learning while playing games. These findings agree with those of Cheta and Yink(20160 who claimed that games were the most effective intervention for teaching and learning vocabulary and spellings knowledge testing as they are fun and interesting activation. The finding also indicate technology provides a truly participatory approach that can which harness, the skills and creativity of participants. Mobile technology can improve literacy level among early graders.

Moreover, interview data suggest that the use of WhatsApp and other electronic soft- ware application the teachers cover the termly plan within time as they used the application to share task sand give feedback to the learners. These finding are consisted with those of kumrul, et al (2022) which showed that WhatsApp can improve vocabulary learning and cultivate favourable attitudes. Besides, teachers indicated that the use of these gadgets did not only help in coverage the syllabus, it was also helpful in meeting their objectives. .Azeez (2022) appreciated that technologies prevented the spread of diseases among teachers and learners especially in the COVID 19 era. These findings fit well with those of West brook et al. 2013 who recommended that technology provides opportunities that teachers required to be able to

use pedagogy practices that are interactive in nature as they are more likely to be effective for students learning.

The findings also suggested that rather than traditional methods of teaching that do not have variety avenues that encourage vocabulary practice, technology tools provided a lot of opportunities for learners to use media to express vocabulary knowledge. This implies that teachers must maximize the advantages of the use of technology in teaching and learning. Lawrence et.al (2020) in his findings reveals that technology provides various gadgets that teachers who seek to improve vocabulary can make use of, He further adds that teachers can also adopted digital technologies to address different content – specific areas as well as their students' needs which suits their pedagogical beliefs, competence and the confidence they may have in technologies integration. In other words, teachers should exploit the affordances provided by technology among early graders to enhance greater understanding and confidence in vocabulary learning.

Evidence also suggested that incorporating technological strategies support reading and word meaning with just in time vocabulary reference support. Additionally, the ability of the technological tools to use language translators even makes it more useful for vocabulary teaching and learning. Consequently, teachers should use technology to make up for the learners' linguistic inadequacies. These finding are in support with meri-yilan (2020) who discovered that digital story telling in a blended learning mode had potential to improve various engagement of learners.

The general perspective observed by this research was that, due to computer based technology that had infiltrated many aspects of life and industry, many teachers of Kasama district, had a positive attitude towards the use of technology in teaching and learning of vocabulary. However, there was also a small number of teachers whose views were negative due to a number of reasons ranging from personal to general. A larger number of teachers had an understanding of the benefits of incorporating technological strategies particularly in teaching vocabulary among early graders. On the other hand, there was still little understanding on how technology could be used to promote learners' engagement in order to increase positive academic outcomes. The research also indicated that, in order to reap the best from technology, a lot of issues needed to be addressed to promote the use of technology. It was necessary to make

available of all forms of relevant tools in schools, train teachers in this area, change the forms and methods of learning to those that promote the use of different opportunities technology provided.

5.4 Summary

Regarding the study literature and theory offered in the earlier chapters of the study, this chapter has discussed the findings. Through interviews with teachers and lesson observations the funding of the study showed that most of the teachers of Kasama district had a positive attitude towards the use of technology in teaching Vocabulary and some of them had the knowledge on the positive impact technological strategies had on the teaching instruction of vocabulary lessons. However, the number of teachers who implemented the use of technology was smaller than those that of those who incorporated technological instructions in teaching vocabulary. Additionally, technology provides numerous gadgets but out of those only a minimal number was explored by the teacher. The findings also revealed that the use of technological gadgets could be rated insufficient and non -effective because some teachers had never used any gadgets while a few who did, lacked consistence. Technology provides a lot of devices that can be used in teaching vocabulary, but the teachers of Kasama only used some of them. Similarly. out of the numerous digital platforms, applications and software's that technology provides only less than quarter of the total number were being used by the teachers in lower grades of Kasama district. The conclusion and recommendations are presented in the following chapters.

CHAPTER SIX: CONCLUSION AND RECOMMENDATION.

6.0. Overview

The analysis and discussion of findings were reported in the previous chapter. This chapter discusses the findings and suggestions on the prevalence teaching vocabulary in English among early graders using technology in Kasama district. Based on the research findings, the study also made recommendations and suggestions for areas of additional study

6.1 Conclusions

The discussion on the finding concerning the prevalence of teaching vocabulary in English using technology among early graders in primary schools of Kasama district led to a number of conclusions.

The conclusion in relation to the study's objectives and questions were as below:

The first objective aimed to establish the use of technological gadgets teaches of lower grades use in teaching vocabulary. The study concluded that teachers of grades 2-5 classes incorporated technological strategies in their classroom teaching in Kasama. Teachers had the knowledge of how different technological tools can contribute positively in teaching and learning. This influences the classroom practices where most of the teacher's at least could use at least one or two forms technology to enhance vocabulary development. The finding indicates that though the most commonly used gadgets was a phone, it was very clear that teachers were very much aware of other technological tools that could be employed in teaching and learning in the classroom. The results showed that PowerPoint, iPad, laptops, phones, among other devices, are some of the technological tools teachers used since they had soft wares that promoted learner centred and learners' engagement. It should therefore, be concluded that the incorporation of technology should be encouraged among teachers in primary school.

The second objective wanted to ascertain the technological application, software and learning platforms that were used for teaching vocabulary among early graders The study's' findings suggest that in order to support vocabulary learning, teachers should incorporate the

technological affordances that technology comes with. Additionally, the study found that despite the schools not having most of the devices in question, teachers sacrificed their phones for various roles relating to teaching and learning. This implies that teachers are alive to the fact that, technological tools are a reliable resource. In the era of modern electronic technology, the effectiveness of technology integration should not be underrated. Teachers must consider technological affordances to influence their pedagogical engagement in classroom teaching.

The third objective investigated the views of teachers in teaching vocabulary among early gradersThe findings concluded that the affordances provided by technology are a good source of learning and teaching materials which could enhance teaching and learning. The ability of technological tool to give word meaning and visual images and vocabulary learning makes it a perfect resource for teaching. Technological gadgets can play the role of a teacher as some applications can give instructions and explanations on given topics as well as to provide task, beside these applications are also able to give feedback with in short period of time. The use of technology promotes collaboration between teachers and families in helping the learners thereby improving learner performance. The task of Progress tracking by both parents and teachers becomes simplified too. The capabilities technological tools have cannot be over emphasized hence the incorporation of the use of technology should not be overlooked as it can address a variety of specific content areas with updated information suiting teacher's pedagogical competencies.

6.2 Recommendations.

Based on the research findings and conclusion of the study it was recommended that:

(i) The government should increase funding in schools to facilitate the purchase of various technological tools and construct language special rooms to cater for learners with disabilities.

(ii) The Ministry of Education should evaluate teacher training programmes to enhance teacher's use of technology in pedagogy and practice.

(iii) The district education officers in collaboration with head teachers should ensure that teachers hold regular continuous professional development meetings to

capacity build the teachers on the use of technological strategies and operations of various gadgets for effective teaching and learning.

6.3 Suggestions for further studies

(i) Teacher seems not to have enough information regarding the use of technology. A study can be conducted to find how much teachers know about the use of technology in teaching and learning.

(ii) The study was concluded among learners of grade 2 to 5 there is also need to early out a similar study among grade 6 and 7 learners of Kasama district.

(iii) Teachers seem not how to incorporate traditional strategies of teaching with the technological strategies. A study can be conducted to find out how much teachers know about the incorporation of tradition strategies in line with the technological practices in the classroom.

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APPENDICES

Appendix A: Interview Guide

1. How long have you served as a teach?

2. What grade levels have you been teaching

3. Which subjects do you teach?

4. Have you taught literacy and language?

5. What aspects of literacy and language do you teach?

6. I would like us to focus on vocabulary. How often do you teach vocabulary?

7. What materials do you use to teach vocabulary?

9. Do you use phones, computers etc?

10. How do you use them?

11. What do you think about the use of technology such a computer and others when Teaching?

12. Do you think computers and other technological gadgets help children lean

13. How does technology help learners to learn vocabulary?

14. What technological gadgets, if any, do tea teachers use when teaching vocabulary early graders?

15. What are the views of teachers on the use of technology in teaching vocabulary to early graders?

16. What is the role of technology in the teaching of vocabulary to early graders?

Appendix B: Observation Checklist

1. Is the teacher using any technological gadget?

2. What technological gadgets did you see with the teacher?

3. What technological gadgets did you see with the pupils?

4. Did pupils use the technological gadget you saw

Appendix C: Research Questionnaire

THE UNIVERSITY OF ZAMBIA

GRADUATE SCHOOL

PROPOSED RESEARCH MEASURES

Dear Respondent,

I am a student pursuing a Master of Degree in Literacy and Applied Linguistics at The University of Zambia. As a university requirement, I have to carry out a research project as a partial fulfilment for the award of the degree.

My research topic is on the **"The Prevalence of Teaching Vocabulary in Bemba and English Using Technology in Selected Primary Schools of Kasama District of Zambia".**

You have been chosen as a participant as your contributions are significant in this study. You are encouraged to give your views liberally and precisely. Do take note that all provided information will remain unsigned and confidential. It will only be used for the intended academic purpose. Thank you very much for collaboration and contribution for the success of this study.

In the case of any queries about the study please feel free to contact me on the below contact. Your participation will be greatly appreciated!

Yours Faithfully,

CLENIA NG'ANDU

Kindly answer the following questions by ticking in the appropriate box or filling the spaces provided.

PART I: GENERAL DATA

1. What is your Gender?
[ ] Male [ ] Female

2. What is your Age range?
[ ] 20 – 30 [ ] 31- 40
[ ] 41 – 50 [ ] 51 and above

3. What is your marital status?
[ ] Married [ ] Single
[ ] Divorced [ ] Widowed

4. What is your highest Academic qualification?
[ ] Grade 12 [ ] Certificate [ ] Diploma

[ ] Degree [ ] Masters [ ] PHD

Other …….

PART 2: MEASURES FOR THE CONSTRUCTS

Listed below are some of the attributes of the use of technology in the teaching of vocabulary. Respondents will be asked to rank by a tick their level of agreement to following statements in an appropriate box that will be provided **Using a Likert scale of 1-5 where the level of agreement is as follows; 1= Strongly Disagree; 2= Disagree; 3=Neutral; 4= Agree and 5= Strongly Agree.)**

Variable	Item	Score
What's App	1. I am able to teach my learners effectively using WhatsApp.	
	2. I use WhatsApp to share tasks to the Learners.	
	3. WhatsApp is one of fastest communication tool in class room set up.	
	4. I have able to express my ideas through WhatsApp.	
	5. Knowledge sharing and feedback is easy through what's app	
YouTube	6. My learners have access to you tube lessons	
	7. You tube can easily store information for future use by my learners.	
	8. I can easily share information to my learners through You Tube and it helps me work effectively.	
	9. Learners have access to You Tube.	
Videos	10. Videos would improve learner performance.	
	11. Videos have positive influence on my performance because the more I watch, the better I can perform.	
	12. I will perform better if am trained on how to make Educative Videos.	
	13. I can share my knowledge with Leaners using Videos.	
	14. The Projector is an effective classroom tool in delivering a quality lesson.	

Power Point Projector	15. I am satisfied with the use the Projector in teaching Vocabulary.	
	16. I know how to use a Projector in lesson delivery	
	17. The Projector motivates learners during lesson delivery.	
Mobile Phones	18. Mobile phone is used as research tools in class.	
	19. Mobile phone is used for marking assessments.	
	20. Mobile phone are used to teach word games.	
Computers	21. I use Computer games to teach Vocabulary.	
	22. I use Computer dictionary during the teaching of vocabulary	
	23. My learners easily grasp vocabulary concepts when I teach using the computer.	
Recorders	24. I use recorder to asses vocabulary fluency	
	25. I use recorder to give tasks in vocabulary	
	26. Learners use recorder to give feedback about the given task.	
	27. I use recorder to asses vocabulary	
	28. I use a recorder when giving remedial work	
	29. I use recorders for recorder for record keeping of assessment	

Appendix D: Time Frame

S/N	ACTIVITY	PERIOD
01	Proposal writing	January to February
02	Data Collection	March to June
03	Report Writing	July to September
04	Submission	October

Appendix E: Proposed Research Budget

S/N	ITEM	COST PER ITEM	TOTALS
1	Paper and printing	K400	K400
2	Tape recorder and cells	K200	K200
3	Transport	K 500	K500
	Total	**1100**	**K1100**

Appendix F: Sample Profile

Variable	Description	Frequency	Percentage
Age	20 – 30 years	89	51.1
	31 – 40 years	69	39.7
	41 – 50 years	15	8.6
	51 years and above	1	0.6
Gender	Female	68	39.1
	Male	106	60.9
Qualification	Grade 12 Certificate	3	1.7
	College Certificate	6	3.4
	Diploma	31	17.8
	Bachelor's Degree	104	59.8
	Master's Degree	20	11.5
	PhD	4	2.3
	Other	6	3.4

Appendix E: Ethical Clearance Letter