LIVED EXPERIENCES OF LEARNERS OF COMPUTER STUDIES AT MUTENDE AND KOMBANIYA SECONDARY SCHOOLS OF MANSA DISTRICT, ZAMBIA

BY

MULENGA MWANSA CHEWE

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AUTHOR'S DECLARATION

I, **Mulenga Mwansa Chewe** do hereby declare that this dissertation is my own work, and that all the works of other persons have been duly acknowledged, and that it has not been previously presented at the University of Zambia or any other University for similar purposes.

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CERTIFICATE OF APPROVAL

This dissertation of **Mulenga Mwansa Chewe** has been approved as partial fulfilment of the requirements for the award of the degree of Master of Education in Educational Management of the University of Zambia.

Supervisor

Name: …….....

Signature: …… Date: ……

Programme Coordinator

Name: …….

Signature: …… Date: ……

ABSTRACT

The focus of the study was to investigate Lived experiences of Learners of Computer Studies at Mutende and Kombaniya Secondary schools of Mansa District. The objectives of the study were to: investigate what knowledge, skills and attitudes have been acquired by learners in the subject in relation to targeted outcomes of the syllabus; investigate how learners apply the knowledge gained in Computer Studies subject; establish the topics in the syllabus which learners find to be difficult; and establish whether the content of the syllables is appropriate for learners at their level. A sample of a Senior Education Standard Officer, two (02) teachers and twelve (12) learners was purposively drawn from two secondary schools in Mansa District. Intrinsic Case Study research design was utilised. Data was collected through face-to-face interviews, focus group discussions, and non-participant observation. Data was analysed using intrinsic case study analysis. The study found that the learners lived experienced in computer studies subject proved to be twofold, theoretical and practical, on the knowledge, skills and attitudes that the learners not only acquired and but applied. The knowledge was in two forms life-long technological skills such as browsing, typing and researching via internet. Knowledge was also revealed in attitudes such as security conscious from switching on/off computers, observing sitting positions, to how to relate with knowledge and skills with the rest of the world generally. The study also revealed some of the difficult topics that learners faced in computer studies subject and how they had met them. Furthermore, the study revealed triangulation from the teachers and senior education standards officer, who also exposed the appropriateness of the computer studies subject to the learners' level. The study recommended to have increased learner performance and acquisitions of knowledge therefore the need for more modernization of the teaching methodology, engage learners in projects that aim to improve economic strands/activities; CDC and Government officials to work together with the subject specialists or consider recommendations from CPD and subject seminar meetings; and formation of an independent Computer Studies subject body, Association and department, that would plan and allocate tasks from specialist counsel.

Key Words: Lived Experiences, Computer Studies, Junior Secondary School Level

DEDICATION

I am indebted to my wonderful family for the moral and financial support they have rendered to me, not only through the completion of this dissertation but throughout my life. Therefore, I dedicate this dissertation to my loving, patient and understanding Fiancé, Njamba Machayi, who accommodated the pressure with me during my study. I must also thank my considerately inspiring, caring and loving father Bishop Titus Chewe Mulenga; mother Esther Chanda Mulenga; terrific sisters, Mercy and Kutasha and brother Mulenga who helped me so much and gave me their fullest understanding by foregoing the attention and support they needed most from me and believed in diligence and pursuit of academic excellence.

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

CPD Continuous Professional Development

DEBS District Education Board Secretary

ICT Information Communication and Technology

ICTs Information Communication and Technologies

MoESVTEE Ministry of Education, Science, Vocational Training and Early Education

SESO Senior Education Standards Officer

CHAPTER ONE: INTRODUCTION

1.0. Overview

This chapter will focus on the background to the study, statement of the problem, purpose of the study, objectives, research questions and significance of the study. Furthermore, it covers the theoretical and conceptual frameworks.

1.1. Background

Information Communication and Technologies (ICTs) are proving to be enhancing the development of society. The importance thereof is by adapting to be modern, especially with the Education Act of 1966 which was meant to overhaul the whole system in order to cater the aspirations of a newly independent African country Ministry of Education, Science, Vocational Training and Early Education (MoESVTEE, 2013). The benefit has been socially and economically.

Mambwe (2016) argued that the purpose of the curriculum revision was to equip learners with competencies so as to operate effectively in knowledge based economy. Also, that the computer studies subject aims at enabling learners to achieve the following general objectives among others:

I. Acquire basic knowledge, skills and attitudes necessary for adapting to a fast changing technological world as well as developing a firm base for further education.
II. Appreciate the role of computer applications in carrying out day-to-day business and organizational tasks,
III. Appreciate the impact of computer technology on society,
IV. Appreciate the use of programming as a tool for problem solving,
V. Develop abilities to interact more efficiently with the wider community,
VI. Understand the role of information and communication technology in mental, moral social and spiritual development.

The computer studies was introduced in the Zambian national ICT policy of 2007 as a subject to be in government schools and the vision (aims and objectives) of the subject was and still remains that ICTs is to contribute towards reaching innovative and lifelong education and training in

Zambia by 2030 (Mundi, 2009). Then the President of Zambia emphasized the creation of an innovative, market responsive, highly competitive, co-ordinated, and well-regulated ICT industry.

This was as a result of the inclusion in the Fifth National Development Plan, 2006 -2010, which required the country's participation in the E-African Commission, due to the enactment of the ICT policy and by the Ministry of Education Draft ICT policy (Mwale, Chilala & Kumar, 2011). While Kavagi (2001) states that the introduction of computer studies in schools was generally either on societal rationale where students are trained to operate and fit in the computer society or vocational rationale so that students are equipped with skills required by the computer driven job market.

However, the University of Zambia and the Copperbelt University previously according to Shafika (2007) started to offer computer science as a study subject, and both institutions had invested in ICT infrastructure. The University of Zambia installed PCs with Internet connectivity in its regional offices while the Copperbelt University developed a curriculum development centre that develops the syllabus on computer studies for Grades 1 to 9 with Grades 10 to 12 following international syllabi on ICTs.

A combined research by Chisunka-Mwila, Lamba, Mulauzi and Njobvu (2011) revealed that introducing ICT training at pre-school would be too soon unless at Basic School level was more appropriate, also that introducing ICT Training at high School was a bit too late but worst at Tertiary Level. The researchers emphasised in their conclusion that the training of ICTs should be done by first giving some theory then practicing in computer laboratories despite there no having a standard curriculum at basic school level however one was there at high school level. This resulted into it done haphazardly relaying on the skills of the teacher and the facilities available.

The findings of Bwalya (2015) reveal that the majority of Zambians are not connected to the Internet and that at the time Zambia was estimated to have 16, 464 Internet subscribers and 700,000 Internet users, that account for only as 5.9% of the population. The Internet in Zambia was too expensive for many people and that that was partly due to the fact that computers and other accessories needed to connect to the Internet which was then not affordable.

The study findings of Banda (2016) were suggesting that there was low availability of ICT teaching and learning materials including poor technical and physical infrastructure in schools. Also that

there were extremely few teacher who had some personal ICT materials to help in teaching and that some schools had no electrification, while that the teachers had positive perception about teaching ICT though were lacking knowledge and skills in ICT. The researcher added that the then newly introduced language policy brought more confusion in the minds of pupils' compelled lower grades. The researchers emphasized that ICT in primary schools had not been successfully implemented due to many variables which would need attention.

Kabundula (2017; iv) found that teachers and learners in Luyanshya experienced the teaching and learning of computer studies done twofold, that is in theory and practice which positively empowered them with various long life technological skills such as browsing, typing and researching through the use of the internet. It also revealed the benefits of computer studies to both teachers and learners;

> *increased participation in research; modified methods of teaching and learning from teacher-centred to learner-centred promoted individualized learning, interactive atmosphere, communication skills, new administration functions, teaching and learning of other subjects; and shaped the entrepreneurial career aspirations.*

According to Lufungulo (2015) findings which were used by comparing and contrasting within and between cases where the most widely used ICT tools in the schools which were piloting the e-learning programme were ipads, laptops, speakers, ear phone and projectors during the audio visual lessons. Further the findings revealed that Lusaka and Katete primary school teachers held positive views towards the integration of ICT in the teaching and learning of Social Studies. This was possible due to the training held by iSchool and Impact Network on the usage of ICTs and irrespective the schools being located in different spatial dimensions (the urban and rural setup) the teachers' attitudes were positive.

The study by Mambwe (2016) established that only 10% of the schools sampled had implemented computer studies curriculum effectively. And what led to this were what the researcher termed as barriers to teaching computer studies subject as: Inadequate funds to procure computers, their accessories and set up infrastructures such as computer laboratories, lack of trained computer teachers and inadequate revision materials were found to be the major challenges in the implementation process. Also Chisunka-Mwila, Lamba, Mulauzi and Njobvu (2011) revealed point number six (6) of the conclusion that a number of challenges associated with the ICT

Training among others were the lack of facilities, lack of trained ICT Teachers, Internet Issues and limited time to practice which resulted due to the restrictions on the access to the computers.

However, Kabundula (2017) through the study further exposed that teachers and learners faced challenges and recommended, such as lack of teaching and learning equipment other ICT facilities; incidences of power outages; lack of modern school computer laboratories; inadequate trained personnel; negative attitudes from parents toward the teaching and learning of computer studies; lack of funding from Government; limited time; overcrowding of classes; and high rate of theft of computers in schools. This makes achieving ICT policy and computer studies subject a challenge as the recommendations identify what's lacking to help fully implement both national ICT and computer studies subject.

As a result there is need to know if learners, not only in Lusaka and Katete but across the country, have the relevant knowledge and know how is it that they apply the knowledge, skills and values. The studies have recommended and emphasized the application thought there is not enough to inform on the lived experiences of computer studies subject learners and also the need to know what topics, if any, have made the content of syllabus unattainable and establish how appropriate the content of the syllabus is to the learners which is the strive for this research.

1.2. The Statement of the Problem

The Revised 2013 Curriculum which saw the inclusion of Computer Studies for learners demands basic knowledge, skills and attitudes necessary for adapting. For the purpose of interaction more efficiently with the wider community needed to develop abilities for problem solving and carrying out day-to-day business and organizational tasks. However, Frye and Hemmer (2013) state that the effective program evaluation should focus on change occurring by knowing the nature of the change so that the change may deemed ‘successful or noting the impacts thus far. The essence of program evaluation is to look for both intended and unintended changes associated with the program. If the evaluation of the program is not done to see whatever minimal achievement or a change has been made in the process then it would not monitor the progress which has been made thus far. It is for this reason that at every point of the policies implementation, the policies should be monitored at the stages of implementation. This implying that there are areas that from the introduction of the Computer Studies subject that may have been achieved though maybe minimal in nature or unintended. And particularly this is essence to see what achievements (intended or

unintended) of the Curriculum Revision of 2013 on Computers and the Core Objectives on the learners have been met this far.

However, there is need to investigate the lived experiences on learners and this is the essence of this study.

1.3. Purpose

The purpose of the study is to ascertain the Computer Studies subject learners' lived experiences.

1.4. Objectives

1.4.1. General Objectives

Determine the lived experiences of the Computer Studies subject learners.

1.4.2. Specific Objectives

i) To investigate what knowledge, skills and attitudes have been acquired by learners in the subject in relation to targeted outcomes of the syllabus
ii) To investigate how learners, apply the knowledge gained in Computer Studies subject
iii) To establish the topics in the syllabus which learners find to be difficult
iv) To establish whether the content of the syllables is appropriate for learners at their level

1.5. Research Questions

i) What knowledge, skills and attitudes have been acquired by learners in the subject in the subject in relation to targeted outcomes of the syllabus?
ii) How do learners apply the knowledge gained in Computer Studies subject?
iii) Which topics in the syllabus do learners find to be difficult?
iv) How appropriate are the contents of the syllables for learners at their level?

1.6. Significance

This is to potentially help in the policy making, curriculum revision and relevant teacher education. The study may also contribute to existing literature on ICT and may also help employ the findings to improve on the subject been more successful.

1.7. Theoretical Framework

This study will be informed by David A. Kolb (1939) who believed that learning was through the process whereby knowledge is created through the transformation of experience. And that his

theory presents a cyclical model of learning which consists of four stages hence this being a four-stage cyclical theory of learning. Kolb's experiential learning theory is a holistic perspective that combines experience, perception, cognition, and behaviour.

The first stage, concrete experience (CE) or the DO is where the learner actively experiences an activity such as a lab session or field work. Then the reflective observation (RO) or OBSERVE stage is when the learner consciously reflects back on that experience. The third stage, abstract conceptualization (AC) or THINK is where the learner attempts to conceptualize a theory or model of what is observed. The last and fourth stage, active experimentation (AE) or PLAN is where the learner is trying to plan how to test a model or theory or plan for a forthcoming experience.

According to Kolb (1984) Dewey's work on experience emphasized that learning is not from the experience itself, but also from reflecting upon it. This is supported as the key aspect of this theory that knowledge is created through the transformation of experience. Kolb (1976; 1981) identified four learning styles that correspond to the above stages and these highlight conditions under which learners learn better: assimilators learn better when presented with sound logical theories to consider while convergers when provided with practical applications of concepts and theories. The accommodators learn better when provided with "hands-on" experiences and lastly the divergers when allowed to observe and collect a wide range of information.

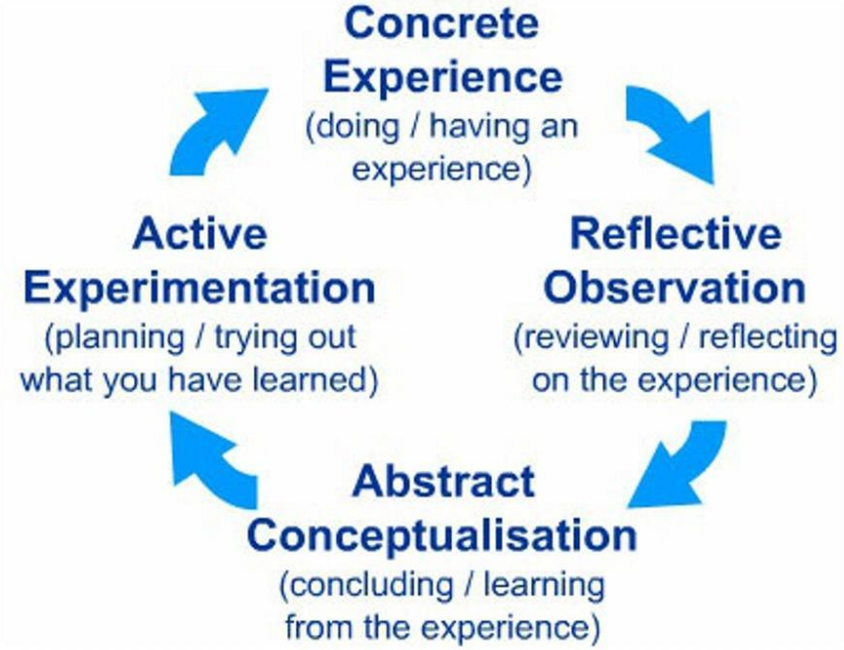

Fig. 1.1 The Experimental Learning Cycle

The above theory model supports the qualitative intrinsic approach of the 'lived experiences' as it informs the study on the participants' existence and relation to the world around him/her.

1.8. Conceptual Framework

The conceptual framework in this research will be based on the assumption that there is achievement at every stage of the implementation of computer studies in the junior secondary school curriculum in Mansa District. According to the diagram in this study it is centred on computer studies and especially at lived experiences of learners in as far as conception of knowledge, skills and attitude in computer studies subject was concerned. It also centred on learner experiences with regard to application of concepts, difficult topics in the syllabus and appropriateness of the syllabus at their level.

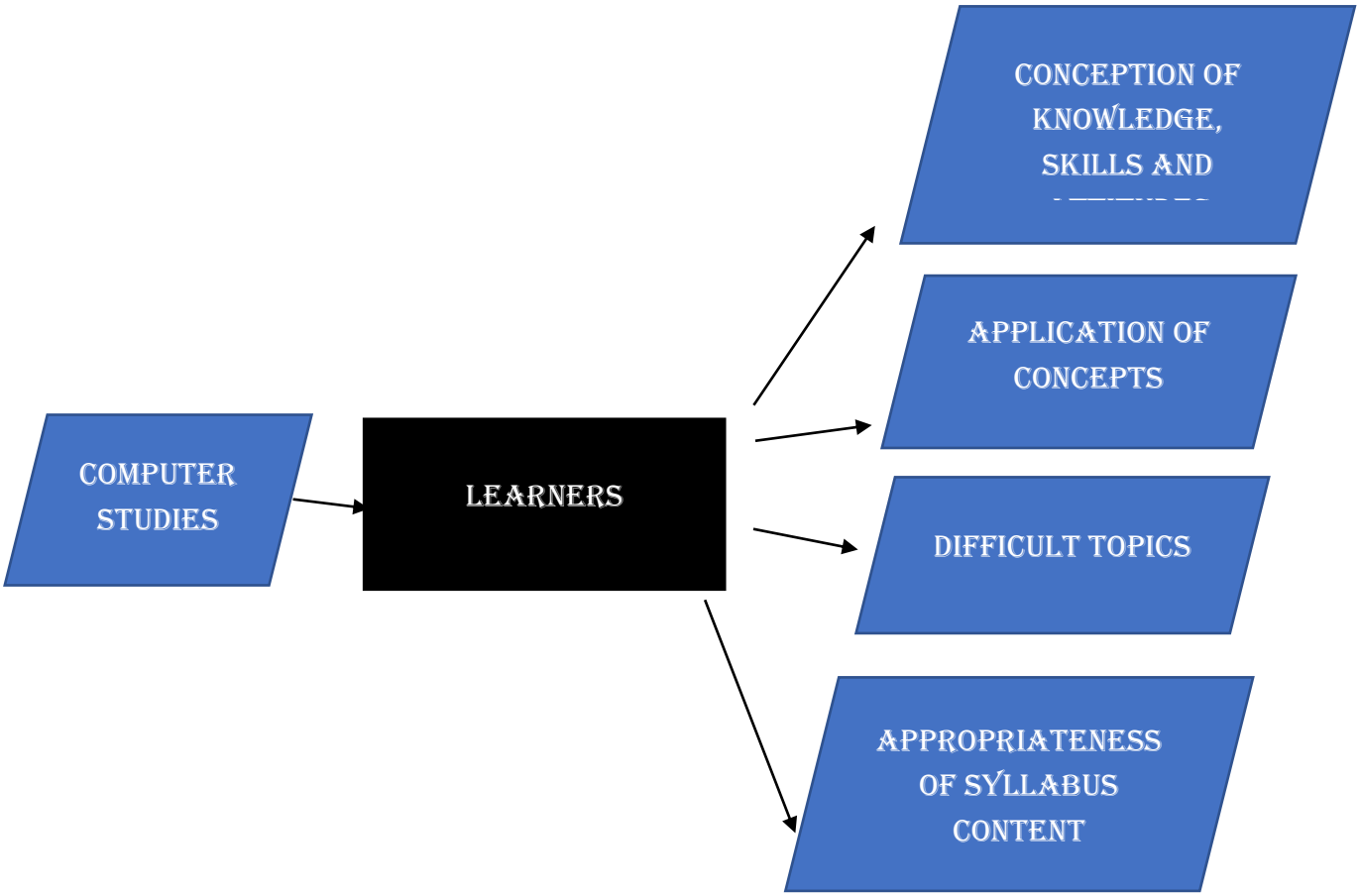

Fig. 1.2 Conceptual framework

Lived experiences - this is a representation of the experiences and choices of a given person, and the knowledge that they gain from these experiences and choices (impressions of living). This is a Personal knowledge about the world gained through direct, first-hand involvement in everyday events rather than through.

1.9. Delimitation

According to Creswell (2012) delimitation is how the study is narrowed down to an exact scope, which relates to the target population and geographical area conducive for the study. The study will focus on the lived experiences of computer studies subject learners in selected upgraded secondary schools because of the subject having been compulsory at junior secondary. This is irrespective the language and cultural boundaries. Also, the detailed views will reflect the general views of the learners.

Also, to cover the secondary schools to carry research from and evenly; the oldest existing school that was upgraded and the latest updated will be more likely to record more evaluation on the lived experiences of the learners across different settings of the school within the district.

The study will additionally explore appropriateness of the content of the syllabus from Educational Standard Officer-Mathematics (Computer Studies) and Subject teachers.

1.10. Limitation

Not all the upgraded public secondary schools would be sampled due to time factor against the phenomenological approach would require detailed views of the learners would be lived experiences learners but also due to language and cultural context of both the observer and the participants but mostly due to the former.

The setting of study will not go to different regions but more urban public secondary schools within the districts education board Secretary for triangulation with the education standards Officer-Mathematics overall responsible for Computer Studies Subject.

1.11. Summary

In this chapter important issues have been discussed to order the study into context. An overview of the experiences of Learners of Computer Studies and Information and Communication Technology as a subject in Secondary Schools which elaborated the set of the context of the study and jurisdiction of the study. Furthermore, the background was led to describe the statement of the problem, theoretical and conceptual frameworks to explain and reveal the study further. Others included the significance of the study, delimitations and limitations. The next chapter is the review of literature that help breakdown the topic under discussion.

CHAPTER TWO: LITERATURE REVIEW

2.0. Overview

In this chapter, the researcher presents the review of related literature for analysis basis. In an attempt to analyse, literature related to this study will be reviewed under the following sub-headings: curriculum starting from the global, African and Zambian perspectives. This would be with two themes: Learners knowledge, skills and attitude towards computer studies and computers; and Learners application of knowledge and skills computer studies and computers; with ration to topics difficult and appropriateness of the content.

2.1. Global Literature

According to Noor-Ul-Amin (2013) stated that any ability to use/skill of ICT in learning settings supports various aspects of constructional knowledge and where more students employ ICTs in their learning processes, the more pronounced the impact. As a result, Teachers generate meaningful and engaging learning experiences for their students, been the strategic use of ICT to enhance learning. To this Students enjoy learning, and the independent enquiry which innovative and appropriate use of ICT can foster. The revelation was on world perspective were the learning of ICTs as a tool in the learning process which showed that learners enjoyed the interaction though the level of skills obtain were not stated. The lived experience of the learners was not descriptively informative. The researchers lacked the emphasis of the knowledge that the learners obtain and that would be were this research would focus to reveals what knowledge, skills and attitudes that the learners have been enjoying in the process of learning.

Ziden, et al. (2011) state that using ICT in study not only encourages students to process information better but also enhances the understanding and improves students' memory and this is supported by Hull (1995) and Gayeski (1993). These researchers indirectly addressed the knowledge, skills and attitudes and ICTs use instead of looking at ICT as a subject like computer studies. But the experiences of the learners were not revealing the extent of the encouragement and how the Learners memory would improve from the Learners point of view as the information was not explicit. In this research an investigation will be done to prove how a computer studies subject can not only encourage learners to better process information but also enhance

understanding and the improvement of the memory after the learners have obtained knowledge, skills and attitudes.

Siddiquah and Salim (2017) revealed that the Learners use of ICT was mostly for the purpose of academics within the school and the duration at which they used the artificial intelligence device was mostly within maximum of five hours. However, ten hours use of the artificial intelligence device was with Recreational purposes and most of the learners were recorded.

On another hand, Ibid (2017) revealed a lot that the learners were learning computers through various forms to obtain the relevant skills, knowledge and attitudes: studied a course in degree program which was the highest record while obtaining certification in computers was the least. Then respectively and generally there is learning of computers through family and peers/friends. And as they learnt the teaching and learning process was conducted using various forms to hence educational generally. In other words, ICTs learning had helped the facilitators for the learners' learning process.

Righi (2012) teacher ought to engage Learners tasks, this is because active engagement affects specific behaviour and attitude is a resultant behaviour. This leaves the question how do learners tasks that they have been given cause them to interact. This would express the lived experience of the learners. And will it proof that some learners with home interaction with artificial intelligence devices are more inquisitive and explore more on the school's artificial intelligence devices, and tasks given. Additionally, Degree of completed work is determined by the time spent on the artificial intelligence devices. Also, that is increased learner engagement determines the speed and/or accuracy in the completion of work. Over time spent, affirmed by participants affects the lending of the work completed by the learners in a classroom.

Additionally, Righi (2012) states the communication that exists between the teacher and the Learners impact on the lived experiences of computer studies subject. The researcher reveals that the relationship that the teacher builds helps and even how the interact on media or a less threatening/hostile environment of the classroom. This is based on how the teachers creates direct response to learners via e-mail concerning homework and all. And how is it that the learners respond. This can be related to computer studies subject learners what sort of working relates to what improves the knowledge, skills and attitudes in the subject with the learners at the centre.

In the case of how the learners relate to tasks or assignments given to handle, according to Righi (2012), depends on the Learners choice and option. This means that learners have attitude that affects task performance. Also, choices create motivation and give students power, resulting in students taking ownership of their learning. Righi (2012; 28) reveals the above notion;

> *Allowing students to choose how they represent what they learned makes their learning personal. When learning is personal to students, they are able to reflect deeply on their efforts and assess their own work and progress. Reflection is fundamental in developing skills and dispositions to continue their learning after a class end.*

This has to be proof in relation to lived experiences of computer studies subject learners if they have choices in the tasks given, or despite the choices how do the learners respond to the task.

Young (2008) in her research reveals that students may use peer coaching through the use of ICT, at it allows students to become more self-reliant. The student can work at their own pave given their time especially on a project. And the fear of failure is less if they are working on their own as opposed to classroom work/discussions. It boosts their confidence. Then the teacher becomes the facilitator of the computer studies subject which would be the case is the Zambian sense. There is less information provided that expresses learners are given that much time and opportunities to grow. How do the learners grow in the knowledge, skills and attitudes if not accorded? This is the gap that Zambian schools needs especially in Mansa district.

With routine use of the interest of the learners would grow. This means that learners ought to have time on the artificial intelligence devices after they have received the knowledge, skills and attitudes in a classroom. Mastery is also another thing as there is even an integration of ICT in various subjects and in general lessons.

Technology like computer studies generally has been used to support collaboration in the classroom and access to information. But in Zambia there knowledge, skills and attitudes gap in computer studies subject and has this been established from learners' perspective.

The use of technology has helped learners through technological to support reading skills development. By using a 'talking book' learners do not need to be able to read well in order to read/access a text. This helps the learners with reading disabilities to be able to read and

understand. Also, it examines to see how students interact individually with the support feature. Although the focus is on the talking book it is would have to relate to the skill of reading. The gap would be to relate to computer studies subject learners if they have improved in their reading skills generally.

OCED (2015) revealed that PISA collected internationally comparable information on students' access to and use of computers and their attitudes towards the use of computers for learning. There were from 29 OECD countries and 13 partner countries and economies who chose to distribute the optional ICT familiarity component of the student questionnaire.

And according to the PISA data which showed that a majority of participating countries, access to computers had, by 2012, become nearly universal. However, important between-country differences exist in the quantity and quality of devices accessible, and in the experience acquired in using them. Among others they focused on the differences in computer access and use, for instance, of OECD countries 42% of students in Mexico and 29% of students in Turkey did not have a computer in their homes, and those shares exclude 15-year-olds who are not in school.

The typical 15-year-old students in 2012 had at least five years of experience using computers and these were across all countries and economies analysed, except Mexico, more than one in two students reported that they were 9 years old or younger when they used a computer for the first time. This has to be related to Zambian district of Mansa context how the learners experiences with artificial intelligence devices. And as for the activities the most common leisure activity using computers was browsing the Internet for fun. Some 88% of students did that at least once a week and it in countries and economies, however, used and trend did differ markedly from the OECD average. OCED (2015: 42-44) state;

> *Japan the use of e-mail was 79% of students was more widespread among 15-year-olds than participation in social networks which was at 43% of students, and has increased quickly. While children gain access to a host of educational resources and engaging experiences through ICT devices and the Internet, they also need to be protected from the potential negative consequences of using ICT. Risks include exposure to harmful content or contacts which is including cyber-bullying.*

Additionally, Ibid. (2015) states that on average across OCED countries in the Students' self-reports reveal that students typically spend at least 25 minutes on line each day at school. However, in Australia the time spent on line at school is more than twice the average which is 58 minutes while in Denmark students spend an average of 46 minutes on line per day at school, in Greece and Sweden 42 minutes and 39 minutes respectively. And in 2009, the task most frequently performed on school computers was 'browsing the Internet for schoolwork' which was done once a week or more often, on average at 42% of students, while the least frequently activity was playing simulations at school at 11% of students on average across OECD countries. The research will investigate the lived experiences of computer studies subject Learners time spend on the artificial intelligence devices in school and what activities are learners frequently engaged.

Righi (2012: 24) stated also that when they were faced with a problem engagement in another kind of interaction of conversation to complete the work and somehow the peer-team knowledge reliance work was an added advantage:

> *Engaging in conversation within groups and using all types of interpersonal skills. The work that is produced on the laptop computers is more sophisticated than paper-pencil work so students have to problem solve, troubleshoot, find answers, and be creative on the fly*

Also, an explanation relating to Broom Taxonomy specifically on richer and deeper the learning Righi, 2012: 25):

> *You are seeing much more of the deeper analysis and synthesis level. They are processing it. They are not just trying to learn it so they can recall it for a test. They are applying it. It's definitely a deeper level thinking because they have to. They can't simply just spit out that information. They think about how it applies; how to transform*

Indeed, this the students' conversation revealed understanding and application of the laws that had a more significant impact on them than memorizing the laws for a fill-in-the-blank test. In relation, would the learners of computer studies subject reveal this aspect in their lived experiences?

Enstrom (2014) in her research investigated the most difficult tasks of the course were related to proving correctness, solving complex dynamic programming problems, and to reductions. And

also, even a certain confusion regarding the epistemology, tools and discourse of the ADC (Algorithms, data structures, and complexity) course which is taught to third year students on the Master of Computer Science and Engineering program at KTH Royal Institute of Technology in Stockholm, Sweden. In other words, the topics are appropriate for the Masters level and not secondary. But this research will investigate how the learners relate to programs and application of the knowledge, skills and attitudes in the computer studies subject software program management.

Furthermore, Siddiquah and Salim (2017) also revealed that there were difficulties that the learners faced. Though at university level, the learners at home had challenges of load shedding, non-availability of required software, high virus threats and lack of internet which was universal. While at university there are more challenges due to the higher demand and use of artificial intelligence device this would benefit if even at junior level there are such challenges or preferably an investigation is required to know.

Siddiquah and Salim (2017) revealed in their research that availability of resources to the learners were computers, laptops, printers, scanners and internet which they accessed both at home and institution of learning, in this case a university. And that they acquired skills in various programs which relate (appropriate) to their level of education and application thereof.

2.2. African Literature

Anyango and Suleman 2018) concluded with results from a survey of thirty (30) and interviews from five (5) experienced lecturers who had been teaching introductory programming courses from two African countries, Kenya and South Africa, confirmed other researchers that recursion, arrays and abstract data types were difficult for many novices, and that recursion being considered the most difficult topic. Among the topmost issues in learning programming difficult, results showed that problem solving was the issue and this was irrespective different learning situations, topics traditionally considered difficult for novices remained the same in middle-income and poor countries as in other parts of the world. The authors indicated one of the limitations is that the research did not consider perspectives from students and in relation to this research it centred on students at tertiary level of education and not secondary school. From this the research will focus on how many learners are novices in Computer Studies subject managing the software programs in Zambia specifically in Mansa district.

Adebowale, Adewale and Oyeniran (2010) revealed the implications for global computerization in secondary school students of local governments of Lagos State of Nigeria in Computer interest, approval and confidence, and the results indicated that most of the students possessed high levels of interest, approval and confidence in computer usage and its ancillary concerns. Although it appeared that they would still regarded it as a secretarial instrument as was shown in the gender stereotypic believe that secretarial jobs were to be reserved for the female sex as shown in the greater interest shown in computer use and its concern by the female participants. The study will investigate in Zambian context, specifically Mansa district, the learners' computer interests, approval and confidence is a result from knowledge, skills and attitudes acquired.

Gomba (2016) for the learning of computers been a worthwhile (interesting) experience begins from learning the basic principles of computers. While operating the computer on their own felt good especially that they have access. There is also desire that learners wish/want to fulfil, for instance to search for information. This leads the learners to develop a worthwhile experience and also the accessibility of the computer for learning. For instance, learners reiterated at the number of computers as it affected their progress to learn computers. The few the computers the more time it takes for other to have an interest maintained and if they learn, it would be overcrowding on a single computer. The issue that also makes the situation worse is the specified time in which to learn the subject. A number of learners complain of the time of usage to be short and not enough. From the above this study will investigated the Learners experiences on the process of acquiring knowledge, skills and attitudes in Computer Studies subject.

Furthermore, accessibility affects internet connection, learners end up having not/less experience on internet connection related concepts as they end on hear-say. It is incomplete is also the school has no internet connection, hence affecting topics like Web design, blogging and the like. Even with internet access, the remoteness of the school limits time due to poor internet services around the school and against few artificial intelligence devices. The study will investigate the lived experiences of computer studies subject learners in the knowledge, skills and attitudes in internet use and application thereof.

Additionally, Gomba (2016) stated that Teachers monopoly was the preference of the teachers to access the artificial intelligence devices, the learners been chased from computer tablets prevent necessary experience and even guidance for broader mentors in artificial intelligence devices. In

Zimbabwe, some teachers had inferiority complex towards learners who consider themselves as experts. Hence, learners recommended staff to own laptops/desktops and not depend on the school artificial intelligence devices. Also, that some permanent stuff had a negative to trainee staff and they would be treated similar to learners. Aside from that that the learners had more satisfying results on the research and school work (tasks) prescribed by their teachers and that would be more than social use as there would be no internet connection serves. In Zimbabwe social use was more self-taught and peer-interaction. This study will investigate to expose if learner knowledge, skills and attitudes in computer studies subject brings issues with teachers and what is it learners think as they apply their expertise. Also, how effective is the Learners use/application of the acquired knowledge, skills and attitudes in computer studies subject in Mansa district of Luapula province of Zambia.

Nnaekwe and Ugwu (2019) revealed that there ought to be changes in learners' role that indicates their acquired knowledge, skills and attitudes from; passive to active, reproducer of knowledge to producer of knowledge, a dependant to autonomous, and solitary to collaborative. This helps turn learners from theorizing to been pragmatically involved. This is with the potential to transform by having meaningful and enjoyable learning experiences aside from teaching. And the major factor would be to influence by experimentation, adaptation and critical reflection. The research will endeavour to investigate if the learners' experiences are being active, producers of knowledge, autonomous and collaborative, hence proving meaningful and enjoyable learning experiences which are pragmatic.

Samarkandi (2011) findings indicated that students had less anxiety if they had access to a computer at home or at school that is if they had computer exposure at both home and school. The researcher believed that the implications of the findings are presented with regard to educating future nurses at KSU for complex roles in health care systems. But generally, the attitude of the Learners to computers, and knowledge and skills relates to exposure. The experience of learners was on the university student and the training of nurses but not the computer studies subject at secondary school and how it perceived. Nonetheless, an assumption can be made in relation to attitude of the learners and experience with computers exposure at school and home. This essence of this study to explore if in Zambia has the same or has been driven to something similar, higher or lower.

Kevogo, Toili and Mutsotso (2013) This study concludes that schools generally only allow the high academic achievers to register for computer studies at Kenya Certificate of Secondary Education (KCSE) for the reason that the general frequency of computer use is above average and also because the general academic performance as shown was above average. However, some students use computers for academic purposes while others for non-academic purposes such as entertainment. While for some other learners use computers for academic and non-academic purposes compensate equivalently each other (Aitokhuehi and Ojogho, 2014). This study will investigate their experience and application of the computer studies subject if it is for academic or non-academic purposes, and to what extent is their experience.

However, Ugwu and Nnaekwe, (2019) reveals that there are challenges that affect learners from effectively applying their computer studies subject and it is dependent on various interventions, Mambwe (2016) attests to this as his study exposes the barriers of computer studies subject and its implications thereof. However, Ugwu and Nnaekwe (2019) the researchers focused on the essence of computer studies as a subject and these are Authentic and Up to Date Information which helps on updating learners on the current information, and also access to Variety of Learning Resources. The participation of Learners to support and encourage interaction going on in the classroom therefore makes the classroom an active class, and also Collaborative Learning. Information Recall were it is easier and also enables the learners to remember what they have learnt. Feedback Purposes for performance remedy. This study will investigate on the Learners experiences in Mansa district is close to the essence of learning computer and have been applying it as prescribed above.

According to Oroma, Wanga, and Ngumbuke (2012) who state that Computer programming is a difficult task to learn from the research conducted in Tanzania. The researchers stated that it is even more difficult to teach and learn in a developing country like Tanzania as it was faced with additional challenges in its educational and natural settings, although the research sample was not a secondary school but a University. Generally, the Learners experiences in the course were challenged by their interpretation and manipulation of the figures and equations in programming language. This can be relatable to the use of educational software such as Microsoft Excel in Computer Studies subject. This study will probe the use of figures and equations in Microsoft

Excel and other educational software that require data manipulation in Computer Studies subject by the learners in selected schools in Mansa district.

Additionally according to Charles-Ogan and George (2015) research which was about Investigating Difficult Concepts in Senior Secondary School Mathematics Curriculum as Perceived by Students relates on the part of applying mathematics in computer programming by most of the Nigerian learners was perceived as very difficult. Despite the perceived and encountered difficulty the topic was justified as appropriate and relevant.

Not much is in the public domain that suggests the difficulty faced in the use of computer studies subject but ICTs generally and most are in relation to other subjects mostly Mathematics and general natural sciences which in a way a prioritised. The more reason this study seeks to endeavour and exposing on the lived experiences of computer studies subject learners.

2.3. Zambian Literature

According to Kabundula (2017) the researcher highlighted that the idea of having computer studies as a subject permeates the enormous surface area of teaching and learning technological progressions that move the ever-greater volumes of computer skills, knowledge and competencies among teachers, learners and the general populace around the world (Hewitt de Alcantara, 2001).

Mulauzi and Albright (2009) reveal that numerous studies have been there that demonstrate ICT's potential to meet development information but the main focus is for professional women in Zambia. They bridged the gap on the individual to access and use ICT which amplified the importance and relationship between the information itself and development, and specifying to women. The same bridging has to be investigated if Computer Studies subject has been from the Learners experiences not just females but males too. The researchers revealed that it provides that access to ICTs like internet Computer, Radio and Television was the major for women used it for health purposes and educational issues, and mostly accessed in English language. Although many women lack disposable income to pay for ICT access due to their preference to household needs such as food, health, education and information needs. There no information on learners in schools nor the subject as it was not emphasized in school.

Mtanga, Imasiku, Mulauzi and Wamundila (2012) according to the research on the use of ICTs in education at high school, a good number of pupils used mostly computer and internet for school

project and less foe storage, also have access to online resources for learning/teaching within the school setup. This focuses mostly on the interaction with school. Additionally, the pupils use ICTs at schools mostly for preparing projects/reports which were the major, seconded by information storage and access online resources for learning then entertainment and discussion forum respectively by this begs the questions if this is would be the case even in Luapula province, specifically Mansa district. And that there were no presentations of lessons and correspondence, and this research will to review as it emphasis the lived experiences of the learners in computer studies subject.

Furthermore, Ibid (2012) pupils have low ICT competence, due to the frequency of the use of ICT facilities aside from the ICT devices. The major range twice use, once use and other rarely use as compared to two plus per week. This agrees with the major needing assistance from very little, more help to help all the time. This begs the question of how their lived experience is in detail on what leads to this competences level. This is not just the pupils according the above researchers, but also the staff too. Pupils and staff members indicated acquired their ICT use having certain knowledge, skills and attitudes through ICT enhancement programs within schools.

Mwaba-Chiluba, Akakandelwa and Chiluba (2019) exposed that in the teaching of computer studies 75% of the respondents strongly disagreed that number of hours used in teaching computer studies lessons is sufficient. While 80% of the respondents said that there was a presence of educational software such as Microsoft Power Point and all the respondents indicate that Computer studies is taught as a subject. The research will investigate how the learners relate and grade length of the teaching computer studies subject and how well do they apply the educational software if it is the same in Mansa district of Luapula province.

According to Mulauzi, Walubita and Pumulo (2019) they revealed that one of the benefits that came out strongly was broadening the information environment for both teachers and learners. And among the participants, a learner explained their experience with information search that the time of research the teachers remained our main sources of knowledge and information computer skills could empower the learners to access a web of knowledge and information on the Internet. This is hitting that the learners learnt the use of internet and the attitudes thereof and that the learners have knowledge that assists obtaining a lot more information and considering that

computer and Internet skills are highly valued in today's academic and professional environments and are integral to all areas of study and work. Therefore, providing access to the Internet in schools would help many pupils achieve academic excellence, which would be equipping them to provide solutions to issues that their communities might encounter in the future. This then has to be proved replicable in Mansa district computer studies subject learners.

Furthermore, Mulauzi, Walubita and Pumulo (2019) state that students must not only possess basic computer skills in order to execute commands in basic computer applications but also be computer literates as it is a crucial component for success at a higher education institution since the student interacts with the school, the faculty, and the community by using the computer. Students can also employ their research skills using search engines to retrieve robust information as they prepare to write their assignments. This all comes back on the learners' knowledge, skills and attitudes acquired which reveals how learners use a computer and how it operates can enhance the work performance of individuals. For instance, Computer knowledge allows the learners to get work done in an efficient more organised and timely manner which is made easier by use of Computer productivity tools such as spread sheet, word-processing or presentation are very helpful in organising thoughts. And one of the participants expressed how that computer knowledge can open up communication opportunities and solve issues effectively in the end. This application and use of computer studies subject by learners in Mansa district has to be investigated based on how they have experienced it.

The study by Siana (2017) focussed on the Teachers' and Pupils' Perceptions of Information Communication Technology (ICT) as an Examinable Curriculum Subject in Mazabuka district of which the teachers agreed that it was. Aside from that the benefits of the subject was brought up, also that generally Computer Studies subject was easy for both teachers and learners in Mazabuka. There were mixed feelings on the difficulty of the subject and a generalization was made that it is easy when few learners attested to that. The study had teachers' clearly stating the easiness of the subject but justifying in which areas the subject was easy the urban to peri-urban but in rural areas it was not. Mansa is both a Peri-urban and rural setting and the schools the target schools are the newly upgraded public secondary schools from primary schools.

On another hand, Chisunka-Mwila, Lamba, Mulauzi and Njobvu (2011) researched and revealed that introducing ICT training at pre-school would be too soon unless at Basic School level was

more appropriate, also that introducing ICT Training at high School was a bit too late but worst at Tertiary Level. The researchers underscored in their conclusion that the training of ICTs should be done by first giving some theory then practicing in computer laboratories despite there no having a standard curriculum at basic school level however one was there at high school level. That resulted into haphazardly relaying on the skills of the teacher and the facilities available. However, in the year twenty fourteen (2014) a computer studies syllabus for the junior secondary school (grade 8 and 9) was prepared and published by the Curriculum Development Centre for the Ministry of Education, Science, Vocational Training and Early Education. After publication of the syllabus there has not been research questioning the appropriateness of the syllabus and have learners state their lived experiences based on the same. From the above this study will investigate if the computer studies syllabus and subject is appropriate for the learners from the revealing of the learners' application of the acquired knowledge, skills and attitudes of the subject.

2.4. Summary

There exists no specific information that expresses or reveals the lived experiences of computer studies subject learners and bringing out what actual achievements have been attained from the learners apart from the results of introducing a new curriculum and having learners' performance. The impact that the learners have from the influence of learning computer studies should be reflective in knowledge, skills and attitudes with value addition and this relates to the learners application of the knowledge, skills and attitudes. It is just not the performance at standardized examinations set by the reputable Examination Council of Zambia; therefore, understanding the lived experiences of computer studies subject learners would also help to evaluate the performance in the subject itself. The next chapter that follows is on the methodology that was employed in this study.

CHAPTER THREE: METHODOLOGY

3.0. Overview

This chapter presents the methodology and procedures that would be employed in carrying out the study. The following will be described: the research design, location, sample and sampling procedures, data collection techniques, research instruments, administration of research instruments and data analysis.

3.1. Research Design

A research design, according to Ader and Mellenbergh (2008), includes how data is to be collected, what instruments will be employed, how the instruments will be used and the intended means for analysing data collected. This study will use an intrinsic case study approach which a form of a qualitative method research design where the researcher makes analyse of persons, events, decisions, periods, projects, policies, institutions, or other systems that are studied holistically by one or more methods. Its focus is on the case itself because the case presents an unusual or unique situation and it will use analytic procedures of a detailed description of the case, set within its context or surroundings, still hold true (Creswell, 2007; Oxford Library of Psychology, 2014).

Also, the study will employ the descriptive survey design aimed at finding out the 'what is' which utilizes survey methods that are frequently used to collect descriptive data (Bogdan & Biklen, 1998). It can be used to collect information related to people's attitude, opinions, habits or any other variety of education or social issues

3.2. Study Site

The research study will be carried out in the capital district of Luapula province, Mansa. This is in the vain to relate Computer Studies subject impact on learners to Luapula Province's economic assumption that it is one of the fast growing Zambian sub-region economically. Also, that there are more primary schools upgraded to secondary schools in both urban and peri-urban areas and also because of the subject having been compulsory at junior secondary. Due to this it is more likely to record more evaluation on the impact of the learners.

3.3. Target Population

Mansa district has twenty-two (22) gazetted secondary schools of which four (4) are private owned while eighteen (18) are public owned learning institutions. The focus will be on public upgraded

secondary schools that Education Office can easily and directly impact on public policy formulation and implementation. Target population, according to Mugenda and Mugenda (1999) is defined as the members of a real or hypothetic set of people, events or objects, the researcher wishes to generalize the results of the research. The target population for this study would comprise selected two upgraded public Secondary Schools of Mansa District each computer studies teachers and pupils and the Education Standard Officer-Mathematics (Computer Studies).

3.4. Sample Size and sampling procedures

Orodho (2005) defines sample population as a small portion of a target population. He continues by defining 'sampling' as a means of selecting a given number of subjects from a defined population as representative of that population. In this study, out of the twenty-two (22) Secondary schools in Mansa, the researcher will use stratified random sampling to select four (4) secondary schools, and they are within 5 kilometres square from Provincial Education office and nearest to DEBS Office, oldest serving primary- Secondary. The Schools are: Kombaniya Secondary and Mutende Secondary. For each of the above selected schools a Purposive sampling specifically experts technique would be used to select three (3) select a teacher amongst computer studies staff schools participated in the study and the Education Standard Officer-Mathematics (Computer Studies). The total sample size for the study would be sixteen (16) respondents including one focus group (6 per group) per school. According to Kombo and Tromp (2006) justifying for using purposive, stratified and simple random sampling approaches were as follows:

- Purposive sampling targets a group of people believed to be reliable for the study (extreme case sampling). This would be used to sample the Provincial Education Officer (PEO), District Education Board Secretary (DEBS), the Education Standard Officer - Mathematics (Computer Studies), and Computer Studies teachers.
- Systematic random sampling (of schools within 5 kilometers from DEBS office) deals with making a decision to choose using an orderly manner following the sampling interval.
- Random Stratified Sampling (of schools for triangulation) deals with dividing the population into homogeneous subgroups then using simple random sampling from each group.

3.5. Data Collection Instruments

Data collection instruments to be used in this study will be interview guide, questionnaire guide and observation checklist. In the study, the interview guide would be used in two forms: the semi-structured interview would be used on the high ranking official (ESO) as it has both open and closed-ended questions makes it flexible, having in-depth information and also collects complete and detailed understanding of the issue. Similarly a structured interview guide would be used on computer studies subject teachers with an addition of this being systematic and saving on time, and because of the credibility of the information gathered which would be high (Kombo and Tromp, 2006).

A focus group discussion schedule would be used gathering information from learners and is not bias to ask the respondents individually. The information would be collected from six (6) respondents sample in the interest of saving time. The researcher would also use document analysis.

Additionally, the researcher would use unstructured observation this is where the researcher takes position of an onlooker but observes the knowledge, skills and attitudes that learners would have acquired in the subject by applying them. This will be descriptively done to help understand the behaviour pattern that is physical and also social context. This would be good to observe row behaviour as would happen in the normal context as learners are learning. Also the other observation is to see how appropriate the contents of the syllabus are to the learners at their level via previous and current continuous assessment analysis from the progress reports and classroom exercises respectively.

3.6. Ethical Considerations

The researcher would seek permission from the provincial education officer, district education board secretary and consented permission from the Head teachers to have their pupils as participants, and obtain an introductory letter from the University of Zambia. The researcher will explain to the participants what the study would be all about; also obtain informed consent and voluntary participation by creating rapport with the respondents and explaining to them the purpose of the study. The researcher would also ensure confidentiality and anonymity of the

respondents that their identities would not be publicized. Ethical issues are looked at as a matter of sensitivity to the rights of others and respect for human rights (Catell, 1966).

3.7. Trustworthiness

Trustworthiness is all about the concepts; credibility, dependability, transferability and confirmability which can be used to describe the term (Johnson & Goettsch, 2000). In this study, trustworthiness was attained by attempting to provide a clear and distinctive description of the research context, selection and characteristics of respondents, data collection as well as the procedure for data analysis. In qualitative research, the concepts such as credibility, dependability and transferability have been used to describe various aspects of trustworthiness (Patton, 1990). Credibility is how confident the qualitative researcher is in the truth of the research study's finding. This would use triangulation to express the research findings. Transferability is how the researcher reveals that the research study's findings are applicable to other contexts (similar situations/population/phenomena). Confirmability is the degree of neutrality in the research study's findings which would be grounded on the participants' responses. Here the establishment that the research study's findings should accurately portray participants' responses. Dependability is the extent that the study could be repeated by other researchers and that the findings would be consistent. If relates a person wanted to replicate a study they should have enough information from the research report to carry out and obtain similar findings gathered. This would require an outside person to review and also examine the research process and the data analysis in order to ensure that the findings are consistent and could be repetitable (Saunders et al., 2011). Overly, trustworthiness in this research study was attained by attempting to provide a rich and distinctive description of the research context, selection and characteristics of respondents, data collection as well as the procedure for data analysis.

3.8. Data Analysis Procedure

According to Kombo and Tromp (2006) define and state that data analysis to be orderly collected data that should be meaningful and useful when answering the research questions it has to be analysed, and should be systematically done. This will involve selecting, categorizing, comparing, synthesizing and interpreting the information collected. According to White (2005), data analysis is in two broad ways namely qualitative data analysis and quantitative analysis. In this study,

qualitative data would be analysed through emerging themes and descriptions according to the order of research questions.

3.9. Summary

The chapter covers discussion on the methodology that was used in this study. The approach was intrinsic case study approach while the qualitative design enabled the researcher to collect and analyse qualitative data.

CHAPTER FOUR: PRESENTATION OF FINDINGS

4.0. Overview

The previous chapter outlined the methodology employed by the researcher to come up with data by means of the stated research instruments. This chapter presents the findings of the study as was provided by the participants. The findings are presented according to the study questions. The study questions were as follows:

i. What knowledge, skills and attitudes have been acquired by learners in the subject in the subject in relation to targeted outcomes of the syllabus?
ii. How do learners apply the knowledge gained in Computer Studies subject?
iii. Which topics in the syllabus do learners find to be difficult?
iv. How appropriate are the contents of the syllables for learners at their level?

The researcher had interviewed two (2) teachers, one (1) Senior Education Standards Officer and had 2 focus group discussions, one from each school. The focus group discussions had ten (10) pupils and the other 6 respectively. The information gathered from the interviews, focus group discussions and observations were useful in achieving the research objectives. The questions used in both the questionnaires and interview schedules were the same with the study objectives in order to collect data on the same topic from different respondents. The researcher later identified themes closest to the research objectives also repeated patterns in the sentiments of the study participants. Additionally, the literal words uttered by the respondents were used as much to depict exactly in the descriptions, but otherwise other words had to be paraphrased.

4.1. Observation of acquired Knowledge, Skills and Attitudes of the learners

One of the research instruments was the observation schedule from which the researcher used to collect data that would reveal knowledge, set of skills and the attitudes that they may not necessarily express in words. And it is worth mentioning that the secondary schools (school A and school B) both have spacious computer laboratories, of which school A (Mutende) has two and school B (Kombaniya) one. They both have computers, printers and photocopiers that are in good working condition. Also, that they have lessons timetabled and that the learners had updated personal computer studies note books. Both schools also have Wi-Fi servers for internet use.

With guidance from the observation schedule the learners were all able to observe what was not connected and then they reconnected, and then they followed the safety before switching the

computers on. Also, the learners were able to command the computers as required. At both schools, on another hand, the teachers handed the learners tasks in respective practical applications (skills), and they were able to locate Icons and open the Microsoft word, Microsoft excel and Microsoft publisher (PowerPoint). In all the tasks given the learners were able to follow the instructions carefully and they were able to reflect/present the tasks accurately. Though not all had the tasks done within the allocated time for the task, while others were done time given.

From the researchers observation the tasks relating to the application software Microsoft word on the word document was the fastest to completed then PowerPoint and lastly Microsoft Excel on the worksheet especially on inserting the calculation formulae. Among those that were unclear of the task they consulted among themselves irrespective variation of tasks. They were able to follow the safety measures of computers by dressing them after tasks were completed.

4.2. Knowledge, Skills and Attitudes learners have in subject

In the focus group discussion (FGD) learners addressed a great deal and uniquely on their acquired knowledge, skills and attitudes in computer studies as a subject. To begin with, the Learners attitudes and skills that they acquired are a reflection of their knowledge that is theoretical and pragmatically. Also, Learners have home knowledge and use of computers (was by show of hands) while others had first experience school and gave credit to trained teacher who was eclectic in delivery while others first experiences were from previous institutions of learning.

Of the learners in FGD at school A where most of the learners had a background of computer use (skills) and knowledge while others had the first experience at school and among those mostly had difficulty as everything was new and it had to take deliberate stance to grow in the skills and knowledge, this was with assistance from the staff would allowed access to the computer laboratory whenever it was free. The growth/improvement in the skills and knowledge was based on the interests of the learners. In the process there has been the growth in the knowledge and skills in Computer Studies subject and the general artificial intelligence devices. Four of the learners with home background from School A reacted to the first question that;

> *I have knowledge because at home we have a stationery and café shop where I go to help out*

I have the knowledge from home which I have been using to help on the home-based personal computer/desk

I only started learning about artificial intelligence devices from computers studies here at school and other times I would ask my teacher to grant me access to the computer laboratory for more practice… I would spend three (3) hours just to open and operate Microsoft word document and other general basic use. Later my uncle purchased a laptop after my computer studies interests were evident.

I was interested in the game Eurotrack which was found on one of the computers in the Computer Laboratory.

While amongst the skills and knowledge in Computer Studies subject led the learners to improve in the typing skills which they acquired from their lessons and interaction with other learners; also, that led to improvement the speed. The learners also added that Computer Studies has its benefits that are social and others economic, the latter been it offers self-employment as Zambians would start up typing, printing and laminating as skills.

One other learner voiced that;

Considering the free and extra time that we would have our teacher would allow use of the computer laboratory I would improve on my typing skill…due to constant use of computer (with permission for teacher) improved speed typing speed.

Another learner said;

I would make use of the home based computer to make money typing assignments and other school related tasks on behalf of my brother, mother and aunt respectively.

Additionally, the learners had knowledge on how to use the internet despite challenges it comes with. Their reactions were;

Internet has been made more available, and also that the use of commands for accuracy in communication… if faced with a problem the internet service provider have a way on how find self or directed help.… learning Computer Studies has easy way of operating using short-cuts.

The learners generally learnt that there is general use and search of information on different artificial intelligence devices. One learner reacted;

> *Not only did we learn the use but also how to share information and how that storage is easier*

Another echoed that;

> *It eases work load as there is sharing information and able communicate more effectively and that there is proper Storage of relevant information even in large quantities*

Another added further revealed that;

> *It is easy access to information from central database like a school and limited access to the same network… knowledge and attitudes to preserve computers from crushing, also environment that is spacious free from the dust.*

Among the Learners some were able to correct each other on what knowledge, skills and attitudes they had learnt. One learner from School A reacted;

> *I think my friend meant short-cuts for example saving word documents/spread sheet automatically by pressing buttons Ctrl and S at the same time as it saves time.*

On a more practical side, the knowledge to create folders, store information in large quantity, send message for communication by having feedback that leads to exploring computer, printing of information from create documents and operating them.

Boldly the learners from school A and partly from school B consented that Computers, justified by one learner, that they are general artificial intelligence devices, used for productivity economically. The learners reacted consensually;

> *There should be proper interaction with general artificial intelligence devices for example manipulating commands to make slides presentations, applying formulas and equations in Microsoft Excel, type letters in Microsoft word, manipulation of PowerPoint to present information for public sensitization or sharing information using other artificial intelligence devices like projector or LPD screens.*

The learners from both school A and B revealed that right attitudes go hand-in-hand with knowledge and skills; also, it would be help to prevent harm befalling on the user. A learner each from school A and B expressed that;

> *Attitudes like competence in reading helps with the right attitude and computers deal with commands and also considering the safety measures before, during and after using a computer*

Other learners further added that;

> *Creating a conducive computer use surrounding (working environment) and the user positioning relating to computer… There is need for the right sitting posture which may prevent physical stress and fatigue… and the readjusting of the brightness to relative to prevent eye dysfunction; also referred to night blindness.*

Aside from that they addressed Security of the computer from virus and they revealed that they would use the knowledge learnt which is an attitude too. Some learners consensually reacted;

> *Whenever I would want to watch a movie I would connect a flash drive onto a computer without scanning it for viruses but from the time I learnt Computer Studies subject its different*.

In the similar way an attitude of Protecting information in using a 'password' is a choice on what is taught and how one finds it applicable. Among the pupils one was strong against hacking with every advantage brought out which led other pupils to state their knowledge against cyber-crime use of passwords. The learner argued that;

> *One has to be careful with use of internet as other would demand person details and one would be victim of cyber-crime… it is not normal to demand for personal details including passwords*

While another added it is also justified general knowledge. They reacted that;

> *It important for example during the AIRTEL MONEY TRANSFER but if the other insists it been criminal rather you use a bank.*

Additionally, on behalf of parents, there must be parental guidance against sensitive information. The learner lamented that;

> *To avoid Pornography for instance the DSTV decoder has a provision to put parental guidance password*

The learner further added that;

> *Exposure to internet can make one addicted to pop as there are many pop-ups as one is online.*

However, some knowledge the learners had from both schools stated that the usefulness of computer studies subject. The learner argued that;

> *Over time being as it has helped in the provision of Health cards for access to health care; however, it has also reduced human interaction leading to the loss of jobs with the constant use of E-commerce. E-commerce is very important though it has advantages and disadvantages, faster and easy to access or purchase commodities regardless of place and time for instance Ebay and general global purchase.*

One of the learners from school A justified E-commerce and emphasised consideration;

> *Before anyone buying and using those services one needs to note the copyright and insured of the site to use against cyber-crime.*

Another Learner from the same school shaded more light on cyber-crime and how crafty people are having the ICT knowledge and skills. The learner emphasised;

> *Below the site are terms and conditions attached to access the products and any other agreement the costumer and trader need to consent to for anything… If you use a particular site and then circumstances to cyber-crime then you can sue the owners of the site to compensate you… I downloaded a game app but it was scum as the site was a fake.*

Disadvantage is that one is prior to be hacked for relevant and private information yet expose to public. The learner lamented that;

If I am obtaining higher school and another is too, in the event the information is similar one is prone to hack information and generally tamper from comfort of one's own home

There are social disadvantages like the social defect. The learners reacted;

One would stop to socialize with people in the real sense reality rather interact with people on social media or playing games all the day. This leads to interdependence on artificial intelligence devices especially with the electricity outages which can lead to lack of productivity as access is limited if only stored on computers as backup without alternative external power. While an advantage is that storage is easily accessible with new application of iCloud which is an internet database.

However, the teachers the pointed out that the learners are able to apply all application software. In word, excel, publisher, PowerPoint as they can appreciate and come up with relevant and various documents. The teacher said;

Learners are able to design for instance making ID cards using publisher. In Multimedia topics they are able to transfer and edit images from different digital devices for example learners cropping part of the picture and also the basic switching on and off of the artificial intelligence devices. Also the learners know the use of a bios to test if the system is able to work or not, and they can prints too. The learners Application shows acquired knowledge as tasks given reflect feedback…. Monitoring is done both practically and theoretically and these assessments are on at least three software.

The Senior Educational Officer, however, revealed that Computer Studies aims offer learners ability to function academically, socially and generally economically in communities. The Senior officer reacted;

If these skills are not offered it would be difficult for learners to fit in the global community and them being irrelevant to economic activities and systems generally. Also learning itself is now E-learning even at Early Childhood Education (ECE) related to an extent that iSchool has produced tablets. Learning faster and better

once expose to Computer Studies Spiral syllabus, information is added the higher the level

Additionally, the Senior Educational Officer stated that in the process learners would gain skills and knowledge then appreciate computer as subject but also interaction socially and economically. The senior officer said;

Among many lessons are the safety of a computer; the use that are there about use of computer; the maintenance of computer to the application of knowledge and manipulation. There are also the use of Computer Studies concepts to improve on entrepreneurial skills to better the communities and economy. This would help the learners to learn other subjects with the Computer Studies for example the search for information.

4.3. How Learners apply knowledge gained in the Subject

A consensus clarification from the learners was that the computer is mostly approached with difficulty but if the persons using it could approach any other artificial intelligence devices like phone in the long run it would also help the users improve the typing skills and other skills but with the confidence of using a phone. One the learners reacted that;

A computer (desktop or personal computer-laptop) is just big but has functions like a phone. And people have started business through acquired skills, knowledge and attitudes.

The learners discursively stated that as learners they would use acquired set skills, knowledge and attitudes at school in various forms however beneficial. The learners from school A advocated that;

During the JETS fair on innovations and prepare a project report on the same… I help type lesson plans and essays for my father (teacher at the same school) and my mother too….I also type assignments for my mother who also teaches at this very school and this would be done with the need to help out with work load competitively with my siblings.

Another one has typed assignments at a fee, and a first timer computer user from school to the acquired set of skills, knowledge and attitudes teachers trust him typing very sensitive and important documents. The learner from school A voiced that;

> *I told my Aunt I would type her two assignments at revised price instead of her taking elsewhere and printed out as we have a printer home.… I helped type the assignments and final papers for the masters/PhD thesis... we did not have a computer and after the acquiring knowledge, skills and attitudes at home one was acquired where I am entrusted with maintenance and use even tasked with typing and manipulating the information into a word document.*

Furthermore, the learners revealed that familiarity to computers affect application and practice, also the desires and interests. The learners from school B reacted that;

> *I use skills in PowerPoint to make presentations in church when I am given the task and also presentation itself.… I teach computer studies skill to others and its uses' and another affirmed doing the same*

While others from school A added that;

> *Practice how to connect to the internet…I use skill at home typing letters on behalf of some of the family members especially application letters.… I use knowledge, skills and attitudes in a family business, an Internet Café and Stationery.*

Therefore, with the ability to apply computers in the learners daily lives while would disadvantaging as one is surfing the internet there are constant pop-ups that intense into watching pornography.

However, according to the teacher (school A) there were no present forms to show the acquired knowledge in schools but they confirm from their home setting or community as other part of running a stationary shop aside from the assessments. The teacher responded that;

> *It is presumptuous that learners apply knowledge, skills and attitudes outside of the school. It is not common to give tasks aside from general assessments for the growth in Computer Studies subject. For instance they were given a task in Multimedia*

were they shot a video and recorded an audio then they had to come up with integrated video and audio. Some managed while others didn't.

However, from the perspective of the Senior Educational Officer the view is that for learners to achieve tasks that prove they have theoretical knowledge and showcase the practical knowledge from connecting the device, use to final product at every learning level for example printing documents, typing, editing and so on. The senior officer revealed that;

The Syllabus gives learners at different learning level an expectation for that particular level which is anticipates the skills and knowledge to be acquired. On those satisfying observations the performance level then the learners can build on from there access to these Computers outside school. Systems may be tricky for most learners; however, there is a set target that learners should achieve in their performance in any subject for example manipulation of facilities appreciation of day windows and offices.

Additionally, there is a practical part of learning which is determined by the acquired knowledge. That is the only way that the Computer Studies is monitored as applicable through assessment. He later added that;

Theoretical knowledge is truly acquired just the practical part though it can be affected in that there is little time of contact and practice against the number of computers and ratio to pupils, plus electricity use. Practical teaching and learning is mostly the challenge in Computer Studies while theoretical is mostly met.

4.4. Topics in the Syllabus learners find Difficult

The researcher under this theme focused on the topics in the subject content that the learners found difficult and how that they overcame the challenges. Also the learners could use almost the entire computer programmed software. The learners' reacted;

D*ifficulty is dependent on how I relate to the topic and it is mostly on the practical interpretation of data…* Most learners [paraphrased] *I find operating on Microsoft Excel and decorating a page and designing in publisher is a challenge.*

The learners' response on how they met the above;

> *I would meet the challenge through constant practicing with a computer at home…while for me at school when allowed in the computer laboratory… While* (in one voice*) I (respectively) have problems making presentations in PowerPoint and Excel, and meeting the challenge is similar.*

Some learners used to have issues in connecting to the internet and assembling desktop computer especially new one computers (practical). The challenges were met through consultation and observation from the teacher mostly and relating to intranet. Below are their reactions on other challenges and how they are met;

> *I still try to work-out and find out from among fellow learners. Additionally, difficulties in making or applying formulae and equations in Microsoft Excel was met from use home computer with help, my father even in the formulating formulae and equations… my sibling has been helping from home. While the challenge on the use of the internet I would to go about it finding out from my teacher and among my fellow learners that know.*

Another learner, however, found the connection to WiFi easy. The learner said; '*with constant practice also teacher allows learners to come back for further practices after classes.'*

Additionally, other learners especially reserved ones would have difficulty even in presumed basics,

> *I have issues on how to make a file… I can help, just click right side of mouse and click on file. Unfortunately, I haven't asked anyone for assistance, I have not just done that (shy and lack of confidence learner and not willing to ask)*

While fellow learners offered assistance, who said;

> *We would at times have issues on the general use of Computer Studies from acquired information to the application of the acquired.*

Others had challenges on things beyond or out of the grade 8 and 9 learning syllabus and some pupils who have acquired higher level and help other learners who affirmed orientation from home. The learner's responded that;

I admit after downloading Fifa software application then trying to crack the code (finding serial number… I want to know how to flash a computer or artificial intelligence device without unlocking… there is specific software to use to flash the computer and the use of the internet.

On another hand, the teachers have perspective on what topics the viewed from their interaction the learners. Learners have difficulties in Microsoft Excel and the difficulty is due to calculation. The teacher reacted that;

Being a teacher of Math using math to teach Computer Studies is use cells to find answers it is the right information put into the right cell then applying a formula. The challenge has been met through teaching excel repeatedly also another is teaching towards exams is better as the learners would not forget easily.

Furthermore, the teacher added to their perspective and how they met the challenges. The teacher's addition was:

Due to limited time to offer repeating and constantly teaching the same thing plus less artificial intelligence devices aside from other topics will suffer. Over enrolment is a problem whereas practicals are an issue to meet as required. At lower grade, G8, they don't do anything challenging just general basics. I created groups and use my own private time to meet the learners to familiarize to artificial intelligence devices for example four (4) groups to be taught at the same topic.

At the SESO's level and District it is about if it is difficult from teaching perspective or learning whether it is the method of delivery or the learners grasping the concepts. Difficulties may not be universally applicable. The senior officer responded;

On average Luapula has 20% are exposed to computers or artificial intelligence devices at home or general communities. The best answer would be known about what topics are difficult for learners are the learners and their teachers. Then we would build capacity for teachers through teacher group meetings (seminars) which spill over to CPD meetings then further discussion only then will the feedback and assessment reach the SESO who do routine checks which reveal partly but it is mostly through teacher group meetings reports.

Though compulsory as a subject to be taught but it was ECZ made the assessment not compulsory due to availability of computers, equally the registration of pupils was six to one computer to sit for exams the computer number determined the pupil registration and the is relative from school to school. In Mathematics, the teaching of computers is more than Business especially on programming concepts. In the next 3-4years there would be more changes and recommendations to improve of the Computer Studies subject. Additionally, the senior officer said;

> *Now the Government teacher training are third years therefore the encouragement of person's with computer knowledge trained in educational field to meet the need. No wonder the Computer Studies has issues even is placing it under a department due to the complexity and lack of teachers 'in secondary schools Computer Studies was put in Business studies department from typing concept but there is more hence the move to Mathematics department but it may be moved again maybe as an independent department.*

4.5. Appropriateness of the syllabus at learners' level

For the learners all the topics are appropriate and they are all important. The learners were all confident in the syllabus and that it how be maintained. All manner of information in Computer Studies subject may not be useful now but it is beneficial in the future. The learners' consensually irrespective the schools A and B they collectively said that;

> *We have better advantage. Proud to have the knowledge that others do not have. Boost confidence and the desire for knowledge. Also, it forces learners to do better. And it encourages as is has helped with interaction as there is teaching others including elder relatives who are unskilled and unschooled.*

On another hand the teachers weighed the Syllabus and the content as okay as there are cross-cutting topics like in mathematics there is computer mathematics that learners are helped to understand. The challenge is present subject official books' content are not detailed. The teacher from school B argued that;

> *The text books are very shallow especially MKs at grade 8 while grade 9 revised syllabi which has summarised content. This has led to over reliance on the internet for content to teach effectively.*

Additionally, aside from that there is need to include some topics. However, there is no exclusion of content as all that are in the syllabus none should be removed due to relevance. Both teachers gave similar reveal that;

> *Basic programming is needed especially for those going into grade 10 as it poses as challenge thereby being a prerequisite. Also, Microsoft Access were they use of spread sheet in databases. Learners may stop school at grade 9 that they can use this to create simple databases and earn a living considering modernization which can help leave the use of paper work.*

Teachers recommended there to establish a stand-alone association for computer studies subject and a department. Teacher from school B edged that;

> *Presently Education Standards Officers are just interested in the subject and not specialised. Improvement would be based on competence and qualification which is credibility. Also Books for content need to be supplied, grades 10-12 content is dependent on the tertiary data hand-outs or the sort. Grade 8 and 9 content is more basics hence related data on internet but grades 10-12 more complex as it more specific.*

And lastly, the teachers from school B highlighted the revelations that;

> *Poaching staff to teach using Teaching Practice (TP) experience students and local arrangements against payments which was a year ago of the research study.*

From the Senior Education Standards Officer the revealed the syllabus as appropriate and if pushed to add a lot it would place more from the country. It may create a big information gap if alter the syllabus or contents of the syllabus. The officer emphasised appropriateness that;

> *It is bit okay but others are of a different view especially with the revelation of teachers sent to Seychelles. Teaching there proved our teachers were under prepared to handle junior classes due to the detail demand that the local staff had e.g. designing.*

4.6. Summary

This chapter has presented the findings from the participants on the Lived experiences of learners of Computer Studies at Mutende and Kombaniya Secondary Schools of Mansa District, Zambia. Participants argued the lived experiences of the learners of computer studies subject in Mansa District. The subject has been said to be extremely beneficial and ought to be compulsory at all levels as it imparted life skills in learners although with challenges revealed around. Prospects of the study reveals the progress of the implementation of the revised curriculum and how the learners have benefited, especially how the learners' performance marries with their background, present learning environment and consideration of all stakeholders within the classroom and immediate community have impacted them. Also reveals how far the content of the syllabus whether including or excluding some topics depending on the learner involvement and how appropriate the level of content is and also how effective the knowledge, skills and attitudes are. The next chapter discusses the findings according to the objectives themes.

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.0. Overview

The foregoing chapter presented the findings of the study on the lived experiences of learners of computer studies at Mutende and Kombaniya secondary schools of Mansa District of Luapula Province. This chapter focuses on the discussion of the findings under the sub-themes that emerged in line with the objectives of the study. References are also made to the literature reviewed so as to authenticate the findings.

The following were the objectives that guided the study:

i) To what perceptions of learners on Computer Studies in selected schools in Mansa District.

ii) To investigate what knowledge, skills and attitudes have been acquired by learners in the subject in Selected schools in Mansa District

iii) To investigate what targeted outcomes of the syllabus have been met in selected schools in Mansa District

iv) To investigate how learners, apply the knowledge gained in Computer Studies subject

5.1. Observation of acquired Knowledge, Skills and Attitudes of the learners

Considering that the participant secondary schools have spacious laboratories containing desktop computers, printers and photographing machines in good working conditions which is line with Siddiquah and Salim (2017) and that their lesson time-tabled, also the learners had their note books updated with lesson notes, and also use of WiFi servers which make a conducive learning environment. This is despite Albuganmi (2016) who states that Zambian schools like Saudi Arabian secondary schools lack infrastructure to support compulsory subject, and also Mndzebele (2103) though not very conducive if compared to other countries it is still outranks others. But the former showed that learning was/had been taking place as necessary tools to learn computer studies subject were available, and also the availability of the teaching staff, though not all trained but had enough knowledge to facilitate learning as all (teacher of computer studies subject) had to affiliation/seconded to teach the subject. This can be revealed from observations how the learners were able to reconnect the parts of the computers before switching them ON following the safety protocol which showed acquired attitudes (Righi, 2012).

The learners were able to follow commands required for the task given by their teachers of computer studies subject (Teacher if Computer Studies). The Learners ability to locate Icons and open them as per instruction demanded continued to reveal knowledge acquired. According to Zambian Daily Mail Limited (2018) and Young (2008) learners are expected to master theory part to apply practically on artificial intelligence devices. While operating or the applying the actual command also showed that learners had obtained set skills. Both knowledge and skills were affirmed as obtained accurately as they followed the tasks and they appeared as required. Righi (2012) states the degree of completion of work tasked is based on time spent, speed and accuracy. This was obviously achieving at different rates in time of completion as some were more detailed as compared to other tasks. Furthermore, the Learners choice and option of the task affects the experience due to the response interpreted as an attitude.

Additionally, the application of the software for example in Microsoft Word was the fastest due to it been the common and it has most commands with less complexities, second was PowerPoint and lastly it was Microsoft Excel as the complexity from observation were on the inserting of formulae and the calculations. Righi (2012) further adds learning is by applying the experience, in this case from the attitude of problem solving after deep thinking.

And from observation it was clear other learners were consulting from among themselves despite the variety of the tasks handed to them respectively confirming with Nnaekwe and Ugwu (2019) that learners experience must be active, reproduce/produce knowledge and has to be collaborative which make learning a meaningful and enjoyable. And before they could shut down the desktops they again revealed acquired knowledge and attitudes by dressing the computers for safety protocol. According to Noor-Ul-Amin (2013) and confirmed by Ugwu and Nnaekwe (2019) pupils should be engaged and motivated to apply themselves and that is because skills in ICT support aspects of constructive knowledge, also that learning process should be enjoyed by the learners themselves.

Pelgrum (2001) state student controlled approach where learners control learning (learners assisting themselves), though at their own learner-to-learner interaction. This was seen even during the observation of how learners responded to the tasks given during this research.

From the look of things the progress report shows that the learners respond fairly well to the subject while some exceptionately well and yet another group of learners do/perform poorly. The

performance for some seems unstable; others are stable which is relating from the constant continuous assessments. Also that perception of learners hinges on teachers exposition and teaching content (Noor-Ul-Amin, 2013)

5.2. Knowledge, Skills and Attitudes learners have in subject

In the FGD learners discussed their acquired set of skills, knowledge and related attitudes from lessons and interactions which the learners attributed the general subject as beneficial socially and economically. Bvute (2017) and Wheeler (2001) mentioned that social and economic needs through ICT bridge the gap for future interaction and economy. Some knowledge result into sets of attitudes that have to be used and also into set skills. The former being addressing attitudes from knowledge: the security of against virus by having/developing an attitude of always scanning the computer and anything else that is external artificial intelligence devices.

According to Odhiambo (2013) argues that acquiring ICT show nurture attitudes among others: critical thinking, researching for information using any artificial intelligence devices, learning independence, problem solving, creative thinking, time management and even decision making. While research shows security against being hacked and password use this is in safety to protect private and confidential information. Additionally, attitudes towards internet knowledge are how Learners respond to both the general and specific information gathering. However, another is based on the storage space and what to store one has to apply the judgmental attitude justifying the information and the size to be stored/ preserved. The computer laboratory kept clean as accommodative computer laboratory operation.

On another hand Suberu (2013) state that attitudes affect and also influence performance which affects interests and performance, as Mtonga, Imasiku, Mulauzi, and Wamundila, (2012) reveals that there were more learners with frequency to access to artificial intelligence devices in a week and slightly lower those that recorded rare frequencies and that leads to competence. Mwaba-Chiluba, Akakandelwa and Chiluba (2019) strongly disagreed that number of hours used in teaching computer studies lessons is sufficient. However, an unplanned attitude acquired is the ability for learning to help and sustain (correction of one another) the knowledge, skills and attitudes obtain. Though is restricted to accommodative learning environment. Additionally confirming Young (2008) that technology helps improve reading, this research revealed that there is the attitude of taking time to read, good reading culture, helping create more conducive learning

environment as with reading comes self-learning following self-services general and more specifically.

The second part would be knowledge results into skills, the use of the internet and command for accurate communicate, and provisions and access to services. Son, Robb and Chatismiadji (2012) state attitudes in computers are influenced by computer knowledge and skills. From this is helped by the knowledge to use short-cuts to command operations and access, and making use of internet. Mulauzi, Walubita and Pumulo (2019) affirm that application is in basics of computer studies skills. And this can be narrowed too to search of information which does not limit but general artificial intelligence devices with provision of information which is both for personal gain/use but also sharing. Additionally, how to preserve vital information by storing it and prevention from computer crushing of which Mtonga, Imasiku, Mulauzi and Wamundila (2012) revealed that as one activity use for the learners.

Reading skill ought to be improved as some knowledge is obtained with self-service. Both Jere-Folotiya, Chansa-Kabali, Munachaka et al. (2014) and Ojanen, Ronimus, Ahonen, Chansa-Kabali et al. (2015) that low level literacy which affects computer studies subject as reading is an attitude. Young (2008) exposed that technology improves reading. Thereby improved reading skills are also critical thinking and analytical attitude and skill. This help in following commands and application thereof and safety too and also the skills of accessing general information on limited and open database. The skills that show knowledge are the creation of documents through application software. It is not just creation but also manipulation of the application like Microsoft Word, Excel, PowerPoint and Publisher which work also do help in socialization and economic community.

The first-timer experience in school with computers and other artificial intelligence devices had difficulty in breaking the knowledge, skills and attitudes as new concepts and also the help from staff and fellow learners. This was coupled with personal interests though others' interests were based on games or fun that comes with playing a computer (Mtonga, Imasiku, Mulauzi and Wamundila: 2012). However, Smarkandi (2011) states that there is less anxiety among learners with exposure at previous school and home. Furthermore, Young (2008) affirmed that peer coaching works for self-reliance for those learners that fear to failure and avoid constant reference to teachers hence making teachers facilitators.

There was knowledge that was key for one to have skills and other attitudes, however, there is general knowledge on artificial intelligence devices for example the improvement to health-care has been made less stressful with paper work as Health card and electronic filing of patients is in place and are used instead and also that there is easy access to stored information from any satellite database like iCloud (OCED, 2015).

Also, that there is need to follow knowledge on sitting position and brightness of the computer and general artificial intelligence devices verses the human interaction to avoid physical effects like backbone aches and night blindness. Also, that computer studies subject helps, according to Ziden et al. (2011), enhance understanding and improves learners' memory.

The learners believed there disadvantages found in knowledge, skills and attitudes one been less human interaction and increase job losses. This is because there is over dependence on artificial intelligence devices and with the outages on power supply which results in low productivity. Also there is increase in cyber-crime preyed on due to the addition of personal details via the use of internet. The learners submitted suggestions to caution transactions on E-commerce on trading sites with copy-print and general goodwill.

From this background of knowledge, skills and attitudes obtained the learners were able to raise concern with hopes that parents ought to be extra cautious of what general interaction with artificial intelligence devices has on learners. This is also the knowledge that learners obtained like OCED (2015) revealed that excessive use of the internet is cyber-bullying and harmful content. Further the learners revealed that Pornography can easily be accessed and also the manipulation of information to suit the user (Begar, Kounkou Hoveyda and Sinha, 2011). Hence there is need for parental guidance like DSTV (MultiChoice) has installed just like most artificial intelligence devices to prevent crimes, bad influence, and exposure to sensitive information above children's knowledge level.

However, the teacher of computer studies subject should understand and need to be able to apply knowledge, skills and attitudes in Microsoft Word, Excel, Publisher and, PowerPoint. According to Noor-Ul-Amin (2013) and Zhao and Cziko (2011) perception of learners' hinges on teachers as it is reflect on the learners' experiences. Therefore, learners' application shows acquired knowledge, skills and attitudes as tasks given reflect feedback. And monitoring should be on both practically and theoretical assessed.

However, according to the SESO revealed that considering that Computer Studies subject has aims it offers the ability for learners to fit in school academically while in communities and the entire globe socially and economically. Having also in mind that the syllabi from ECE is progressive hence spiral meaning that there is an increase level of knowledge as one progresses upwards (Behar and. Mishra, 2015). Therefore, the knowledge, skills and attitudes have made the learning and teaching process faster especially where the iSchool were able to produce tablets that are to be used to learn. The learners should use computer studies subject concepts that would improve entrepreneurial skills so that communities and economies are better off.

5.3. How Learners apply knowledge gained in the Subject

Artificial intelligence devices have common functions and knowledge, skills and attitudes can be familiarized and one can use them for economic gain for instance starting a business. These knowledge, skills and attitudes, and partly some functions can be transferable hence the boost in the learners confidence and experience in using artificial intelligence devices. These artificial intelligence devices can be understood as different but there some functions that make them similar though specifications and major function. Mulauzi, Walubita and Pumulo (2019) confirm that that application is in basics of computer studies subject skills each as executing commands. The attitude that needs to be applied to artificial intelligence devices has to be the same despite the artificial intelligence devices.

However, some learners have started assignment typing, editing and printing while some use the PowerPoint to prepare presentations and which they help to present in different fora. And this merges with Mtanga, Lamba, Mulauzi and Wamundila (2012) who stated that the use of ICT for learners was for project and storage. Due to access to computers the Learners have become experts as they have enough time spent on artificial intelligence devices (Gomba, 2016)

Learners have used artificial intelligence devices for creation other innovations or improvement thereof, also in the collection of data and for manipulation of data to present it in a form that is desirable like creation of word document by typing and editing a report or thesis on behalf of someone else or family member. This confirms with Mulauzi and Albright (2009) that's individual access and use of ICTs amplifies the importance of information and development. Learners are able to use their knowledge, skills and attitudes to preserve, maintain and take care of generally any artificial intelligence devices. According to Attwell and Battle (1999) there is a relationship

between access computer use at home and school which affects general performance aside from the improvement is reading while additionally Kleine, Hollow and Paveda (2014). Learners can create media content as they did in their research due to internet access and content of background from home and school. Mulauzi, Walubita and Pumulo (2019) affirms that there needs to be an interaction that is formed as a resulted at school, the faculty and within the community.

Some learners help out in the family business like stationary and Internet café for general internet use and manipulating of data in PowerPoint, publisher, Excel and Microsoft word and also they help sensitize others to have the same knowledge, skills and attitudes to generally help with interaction with artificial intelligence devices. Mulauzi, Walubita and Pumulo (2019) affirms that the interaction with the internet results in increase and/or search for information. The Learners would have enough access to computer and internet; they would experience what others would only know theoretically such as web designing and blogging, which would be out of interest to explore (Gomba, 2016). Although there is not enough time for learners specified and very few learners would have limited access to internet hence it been difficulty to prescribe the time spent on the internet surfing for either academic or recreational purposes (Siddiquah and Salim, 2017).

However, both Senior Education Standard Officer and Teachers of Computer Studies subject answered that acquired knowledge, skills and attitudes are presumptuous. What learners' achieve in task whether theoretical or practical knowledge proves acquired knowledge, skills and attitudes, and the syllabus aims which are expectations that are in levels or phases from the syllabus content. Acquiring knowledge, skills and attitudes hinges on performance and this is mostly done through constant assessment (Behar and Mishra, 2015). This has been achieved practically as it the challenge not theories that is the use of artificial intelligence devices to produce for example through printing, typing, editing, presentation and so on.

According to Noor-Ul-Amin (2013) pupils should be engaged and motivated to apply themselves from the school experiences to community and globally were needs arise. Also, Becker (2000) stated that with the increase in ICT involvement even outside classroom and that is because students are key strategy to accomplish transformation as are both drivers and levers through assessments.

Knowledge, skills and attitudes are products that can be expressed after learning and relating to practical setting through assessment and operating on of the artificial intelligence devices. Also,

because there is no present form showing acquiring in school there has to be deliberate forms like Teacher initiatives to monitor knowledge, skills and attitudes aside from assessment. It is possible with learners actively involved and creativity of the Teacher of Computer Studies subject like a task for learners to produce a mix of video and audio in Multimedia concepts. According to Pandolfini (2016) technology encourages learners pursue personal interests despite focus on formative and summative assessment which are relevant and appropriate hence them being standard.

5.4. Topics in the Syllabus learners find Difficult

Most learners have had challenges in Microsoft Excel due to the use of formulae calculations, which Siana (2017) did not detail. And the learners had ways to handle mostly which is through constant practise aside from the consultation from fellow learners, staff or also from homes which have artificial intelligence devices (Siddiquah and Salim, 2017). Applying the formulae would be easy part after coming up with the formulae/equations which would be dependent on the information and how the application requirements are. The researchers Oroma, Wanga and Ngumbuke (2012) and Charles-Ogan and George (2015) justified that aside programming in computer science is tricky due to calculations any other calculation program.

The other would be PowerPoint and Publisher especially on the interpreting the design required to achieve in publisher. Those with artificial intelligence devices mostly do not have challenges as they would practise through. The rest only have to make use of the times of practicals and if allowed by their Teachers of Computer Studies subject.

Others had challenges in the connection and use of WiFi and general Internet. This is a challenge faced by those that did not have enough time for the internet (the use of WiFi generally) mostly coming from humble backgrounds and had no limited access to artificial intelligence devices. Cuff (2017) certain subjects are either difficult not highly depending on the strengths of the learners in spite of the teachers contributions or lack thereof.

One learner out of confidence belt within the Focus Group Discussions revealed that he had no knowledge on how to create a folder, which other learners thought was basic. It showed that there are some learners that would not admit they do not know and hide in their fellow learners mostly because the learning of Computer Studies subject would be in groups and not individual centred.

Righi (2012) revealed the relationship between teacher and learners affects the learning environment. There has to be a very good proportion and time allocated to learners and their teachers. This is against the resources especially for those without a background and access to home or general communities to artificial intelligence devices.

However, some other which background exposure showed that their quest for knowledge was beyond their Junior Secondary Syllabus level of content to be taught. Cracking codes after downloading or general hacking skills are extremely beyond learners' syllabus content which reflects the demand for the further revision of modernisation. Ogwo, Maidoh and Onwe (2015) reveals available lessons on exposure to internet and general artificial intelligence devices while Others desired to knowledge of hacking that of flashing artificial intelligence devices and by-passing security protocol set-up. To this Kleine, Hollow and Poveda (2004), Chigona and Chigona (2008), Beger and Sinha (2012), and Beger et al. (2011) reveal high social interaction among youths and exposure to lots of information, and among other pornography and cyber-bullying.

Also, among themselves the knowledge sharing and seeking is high as they have used their searching to discover more like the existence of the other advanced applications that would help for basic hacking skills by-passing the security protocol.

On another hand, the Teachers of Computer Studies subject exposed that Microsoft Excel has proved to be difficult for learners due to the making formulae and calculations involved. But for the teachers to meet the syllabus there would be limit on time. Also, the barrier of over enrolment makes the syllabus content and lessons seem difficult as no effective teaching would be done. A lot of pupils would be of dynamic backgrounds and challenges for the teacher to teach effectively; this is against the working relationship between teacher and learner (Righi, 20112).

Zhao and Cziko (2001) teachers should believe in the effectiveness of technology, its usefulness and ability to have control over them. This should reflect on the learners' experience.

From observation the learner was ashamed to confront the teacher about the lack of knowledge and manipulating/application of the little he knew. There is need for the teacher-pupil relation to be revised in computer studies subject in teaching and learning to be more individual centred despite the Teacher of Computer Studies subject, who attested at one of the respondent schools with high enrolment, that he had a lot of groups in his class to individualise. He did not say it

directly but implied it as he emphasized use of private time to help learners to have practicals and general lessons.

However, the Senior Officer brought out a strong and founded response that pupils and teachers would be the best to answer on the difficult topics for learners mostly for the District Education Board Secretary and Provincial Education offices only receive reports either through teacher seminars or teachers groups meetings and also Continuous Professional Development meetings and scarcely through their routine teaching and learning evaluations based on a classroom setting. Though the difficulties are relative to individual learners, the offices are more interested in universal difficulties and then finding the solution. And in the process, it is about finding out if the teaching and learning methods and the content obtained are applicable and attainable.

There is little to bring out about public schools verses subject performance however the subject been compulsory the Examination Council of Zambia (ECZ) made the examinations not compulsory consideration of the barriers or factors affecting the standard performance (Mambwe, 2015). This is yet to be addressed after four (4) years from the computer studies subject been made compulsory as the training staff would be deployed upon completion.

Behar and Mishra (2015) schools, education policy makers and technology advocates approach to provide technology and bring it to fruition, and also the curiosity that comes with learning would lead to higher learning outcomes and also that the syllabi are spiral.

5.5. Appropriateness of the syllabus at learners' level

The learners had no issue to rise on the appropriateness as to them all content is relevant and according to Mtonga, Imasiku, Mulauzi, and Wamundila, (2012) revealed that there was benefit in learning computer studies subject and incorporating ICTs in teaching and learning. The assertion can be married to the conclusion made by the University of Zambia researchers (Chisunka-Mwila, Lamba, Mulauzi and Njobvu, 2011) that introduction of is more appropriate at basic level.

On another hand, the Teachers of Computer Studies subject also attested Senior Education Standards Officer that there is nothing to remove rather add something like Microsoft Access and Introduction to Basic Programming to assist at grade 10-12 level, and also the improvement of computer studies subject books.

Additionally, what makes the syllabus and content appear to be non-appropriate are some of the barriers for example Competence affected by pouching Teachers of computer studies subject. Mambwe (2015) attests that the barriers affecting Computer Studies teaching and learning are several and at some extent can affect the level of appropriate appreciation of the content of the syllabus. Also, books are shallow at both the Junior and Senior Secondary School.

However, Senior Education Standards Officer though different syllabi and level of content if compared to other countries and what is presently obtaining the content and syllabus are appropriate considering there is still a number of needs to address like the department standing alone for healthy growth of the subject. There has to be implementational growth at the level for the country though mostly offering basics.

5.6. Summary

This chapter focus was on interpretation of the findings intrinsically on the lived experiences of computer studies subject learners: A case study of Mutende and Kombaniya secondary schools and triangulation assisted by their subject teachers and the Senior Education Standards Officer particularly in Mansa District of Luapula province. Some among the learners and prior knowledge before the introduction to the subject and their background affected their knowledge and also the others that did not have a background influenced by artificial intelligence devices. Despite their backgrounds the teaching and learning process was revealed to be productive regardless of the various barriers that other researchers have laboured to reveal including the staffing in the subject.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.0. Overview

The previous chapter discussed the findings of the study on the lived experiences learners of computer studies at Mutende and Kombaniya secondary schools of Mansa District of Luapula province. This chapter presents the conclusions and recommendations of the study based on the findings.

6.1. Conclusion

The study revealed that lived experiences of learners of computer studies at Mutende and Kombaniya secondary schools of Mansa District of Luapula province the subject has been confirmed to be extremely beneficial and ought to be compulsory at all levels as it imparted life skills in learners although with challenges revealed around. Prospects of the lived experiences of computer studies subject in secondary schools reveals the progress of the implementation of the revised curriculum and how the learners have benefited, especially how the learners performance marries with their background, present learning environment and consideration of all stakeholders within the classroom and immediate community have impacted them.

The findings were consistent with David A. Kolb (1939) who believed that learning was through the process whereby knowledge is created through the transformation of experience. It showed that has learners were doing/having the experience they were able to review and reflect on the experience as they were able to conclude and learn from the experience and lastly, they were able to plan and try out what they learnt. The above can be merged with Max van Manen who revealed that language reveals being within some historical and cultural contexts, understood by participant and researcher and through language, such as the language of the interview (Langdridge 2007).

From the Focus Group Discussion and observation learners were able show use of knowledge, skills and attitudes in the Computer Studies subject as they were following of commands and general protocol with appropriateness required. Also, that Learners knowledge affects the skills and attitudes required. And that the learners acquired, skills and attitudes were shared among themselves irrespective of their ICT background. Though for the first-timers they had difficulty in breaking into new knowledge, skills and attitudes with thought of others experienced or those who had prior knowledge.

The Senior Education Standards Officer mentioned teaching and learning process to be fast progressing, and the teacher confirmed that Learners feedback hinges on knowledge, skills and attitudes.

Additionally, the application of the software for example in Microsoft Word was the fastest due to it been the common most commands with less complexities, second was PowerPoint and lastly it was Microsoft Excel as the complexity from observation were on the inserting of formulae and the calculations. And from observation it was clear other learners were consulting from among themselves despite the variety of the tasks handed to them respectively.

However, Learners have used common functions from artificial intelligence devices and knowledge, skills and attitudes familiarized them for economic gain for instance starting a business and also improve existing businesses, and in turn boost the Learners confidence and experience in using artificial intelligence devices.

The appropriateness of syllabus and content is based on it making the basic need to use ICTs. The learners deemed the syllabus as fine while the subject teachers had some reservation on some topics that would be beneficial if they would be introduced like basics of programming at junior secondary to help with the senior secondary especially that the syllabi are spiral meaning the lower syllabus affects the higher syllabus.

Also reveals how far the content of the syllabus whether including or excluding some topics depending on the learner involvement and how appropriate the level of content is and also how effective the knowledge, skills and attitudes are.

6.2. Recommendations

The study established that the teachers were of different backgrounds had impact on the learners performance and acquisitions of knowledge therefore the need for more modernization of the teaching methodology.

It was also established that the learners would engage in entrepreneurial skills and attitudes that they would use in their various community settings. There is need for the teaching staff to engage in learners' projects that aims to improve economic strands/activities.

Mansa district schools indicated that teaching and learning materials are not highly information as compared to the Computer Studies subject syllabus. There is need for CDC and Government officials to work together with the subject specialists or consider recommendations from CPD and subject seminar meetings.

Also, that there is need to have an independent Computer Studies subject body, Association and department, that would plan and allocate tasks from specialist counsel.

6.3. Recommendation for future Research work

Study must be conducted on the learners that have reached senior level of Computer Studies subject especially that it is an optional.

Study of the teachers that would be employed that are trained in ICT subject and how learners respond to their Computer Studies subject teachers after their government three-four years training program

Study on why the formulators first don't establish a section independently that would help implement the new policies (compulsoriness of subjects Civic Education/Computer Studies)

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APPENDICES

APPENDIX A: INTERVIEW GUIDE SCHEDULE

THE UNIVERSITY OF ZAMBIA AND ZIMBABWE OPEN UNIVERSITY

DIRECTORETE OF RESEARCH AND GRADUATE STUDIES

Dear Participant(s),

I am a postgraduate student of the University of Zambia and Zimbabwe Open University pursuing a master of education Degree in Educational Management. I am conducting a research entitled **Lived Experiences of Learners of Computer Studies at Mutende and Kombaniya Secondary Schools of Mansa District, Zambia.** The sampling is Purposefully Sampling experts: Education Standard Officer-Mathematics, two (2) computer studies subject teachers and twelve (12) learners in two focus groups. Kindly feel free, open and honest in your responses as all answers you give will be treated confidentially. However, should you feel at any point of the study during the interview that you cannot continue, you are free to withdraw.

Section A (Knowledge, Skills and Attitude Learners have acquired in the subject)

1. What knowledge, skills and attitudes have been acquired by learners in the subject in relation to targeted outcomes of the syllabus?

Section B (How Learners apply knowledge gained in the subject)

2. With the acquired knowledge and the set skills how do the learners apply in the subject?

Section C (Topics in the syllabus that learners find difficult)

3. Which topics in the syllabus do learners find to be difficult?

4. How do you meet the challenge?

Section D (Appropriateness of the syllabus at learners' level)

5. Are the topics/content of the syllabus in the subject appropriate for the level of the learners? Explain

6. What topics would you recommend to be included and/excluded? Justify

APPENDIX B: FOCUS GROUP DISCUSSION GUIDE FOR LEARNERS

I would like to have a discussion with you on the teaching and learning of computer studies at this school. Be rest assured that, there is no right or wrong answer. Please freely share your true feelings and opinions with me on this topic. The discussion will be kept confidential. Please feel free to participate. However, should you feel at any point of the study discussion that you cannot continue you are free to withdraw.

Section A (Knowledge, Skills and Attitude Learners have acquired in the subject)

1. What knowledge, skills and attitudes have been acquired you in the subject in relation to targeted outcomes of the syllabus?

Section B (How Learners apply knowledge gained in the subject)

2. With the acquired knowledge and the set skills how do you apply in the subject?

Section C (Topics in the syllabus that learners find difficult)

3. Which topics in the syllabus do you find to be difficult?

4. How do you meet the challenge?

Section D (Appropriateness of the syllabus at learners' level)

5. Are the topics/content of the syllabus in the subject appropriate for the level of the learners? Explain

6. What topics would you recommend to be included and/excluded? Justify

APPENDIX C: OBSERVATION CHECKLIST

1. Availability of Computer laboratory.

2. Computers available in the school and their working condition.

3. Are the computer lessons scheduled in the block time table?

4. Check the progress schedule.

5. Check learners' books on the topic continuous assessments.

6. Learners application of the skills and knowledge (While computer laboratory on computers)