

A Comparative Study of Secondary School Students' Performance in Commerce and ICT in Zambian Secondary Schools: A case study of selected urban schools of Lusaka district and rural schools of Chongwe District.

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Abstract

This study assesses and compares the performance of students studying Commerce and ICT in their various Departments. The study sought to ascertain the relationship between the performance of students in Commerce and ICT. This was with a view of ensuring better performance in the two subjects. This study also focuses attention on possible ways of improving the performance of the students in the afore-mentioned subjects. It also suggests ways by which their performance in the said subjects could be improved. The study considered some students' results in the said subjects over a period of two years (between 2016 and 2017). The collection of data was by the use of students' results and questionnaire that were administered randomly to a selected sample population of some students. For this study, sixty students were randomly selected in Business Studies Department while fifteen students were purposely selected in Mathematics Department.

Interviews were conducted by the teachers in charge of those subjects with above seven years of experience in teaching these subjects and some observations were also employed as secondary instruments. The data collected were analysed using simple percentages.

Opportunities should be given to teachers for professional training on their subject disciplines, teaching techniques and organizational techniques which could be achieved through workshops, seminars, internet browsing and extensive reading for personal development. The findings show that students performed better in ICT subjects than in Commerce subjects.

Keywords: *students' performance, Commerce, ICT, Business Studies, Mathematics, techniques, focus*

CHAPTER ONE

1.0 Introduction

This chapter gives the background of the study. It begins with an overview of the topic under investigation. Thereafter, the chapter presents the problem under investigation, purpose of the study, the objectives and the research questions. The chapter also provides the significance of the study as well as definition of the terms used in the study.

Commerce a subject which largely deals with trade practices has been gaining grounds as a subject since the beginning globalization. Commerce however, has not grown with equal proportion in the urban and rural schools.

Similarly, ICT which has just been launched, is advancing fast in urban schools as compared to rural schools for obvious reasons. Firstly, schools in urban areas are better equipped to handle such subjects i.e. Commerce and ICT. Secondly, the learners in urban schools are more exposed to technology and trade practices as compared to their colleagues in the rural area. This makes it easy for those in urban areas to develop more interest in the subjects than those in the rural setup. The rural pupil will be intimidated just at the sight of a computer while an urban pupil will rejoice in working with one.

1.1 Historical Background of the Study

Information Communications Technology (ICT) refers to any device or system that allows the storage, retrieval, manipulation,

transmission and receipt of digital information. For example, personal computers, digital television, email, robots. The International Congress on Mathematics Education (ICMI)'s history can be said to have witnessed four ICT revolutions. The first revolution was said to be comprised of films, radio, television and satellite broadcasting, while the second to comprise telecommunications and microcomputers in mathematics instruction. The integration of telecommunications and microelectronic technology in computing was termed a "third revolution" and came to be what is called Information Technology (IT). The current trend in ICT has brought a phenomenon which can be termed a "fourth revolution" in IT. Introducing information and communication technology into educational reform is a major priority of governments worldwide. Instructional tools have recently evolved from basic computers labs to high-tech facilities such as laptops, net books, interactive whiteboards, or even tablet computers. Among U.S. public schools, 58% of public schools have laptops on carts, 73% have interactive whiteboards, and 4% provide handheld computing devices (e.g., Palm OS, Windows CE, Pocket PC, BlackBerry) (Reports reveal increasing availability of high-tech facilities in U.S. public schools. However, the actual distribution of these facilities and passion for their use in the schools differed by districts. Rural schools with high poverty concentrations usually do not

possess adequate technological facilities, ICT skills or knowledge about how to integrate technology into instruction (Gray, Thomas, & Lewis, 2010).

Comparative studies in the performance of pupils in Commerce and ICT and the factors that affect their performance have been carried out in Zambia. Mulubwa (2007) compared the performance of visually impaired and non-visually impaired pupils in the National Examinations of Grade 12 level for five years and the factors that affected their performance. The study revealed that the performance of the visually impaired pupils had been poor in the past five years compared to that of pupils without the visual impairment. It attributed the poor performance of the visually impaired pupils to factors such as, lack of learning/teaching materials and equipment, poor infrastructure in terms of resource rooms and lack of specialist teachers and negative attitude of ordinary teachers towards the visually impaired pupils.

Matafwali (2006) compared the performance of Grade 10 pupils on the nature and prevalence of reading difficulties in rural and urban basic schools in. The study revealed that, the performance of pupils was generally poor with no significant difference between the rural and urban secondary schools. Kalima (2006) also carried out a study in which he compared the performance of Grade 11 pupils on the

prevalence and nature of mathematical difficulties in the rural and urban secondary schools of Lusaka. The study revealed that there was a difference in Commerce difficulties between males and females, though the results were generally poor both in rural secondary schools and urban secondary schools.

This study investigated whether there was any difference in performance between urban and rural secondary school pupils in the Junior Secondary school leaving examinations in basic schools in Chongwe District and established the factors that affected their performance.

Problem statement

Although there are various studies in Zambia on the comparison of performance of pupils in different examinations, in various settings and at different levels and the factors which affect their performance, there is no study which has been carried out in Zambia to compare the performance between urban and rural pupils in in Commerce and ICT in Zambian Secondary Schools. The problem, therefore, is that we do not know whether there is any difference in performance between urban and rural secondary school pupils in the in Commerce and ICT in Zambian and the factors which affect their performance, hence this study.

The major discrepancy is that there is an inconsistency between the provision of Information Communication Technology (ICT)

and its effectiveness in secondary schools especially in rural areas. While the subject is important, there are no teachers, no computers, no building and no management for ICT in some schools leading to poor performance. It is henceforth logically justifiable to carry a study and examine the effectiveness of the subject in question. The study also told whether it is necessary to continue with ICT under the current unfavourable conditions for the subject. There is a wide divide, in percentage, in the results obtained by pupils in ICT and Commerce in rural areas and those in urban areas.

1.2 Purpose of study

The purpose of the study is to compare the performance between urban and rural secondary school pupils in the Commerce and ICT in Zambia and investigate the factors which affect their performance.

1.3 Justification of the study

There is a wide divide in the results obtained by pupils in ICT and Commerce in rural areas and those in urban areas. This study therefore tried to bring out clear information on the factors causing big differences in ICT and Commerce results.

1.4 Research Objective

General objective

- The general objective is to investigate the performance of students in

commerce and ICT in Zambian secondary schools.

Specific objectives

- To find out the cause of student's performance in commerce and ICT in rural and urban schools.
- To assess the effects of lack of equipment's on the performance of students in commerce and ICT in rural and urban schools.
- To ascertain the solution to the performance of students in commerce and ICT in rural and urban schools.

1.5 Research questions

- Is there any difference in performance in Commerce and ICT between the urban and rural students in Zambia's secondary schools?
- Is there any significant difference in terms of technology availability between rural and urban elementary schools?
- Is there any significant difference in terms of students' attitudes, teacher's competence and experiences in technology integration between rural and urban Secondary Schools?

1.6 Significance of the study

The results of this study made the teachers, the administrators and the Parent Teachers' Associations aware of the problems regarding

commerce and ICT subjects in both rural and urban secondary schools for clearance of these problems. The outcome of this study also added to the already existing knowledge concerning the factors that affect the performance of rural and urban secondary school pupils in the named subjects in Zambia. The findings of this study were more valuable to planners and decision makers in the Ministry of General Education for future planning.

The research was worthy conducted because it documented the extent of the problem in the Ministry of Education in relation to Information Communication and Technology. This research provided guidance to the secondary schools on how to improve the provision of the subject and provided a spiral plan that would lead to sustainable development in the provision of ICT. This research allowed researchers to add more and new information to that which already exists hence increasing the chances of the pupils being helped. The obtained information enabled the necessary authorities to take action and implement plans and policies that helped alleviate the problem. In addition, it was beneficial to the local pupils and the public once the improvements take place and recommendations put into perspective. This research was a way of providing information districts in question which also used to tackle the same problems in similar settlements or places with similar ICT problems.

1.7 Delimitation

The study targeted the population confined within the three urban selected secondary schools in Ntandabale ward of Chongwe Constituency and three rural secondary schools in Lusaka district. This is the population that is expected to provide meaningful responses to the research questions at hand. However, a number of officials from both District education board secretary (DEBS) offices were also targeted in this research undertaking, to provide the necessary information needed.

1.8 Definition of terms This section provides definitions of terms as they are used in this study:

DEBS	District education board secretary
ICT	Information Communication Technology
ICME	International Congress on Mathematics Education

Theoretical Frameworks

Based on a view that encompasses internal and external factors affecting technology integration, a model involving the teacher's Will, Skill, and Tool has been developing for several years (Knezek et al., 2000; Knezek, Christensen, & Fluke, 2003; Hancock, Knezek, & Christensen, 2003). The entire model is broad in scope, as it includes student achievement. It is assumed that student achievement is affected by technology integration, which in turn is affected by the

teacher's attitudes and dispositions (Will), abilities (Skill), and access to technology (Tool). The complete model can be referred as the structural WST model, whereas the teacher part of the model can be referred as the WiSTTI model (Will, Skill, and Tool for Teacher Integration).

The belief that a person is born with equal capacity to develop is brought into question when there is a big gap in the academic performance of pupils in ICT and commerce in rural and urban areas. The study ensured to prove that children are born equal but the environment in which they grow determines their performance or achievement.

CHAPTER TWO

2.0 Literature review

2.1 Introduction

This chapter reviews literature related to the topic under study. Kombo and Tromp (2009) state that the main purpose of literature review is to determine what has been done already related to the research problem being studied. Therefore, this chapter serves to review some literary works done by other scholars on a comparative study of secondary school students 'performance in commerce and ICT in Zambians' urban and rural secondary schools. The review will take a broader, global perspective before focusing on the local Zambian scenario, with particular reference to

the selected secondary schools in Livingstone and Kazungula districts. An effective literature review identifies the gaps in the studies quoted. By identifying and highlighting the identified controversies, it helps to indicate what further research needs to be carried out on the identified topics.

2.2 Comparative studies on the performance of pupils in urban and rural schools

There is general perception of the comparative inferiority of rural schools has prevailed. This view implies the existence of rural-urban differences in students' commerce and ICT academic performance. The general perception of rural urban differences extends as well to many other socially desirable outcomes, such as aptitude, intelligence, and aspiration (DeYoung and Lawrence, 1995; Herzog and Pittman, 1995).

The subject of whether real differences in ICT and commerce - educational outcomes exist between rural school students and their peers in urban schools has been a topic of debate among researchers, with particular salient for practitioners in rural areas.

The concern about potential rural-urban differences in education outcomes is not limited to this country, but rather appears to be a global issue. For example, research comparing students from rural and "metropolitan" (urban and suburban) areas on a variety of social,

psychological and educational outcome variables pertaining to commerce and ICT has been conducted in South Africa (Liddell, 1994; Mwamwenda, 1992), Nigeria (Akande, 1990), Australia (Northern Territory Department of Education, Darwin, Australia, 1992), India (Singh and Varma, 1995), and Peru (Stevenson, Chen and Booth, 1990).

Unsurprisingly, like many other concerns in education, the research comparing rural students with their urban counterparts in commerce and ICT subjects in general and in academic achievement in particular, has yielded inconsistent findings (Khattari, Riley and Kane, 1997). While some studies failed to find any statistically significant differences (Alspaugh, 1992; Snyder and West, 1992; Edington and Koehler, 1987; Haller, Monk and Tien, 1993), other studies found that students in metropolitan areas exhibit better performance than their rural counterparts in commerce, and ICT (Coe, Howley and Hughes, 1989a,b; Edington and Koehler, 1987; Greenberg and Teixeira, 1995; Lindberg, Nelson and Nelson, 1985). In other studies, however, students from rural schools were found to have performed better than those from metropolitan areas (Alspaugh, 1992; Alspaugh and Harting, 1995; Haller et al. 1993).

Many Researchers have paralleled rural students with students from urban schools on numerous but main areas of academic achievement, including reading, commerce,

ICT and Social studies. For interpretation, rural students have been shown to have performance comparable to their urban counter parts (Ratekin, 1971), especially for younger students (Liu and Brinlee, 1983).

Lindberg et.al (1985) found that students from small rural schools performed worse than those attending larger schools, and some researchers have concluded that such differences may not be attributable to differences in technology resources (Templeton and Paden, 1991).

For Commerce, some studies have found no differences in Mathematics achievement scores (Alspaugh, 1992) or the higher-order thinking skills presumably required for commerce achievement (Haller et al., 1993).

Others, however, have found differences in ICT achievement among schools of different size (Wilson, 1985).

2.3 Factors that affect the performance of pupils in commerce and ICT.

Another set of studies pointed to student attributes as being more important in influencing student learning outcomes than school attributes. Edington (1979) showed that the most economically disadvantaged students in San Diego in the United States of America exhibited lower scholastic achievement from the onset of their schooling and never caught up. Using test scores for 4th, 8th and 12th grade, students in Massachusetts.

In different settings, different sets of factors may affect schooling outcomes. Evidence from numerous research studies in the developed world have shown that in the right circumstances teachers and schools can become more effective in making children more intelligent (Alspaugh, 1992). The essence of this is that when schools in poor circumstances are properly adjusted they may become effective in enhancing schooling outcomes. Drever (1991) states that in Scotland, for example, effective schools emphasize on high intellectual expectations of teachers, a professional attitude towards school and staff development, the use of rewards rather than punishments, an emphasis on teacher involvement in development. In China, Allan (1996) found that school characteristics significantly improved academic performance. Jaggia and Kelly-Hawke (1994) found that family background and the stability of a community were the main factors affecting student performance in commerce and ICT. The data suggested that higher levels of spending had no consistent or systematic relation with student performance. Using data from schools in seven countries in Florida, Drever (1991) found school libraries to have a measurable effect on student performance achievement. At the elementary and middle school levels, approximately 4 percent of the variance in Texas Assessment of Academic Skills (TAAS) scores was attributed to school libraries, while

the figure more than doubled at school level, reaching 8.2 percent. Library variables outweighed the effects of other school variables including computers per student and teacher experience.

Instructional resources which are educational inputs are of vital importance to the teaching of any subject in the school curriculum. Wales (1975) in the United States of America was of the opinion that the use of instructional resources would make discovered facts glued firmly to the memory of students. Savory (1958) in his study of instructional materials in Scotland, claimed that a well-planned use of visual aids in lessons should do much to banish apathy, supplementing adequacy of books as well as aroused students' interest by giving them something practical to see and do and at the same time helped to train them to think things out themselves. He further suggested a catalogue of useful visual aids that were good for teaching

History, pictures, post cards, diagrams, maps, filmstrips and models. He says that the selection of materials which are related to the basic content of a course or a lesson helped in depth understanding of commerce and ICT lessons by the students in that they made the lesson attractive to them, thereby arresting their attention and thus, motivating them to learn. He suggests that a catalogue of aids which can be used to teach history, he advocates the use of pictures which helps children in grounding their

thoughts and feelings. He says the pictures are used as alternatives to real objects where it was impossible to show students the real objects, and they serve effectively in an imagine activity. In order to raise the quality of education, its efficiency and productivity, better learning materials was needed.

Copper (1989) in Germany found out that homework that was gradually increased every year, enhanced academic achievement and students scored better on class tests in commerce. Beattie (1987) noted that studies had brought out certain rules regarding the amount of homework that was to be given to students of particular ages. Homework manifested only if it was given in right amounts and taken in the right spirit. It was not good to burden children with home assignments and expected them to do well in their studies. Homework should be proportionate to their age and mental ability.

Berger (1991) in Finland pointed out that in the 50 studies, time students reported spending on homework was correlated with their achievement. 43 of the 50 studies showed that students who did more homework achieved more, only 7 studies showed the opposite.

In Asia, Beattie (1987) claimed that homework was found to be correlated to academic performance. He stated that homework bore a positive relationship with learning outcomes when it was relevant to learning objectives, assigned regularly in reasonable amounts, well

explained, motivational and collected and reviewed during class time and used as an occasion for feedback to students.

A study by UNESCO (<http://www.unesco.org>) compared the performance of pupils in the Subjects of commerce and ICT in the secondary school education in western province of in Kenya. The study revealed that the poor performance of pupils in western province were generally poor. The poor performance was attributed to factors such as streaming effect, large class size, poor school facilities, the lack of preparation or homework, the lack of sound efficient leadership in school administration, the inadequate time allocated to teaching/learning and teacher characteristics.

In Madagascar, several studies revealed that leadership skills of a school principal and the degree of community participation were the major influence on pupils' educational achievement. Teaching materials used teachers' skills and attitudes together with schools' facilities and equipment were found to be important albeit secondary to the first two (Ramandria, 1995). In this system, the presence of materials and teachers demand principals' management skills to maximize outcomes. These studies showed that with proper methodologies, some factors in a multilevel model such as a school can be isolated to see the impact on performance.

In Nigeria, a study in the secondary schools in 1987 by Pennyquick (1997) found that school

facilities did not seem to be related to achievement. He summarized research evidence from developing countries and emphasized that more evidence is needed to strengthen the case that school facilities and pupil home characteristics influence pupil achievement or performance in class pertaining to Commerce and ICT. In Nigeria, Owoye (2000) in his study revealed that school facilities were found to be the most potent determinant of academic achievement.

In contrast, using multilevel modeling techniques, Kadzamira (1982) found that prior achievement, age and social background were the factors that affected performance in secondary schools in Malawi. In the same country, SACMEQ studies in 2001 and 2004, (Milner et al.2001; Kadzamira (2004) investigated pupil, teacher and school factors and how they related to the achievement of minimum levels of literacy and as politics, culture, economic prosperity, ICT and global trends set the standards. The main findings were that the majority of pupils in Malawi primary schools were performing below minimum and desirable levels of reading and Mathematical skills,

In Botswana, Mwamwenda and Mwamwenda (1987) linked the availability of classrooms, desks and book, computers to be significantly better the performance in commerce and ICT subjects. This was in support to the contention

that school facilities are integral to academic achievement.

Owoye (2000) carried out a study in which he examined the factors that affected poor quality of teaching of ICT in public secondary schools in Nigeria. The main findings were that; teachers did not frequently use modern instructional technologies and a variety of teaching techniques in their ICT lesson were lacking. It also revealed that students learnt under harsh environment which often was rowdy and congested.

In a study by the Ghana National Association of Teachers (1996) it was revealed that the poor performance of the pupils at the basic level of education in commerce and ICT was attributed to factors such as lack of access to basic education to all citizens, quality of education in many schools was not sufficiently high to produce the level of literacy and other skills required for social and economic participation in society. In the same study, it was also found that the problem of low performance was due to partly unavailability of text books, computers and other teaching /learning materials, poor teacher quality and motivation and that the pupils could not cope with large number of subjects for which they could pass the exam.

Ojoawo (1989) in Nigeria found out that the use of audio-visual materials, as an integral part of teaching in learning situations helped to bring about permanent and meaningful experiences.

He said that they provided hand experience where possible or vicarious one where only that is feasible. Long distances to schools affected attendance in rural and urban areas. Kelly (1999) stated that by the time pupils arrived at schools, there were too tired for concentrated school work, girls were less able than boys to negotiate physical hazards, like swollen rivers, or dangerous escarpment paths which they encountered on the way to school. In Nigeria, Fatunwa (1969) found that school home distance affected students' academic performance in commerce and ICT.

Ukefe (1970) and Fatunwa (1969) in Nigeria have written extensively on the prime importance of teachers to the educational development of any nation be it simple, complex, developed or developing. From the writings of these educators, one can infer that whatever facilities are available, whatever content is taught, whichever environment the school is situated and whatever kind of pupils are given to teach, the important and vital role of the teacher cannot be over-emphasized.

Assuming the necessary facilities are provided for, the environment is conducive to learning, the curriculum satisfies the needs of the students and the students have interest in learning, learning cannot take place without the presence of the teacher. Teachers represent the proportion of the input of an educational system. Fagbamiye (1977) noted that schools with stable, experienced and qualified teachers

usually have better school facilities in terms of school buildings, books and equipment than those schools which have difficulty in attracting experienced and qualified staff.

In Zambia, a study by Mulubwa (2007) compared the performance of rural and urban secondary school pupils in Commerce and ICT in Zambia of Grade 10 level for the past five years and the factors that affected their performance. Firstly, it was revealed that the performance of the rural pupils had been poor in the past five years compared to that of the pupils in urban. Secondly, it was also revealed that the poor performance of the pupils was attributed to factors such as lack of learning/teaching materials and equipment, poor infrastructure in terms of resource rooms, lack of specialist teachers in ICT especially in rural secondary schools, and negative attitude of ordinary teachers to the pupils in rural

According to Global perspective students perform better in ICT compared to commerce because ICT is been seeing enhancing teaching and learning process The field of education has been affected by ICTs, which have undoubtedly affected teaching, learning and research (Yusuf, 2005). ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as

strengthening teaching and helping schools change (Davis and Tearle, 1999; Lemke and Coughlin, 1998; cited by Yusuf, 2005). In a rapidly changing world, basic education is essential for an individual be able to access and apply information. Such ability must find include ICTs in the global village.

According to Cabero (2001), "the flexibilization time space accounted for by the integration of ICT into teaching and learning processes contributes to increase the interaction and reception of information. Such possibilities suggest changes in the communication models and the teaching and learning methods used by teachers, giving way to new scenarios which favor both individual and collaborative learning". ICT is also enhancing the quality and accessibility of education compared to commerce ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to improve the quality of learning. In concert with geographical flexibility, technology facilitated educational programs also remove many of the temporal constraints that face learners with special needs (Moore & Kearsley, 1996). Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace.

According to regional perspective Provision of quality education is a priority that every country will aspire to include amongst the national goals of education. Raising the standard of education is one of Botswana's national goals (Republic of Botswana, 1994). According Kimani, Kara & Njagi (2013) the purpose of education is to equip the citizenry with values, skills and knowledge to reshape their society and eliminate inequality. This is because education helps an individual develop his/her capabilities, attitudes and behavior that is acceptable to the society. The benefits of having quality education is that it is able to adapt to the changing needs of the country as the world changes and spearhead the development of human resource and the country's economy.

BOCODOL was created by an Act of Parliament in December 1998. Its creation marked a milestone in the development of Education for Botswana and a significant step towards realizing Botswana's Vision 2016, which emphasizes the elimination of poverty through the provision of knowledge and skills. BOCODOL was formed to improve access to learning opportunities on a nationwide scale for the out of school young adults. Learning is through specially designed study materials, which use a combination of different types of media, methods and communication technologies (using the Open and Distance Learning Methodology), rather than through direct face-to-face mode of instruction as in

conventional schools. A result of large information for development program supported survey of the information and communication technology in education in Africa provides overview of current activities and issues related to ICT use in education in the country. Botswana is a small, dynamic country. According to Malawian findings result of large information for development program supported survey of the information and communication technology in education in Africa provides overview of current activities and issues related to ICT use in education in the country. A high impoverished country. The Zambian education system has been well endowed with public resources and enjoyed a strong commitment from government. This has enabled the education to make good progress. Public education financing has gradually shifted toward the upper levels of education. The education system continues to face challenges to improve the efficiency and effectiveness of resources used in delivery of ICT and commerce courses. The solution to improve the performance of students in secondary schools Zambia to make sure that it provides more equipment's in schools and also train more teachers who can qualify to delivery better information in ICT and commerce.

2.4 Performance in Commerce and ICT between the urban and rural students in secondary schools.

Lacking experienced and skilled teachers and technical training have been an ongoing problem for rural schools (Herselman, 2003). With regard to students, research show that students from rural or migrant schools score lower on all the Internet inequality indicators (digital access, autonomy of use, social support, Internet use and self-efficacy) and are therefore more disadvantaged in Internet usage status than their urban peers. Taking China as an example, there are 70,000 schools with computers and more than 10 million students who have mastered basic computer skills, but most of these schools and students are in cities, not in rural areas (Zhang, 2005). Researchers have also argued that students in low-income areas often use computers for repetitive activities, whereas students in high-income areas often use technology for higher-order thinking, problem solving, and other intellectually challenging activities thereby exhibiting high performance (Songer, Lee, & Kam, 2002).

2.5 Technology availability between rural and urban secondary schools.

The rural-urban infrastructure disparities indicate that urban areas can boast electricity and telecommunications capabilities, but rural areas remain unconnected and hence disadvantaged (Gulati, 2008). For example, in developing countries such as South Africa, research indicates that rural schools lack school

telephone facilities, computer hardware and software (Herselman, 2003). The lack of ready access to technology is a key barrier to technology integration for developing areas. Recent studies have shown that the access to hardware in schools has drastically improved internationally, but it needs more empirical evidence to understand if infrastructure is still a key factor causing the digital divide (Grime, 2000).

2.6 Students' and teacher's attitudes, competence and experiences in technology integration between rural and urban Secondary Schools

This study used the Will Skill Tool model as its framework to examine digital divide. The Will Skill Tool model is a well-established theoretical framework that elucidates the conditions under which teachers are most likely to employ information and communication technologies in the classroom (Knezek, Christensen, Hancock & Shoho, 2000). Previous studies have shown that these three factors (will, skill, and tool) explain a very high degree of variance in the frequency of classroom ICT use (Petko, 2012). Will refer to teachers' or students' attitudes about technology integration. Huang and Liaw (2005) stated that among all factors considered to influence the successful integration of computers in the classroom, the attitude towards computers is a key factor. Skill (Competence) is usually defined as having the ability to perform a specific task. It is also indicated with the term's computer performance, computer ability, or computer achievement (Agyei & Voogt, 2011). Tools refer to computer access level, usage frequency, computer ownership and amount and breadth of time in the use of computers as indicators of an individual's level of technology use (Gurcan-Namlu,

2003). While examining the digital divide problem using the Will Skill Tool model, rural and urban schools have shown different levels in almost every aspect. In terms of technology access, rural schools do not always have access to the same level of funding for educational technology as urban schools, which can limit the opportunity students have for to use computers.

With regard to teachers, Clark's study (2000) shows that urban teachers in the U.S. have positive reactions towards technology integration. The findings include three points: 1) urban teachers feel confident about their ability to use technology; 2) urban teachers believe that technology is an integral part of their classroom; and 3) urban teachers want more software and equipment in their classrooms. However, research indicates that rural schools do not have teachers with the same qualifications and confidence levels in technology integration as urban schools do. Lacking experienced and skilled teachers and technical training have been an ongoing problem for rural schools (Herselman, 2003). With regard to students, research show that students from rural or migrant schools score lower on all the Internet inequality indicators (digital access, autonomy of use, social support, Internet use and self-efficacy) and are therefore more disadvantaged in Internet usage status than their urban peers.

2.7 Present scenario in Zambian context

In present scenario, condition of rural education is still very poor. In some villages, there are very few Government schools; children have to

travel far away distances to avail these facilities and most schools in these locations do not provide computer education.

2.7.1 Problems Faced in Rural Education in Zambia

Teachers of rural schools in villages and small towns receive low income so there is a possibility that teachers give less attention to children. Most of the schools do not have proper infrastructure. So, they do not get most of the facilities such as computer education, sports education and extra-curricular activities. There are no proper transport facilities so children do not like to travel miles to come to school. There is no excess to supplemental education.

2.7.2 Need based ICT Education in Rural Areas

Due to various developmental activities in education department, rural schools have improving its infrastructure facilities. But the development is not uniformly in all rural areas; still many areas are neglected from even basic infrastructure facilities. Though, governments are providing ICT facilities to rural schools. Many of them are not working properly. The reasons such as, lack of accessibilities of the facilities by the beneficiaries, beyond the level knowledge of users and not full fill their needs or beyond their level of needs. Thus, whenever implement the ICTs related programmes in the

rural areas, should be assess local conditions and priorities needs of rural students. The assessment of needs should be following the methods of dialogue, survey and discussion with beneficiaries in rural areas. First, they have to understand the real benefits of the programme then only it will sustain in long term and perform effectively in rural areas. The field research suggests that there is a huge untapped demand for computing in rural environments. However current solutions are not tailored for these markets, so the hardware and software industry will have to innovate and come up with appropriate solutions. Educational programs for the rural areas cannot by themselves reach out to all the communities under consideration. There has to be an existing or proposed infrastructure that would enable these programs to be conveyed (MSTVTEE, 2012).

According to Times of Zambia: forward with the nation, (Challenges of ICT in community schools) published on June 4 2015 by Davies M. Chanda. The new curriculum is among other innovation that have been introduced due to the new areas of knowledge and skills such as performing, arts design as well as information and communication technology (ICT). With these changes, it means teaching of ICTs and computer studies is now compulsory be it in the community, Government or private schools. But the big question which remains unanswered after the implementation of the new curriculum

is what measures has the Ministry put in place to ensure that they have successful instructive strategies of utilising ICTs for teaching and learning? While the introduction of ICTs is welcome and being taught most schools, the teaching of ICT still remains a daunting assignment in the rural schools and community schools. This is because, most rural and community schools' countries wide have no infrastructure or enough equipment to use for subjects like ICT's and computer studies. And yet pupils in these disadvantaged schools are required to write subjects like ICTs and computer studies. Burma primary School Head Teacher Ms Angela Mukuma says the implementation of the new revised curriculum was implemented too early before teachers were trained for subjects like ICT as well as the procurement of the equipment (Times of Zambia;2015).

2.8 Summary of literature review

In different countries, different sets of studies have been carried out to compare the performance of urban school pupils and rural school pupils. For quite some time, a general perception of the comparative inferiority of rural schools has prevailed. This view implies the existence of rural –urban differences in students' ICT and commerce academic performance. The general perception of rural – urban differences extended as well to many other socially desirable outcomes, such as aptitude, intelligence and aspiration in the two

sated subjects. Because rural-urban differences in cultural, economic and political conditions can differ drastically from one country to another, findings from a study conducted in one country are not necessarily generalized to another.

In the industrialized world where school systems are well developed, there are so many external and internal players who influence what goes on in classroom. There are also so many different views on what constitutes school outcomes. The factors that come into play to influence school outcomes are thus connected in complex way and it is not easy to pinpoint one particular aspect or set of aspects of schooling which contributes to schooling outcomes. But when schools have similar conditions of resourcing, it is possible to manipulate and investigate the impact of other factors on outcomes

Chapter three

3.0 Research Methodology

3.1 Introduction

This chapter presents a description of the methods that are to be applied in carrying out this research. The chapter will serve to describe the research design, research site, population, sampling techniques, research instruments, data collection methods as well as the type of analysis technique to be used (Creswell, 2002).

3.2 The Research Design

According to McMillan and Schumacher (1997:162), the design describes the procedures for conducting the study, including when, from whom, and under what conditions the data will be obtained. In completing this study, a quantitative approach was undertaken, which is a survey in the form of questionnaire. The researchers chose to undertake a quantitative study because the statistical data is more appropriate to be used in measuring the use of ICT among students compared to qualitative study. The respondents of the study are secondary school students from three rural schools located in Ntandabale ward of Chongwe Constituency and three urban schools located in Lusaka.

The study used mostly the quantitative research design. Quantitative research design is an excellent way of finalizing results and proving or disproving a hypothesis. After a statistical analysis of the results, a comprehensive answer is reached and the results can be legitimately discussed and published. Quantitative research design filters out external factors and so the results gained can be seen as real and unbiased.

3.2 The Research Population

The target population composed of Headmasters (School Managers), Teachers, pupils and officials from the two-district board secretary office in the selected secondary schools of Lusaka District in Lusaka Province.

Population can also refer to an entire group of persons or elements that have at least one or similar thing in common which the researcher used to determine characteristics. A population is a group of individuals, objects or items from which samples are taken for measurement. Population also refers to the larger group from which the sample was taken. The target population of the study consisted of all head teachers, teachers of commerce and ICT, PTA chairpersons and rural and urban secondary school pupils and in Zambia.

3.3 Sample strategies

According (Ngoma, 2006:35), a sample is a portion, piece, or segment that is representative of a whole.

The sample for this study drawn from ten (10) government secondary schools (5 rural and 5 urban). Consequently, the sample size for this study consisted of 140 respondents. It consisted of Grade 10 pupils, who were selected from the ten (10) secondary schools and further broken down into 50 from the 5 urban Secondary schools and 50 from the rural Secondary schools. The 100 pupils was further broken into hundreds; (50) from the urban basic schools and another hundred (50) which be divided further into basic schools consisting of 25 girls and 25 boys from both the urban and rural basic schools. In the study also 10 head teachers of the participating schools were included, 20 subject teachers i.e. 10 for commerce and 10

ICT and 10 PTA secretaries selected equally from all the participating schools. Lastly, 5 officers from the DEBS were also taken aboard in our study; the District Education Board Secretary (DEBS), District Education Standards Officer (DESO), Education Standards Officer-General Inspection (ESO- GI), Education Standard Officer- Open and Distance Learning (ESO-ODL) and District Statistician officer (DSTATO)

Furthermore, our sample consisted of (100) Grade 10 pupils whose ages ranged from (13) thirteen years to (20 years).

Table 1. Simple Random probability Sampled pupils by gender

CATEGORIES SCHOOL	NO. BOYS	NO. GIRLS	TOTALS
Urban School	25	25	50
Rural Schools	25	25	50
	50	50	100

Table 2. Purposely selected Head teachers, subject teachers and PTA Chairpersons

CATEGORIES TEACHERS	URBAN SCHOOLS	RURAL SCHOOLS	TOTALS
Head teachers	05	05	10
Teachers of commerce	05	05	10
Teachers of ICT	05	05	10

PTA Chairpersons	05	05	10
	20	20	40

Table 3. District Education officers

S/N	OFFICERS	NO.
01	District Education Board Secretary	01
02	District Education Standards Officer	01
03	Education Standards Officer-General Inspection	01
04	Education Standards Officer - Open Distance Learning	01
05	District Statistician officer	01

Table 1: Age distribution of Grade 10 pupils

Age of respondents	Frequency	Percentage %	Total
13	6	6.0	6
14	23	23.0	23
15	22	22.0	22
16	26	26.0	26
17	11	11.0	11
18	9	9.0	9
19	1	1.0	1
20	2	2.0	2
Total	100	100.0	100

3.4 Data Collection

Secondary data for the research was obtained through the use of sources such as; the public documents such as journals, past researches and the internet. Primary data was collected from the field using three sets of survey questionnaires. The three sets of questionnaires were administered to three categories of respondents in secondary schools of Lusaka and Ntandabale ward of Chongwe Constituency.

3.5 Research Instruments

In Quantitative research (survey research); interviews are more structured than in Qualitative research. The data collection instruments used in this phase of the study was a set of survey questionnaires for the respondents (Headmasters and Teachers and grade pupils) developed by the researcher. The research also carried out personal interviews informally as a way of collecting information for the research (Neumann & Robson, 2004).

3.6 Data Analysis

Data that were collected was systematically entered on Microsoft data excel sheet and later analyzed using the statistical package (STATA) a software programme which interpreted the quantitative data into tables, frequencies and graphs.

3.6 Ethical Considerations

Observing ethical standards during the research process is key in the provision of a pleasant atmosphere required for participants to answer

questions with free and open minds. This approach eliminates threats from their psychological wellbeing. To facilitate smooth collection of data as per requirement in research, permission to conduct this study was sought from relevant respondents. The researcher explained to the respondents the aim of the research to all the participants and the need for their involvement before the commencement of the interviews. Participants were assured that the information obtained would be used solely for the purpose of research. The participants were also assured of high confidentiality to the information they will provide. An aspect of confidentiality in research raises confidence in the participants and increases their level of participation (Saunders & Thornhill, 2012).

3.7 Summary

Finding of this study demonstrated the performance of the Grade 10 secondary school pupils in both rural and urban areas of Zambia for a period of past five years from (2012-2017) is generally poor with no significance difference between the rural and the urban Grade 10 school pupils in secondary schools of Zambia.

The poor performance in ICT and commerce between the urban Grade 10 school pupils and the rural Grade 10 school pupils can be attributed to a number of reasons. Firstly, the attitude of the Grade 10 school pupils towards

school in urban and rural basic schools leaves much to be desired.

The District Education Officer's office contributes to the poor performance of the secondary school pupils in the rural basic schools in ICT especially for the past five years because of lack of supervision of their teacher.

The District Standard Officers monitored the rural secondary schools once or twice in a year hence making the lazy teachers to loiter around instead of working.

One of the most vital contributions of ICT in the field of education is- Easy Access to Learning. With the help of ICT, students can now browse through e-books, sample examination papers, previous year papers etc. and can also have an easy access to resource persons, mentors, experts, researchers, professionals, and peers-all over the world. If the learners are not using computers, they may not be able to access the past papers online which will help them improve performance.

CHAPTER 4

RESEARCH FINDINGS

4.1 Introduction

The aim of the research project findings is to report the information extracted from the data that was gathered during the conduct of the research project. The findings are a way of informing the world about what was done, what has been discovered and what conclusions the researcher has drawn from the findings. The

findings are written in academic style, and formal language. The purpose of the study is to compare the performance between urban and rural secondary school pupils in the Commerce and ICT in Zambia and investigate the factors which affect their performance.

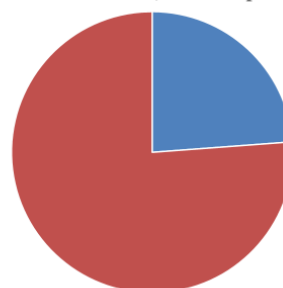
4.2 Characteristics of the Respondents

The study sample comprised 100 participants. The study sample comprised 50 participants. These were 40 teachers and 10 pupils translating by percentage into 80% and 20% teachers and pupils respectively, from the various schools in Ntandabale Ward. These were found to be ideal for this study by virtue of being in the key areas of the interest of study. The respondents were willing to provide data to the researcher though a number were not willing to disclose their personal details. The respondents were willing to provide data to the researcher though a number were not willing to disclose their personal details.

4.2.1 Participants pie chart. Source: Findings Power Point Slide No. 7

CHARACTERISTICS OF THE RESPONDENTS

80% Teacher, 20% Pupils



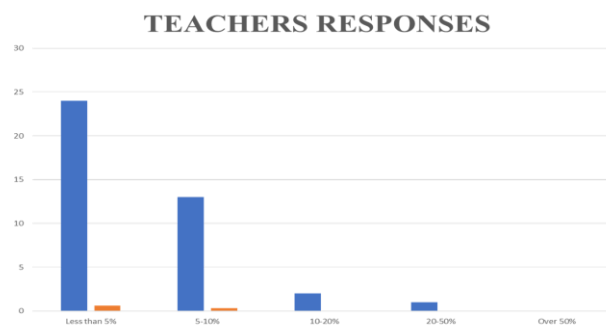
In these research findings, the researcher will analyse two sections of the data collected with good responses; complete and most accurate. One from the teachers' questionnaire, another from the pupil's questionnaire. These being the list of indicators given by the university in this requirement. It is upon these indicators that the researcher's presentation will be based.

4.3 Section 1 – Teacher' J1. performance in Commerce and ICT

This section will analyse responses from the Teacher' questionnaires on the performance in Commerce and ICT. The first part (J1) of the analysis looks at the average, percentage of pupils that performance in Commerce and ICT on a yearly basis. The options available in this part of the questionnaire were; less than 5%, 5 - 10%, 10 - 20%, 20 - 50%, and over 50%. These were numbered 1,2,3,4, and 5 respectively. A total of 40 respondents took part in this survey. The responses from the respondents indicated that 60% stated that they stood at less than 5%, 32.5% stated that they lie between 5 – 10%, 5% feel they are between 10 – 20%, 2.5% put it at 20 – 50% and there were no respondents at over 50%.

4.3.1 Responses, Source: Findings Power Point Slide No. 9.

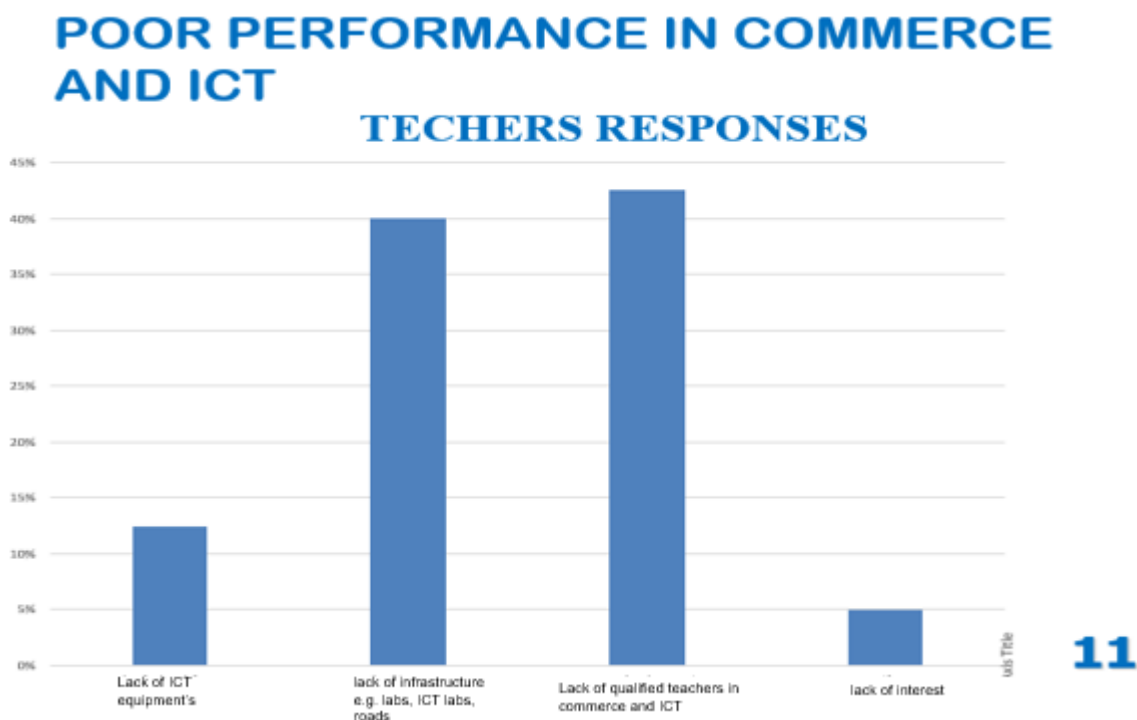
Performance in Commerce and ICT.



9

The second part of the analysis on student's performance in Commerce and ICT (J2) analyses what the major causes of poor performance in Commerce and ICT are. The options available were; Lack of ICT equipment's, lack of infrastructure e.g. labs, ICT labs, roads, Lack of qualified teachers in commerce and ICT. These were numbered 1, 2, 3 and 4 respectively. 12.5% of the respondents stated that the cause was as a result of lack of qualified teachers and Lack of ICT equipment's, 40% felt the cause was lack of interest on the part of the pupils, 42.5% attributed this to poor performance and 5% cited other causes such as shifting and relocation.

4.3.2 Responses, Source: Findings Power Point Slide No. 11.



4.4 Section 2 - Pupils: D. Accessibility of Education

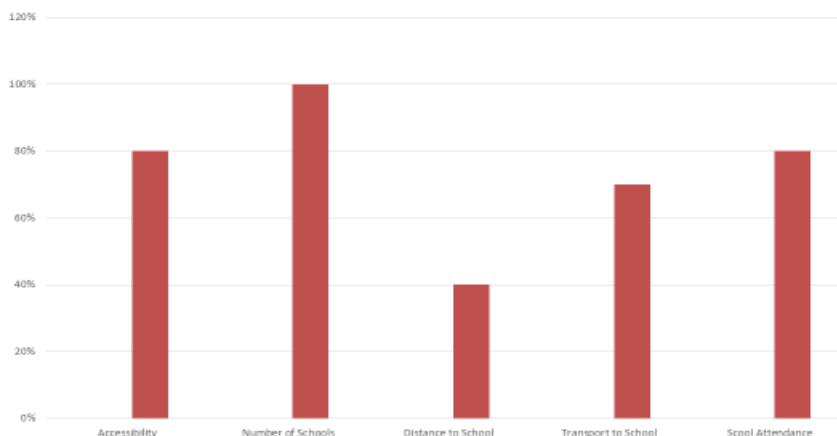
This section analyses the responses from the pupils' questionnaire on accessibility of education. The analysis was sub divided into 5 sections marked D1, D2, D3, D4, and D5 to look at accessibility of education (schools), sufficiency of the number of schools in their areas, how far schools are (distance), the mode of transport used to get to school and how often they attend school, respectively.

A total of 10 respondents'' took part in this survey. The responses from these respondents revealed that accessibility was rated at accessible, with 80% responses. In terms of

sufficiency in terms of the number schools in the area, all the respondents' felt that the number of schools in their areas were insufficient, with 100% responses stating so. With regard to distance to school, the score indicated that the schools were very far from the pupils' homes, with responses at 40% affirming so. The most common mode of transport was found to be walking, which attracted 70% of the responses. The frequency in terms of attending school was overall rated at very often and scored 80% of the responses

4.4.1 Responses, Source: Findings Power Point Slide No. 11.

PUPILS RESPONSES TO ACCESSIBILITY OF EDUCATION



4.5 Findings

The options available were; Lack of ICT equipment's, lack of infrastructure e.g. labs, ICT labs, roads, Lack of qualified teachers in commerce and ICT. These were numbered 1, 2, 3 and 4 respectively. 12.5% of the respondents stated that the cause was as a result of lack of qualified teachers and Lack of ICT equipment's, 40% felt the cause was lack of interest on the part of the pupils, 42.5% attributed this to poor performance and 5% cited other causes such as shifting and relocation. Arising from the teachers' responses, the researcher deduces that on average, less than 5% of pupils in the schools of Ntandabale Ward poor performance every year. Further, the reasons for poor performance range from Lack of ICT equipment's, lack of

infrastructure e.g. labs, ICT labs, roads, Lack of qualified teachers in commerce and ICT and incidents of shifting and relocation on the part of the pupils. However, the biggest contributing factor in this regard is of lack of qualified teachers and Lack of ICT equipment's in which the responses stood at 42.5% but very close to lack of interest that had 40% responses. With regard to the pupils' responses aforesaid, the researcher infers that the pupils of Ntandabale ward feel they have sufficient number of schools in their area. However, many of them feel the schools are very far or too distant from their homes. The majority of them, whose response stood at 70% have to walk to school. Despite this they often attend school.

CHAPTER 5 RESEARCH DISCUSSION

Discussion

The researcher has considered the recommendations based on the research objectives in relation to the findings after data analysis. The researcher in this regard, is of the view of that the objective of the research which is to analyse the education system in Zambia by way of under taking a case study in Ntandabale ward of Chongwe Constituency of Chongwe District in Lusaka Province was achieved. The achievement of the objective of this study was possible in that an insight of the various factors was gained, through the stipulated procedures and adherence to the professional dictates of the conduct of this project as stated and guided.

The researcher faced a number of limitations. Notable among them is the limit on the amount and type of data to be collected owing to inadequate resources, time on the part of both the researcher and the respondents. Distance between the respondents, the ward and the researcher's area of habitation was another challenge. The researcher is based in Lusaka town, Makeni area which is 35km away from the ward where the study was conducted. This therefore involved distances in excess of 70km to route to and from and then within the ward which is equally very wide. The use of own resources is another challenge. In addition, this study was restricted to the population of Ntandabale and which represents a very small population of the nation. The sample size in

this instance could have been more representative but it was expressly given in the requirement hence fixed. Bias and time were other aspects inherent in the challenges. Time was overcome by increasing on working hours for this study. The aspect of inadequate resources was overcome by planning movement's way ahead to avoid unnecessary movements due to the distances involved. This equally addressed the other distance related concerns. The sample size was as stated in the project and bias was tackled by being objective throughout the study.

CHAPTER 6 CONCLUSIONS Study Conclusions

The aforesaid notwithstanding and arising from the analysis herein, the researchers here states that the education system in Zambia has developed over time and is tasked to provide a vision and strategies in modern education. Clearly there needs to be policy analysis and change that can address the issues of school drop outs and accessibility to education. The concerns in these areas resolve around issues of improving education services that should be made available to the children and youth. This is in terms of access, quality, equity and participation as enshrined in the government policy, documents with the quest to achieve the education for all goals, and realisation of the

Zambia 2030 vision of becoming a prosperous middle-income country.

The study was also to demonstrate that several factors have generally been identified as causes of poor academic performance of the secondary school pupils in Zambia. Factors such as lack of learning and teaching

Materials (Books, and computers), lack of qualified teachers, shortage of teachers, long distances to and from school, lack of library facilities and lack of homework and all of these have been found to cause poor academic performance.

Therefore, the performance of the pupils cannot have improved within the urban and rural secondary schools with some of the issues that have been highlighted. The Ministry of education needs to take these findings seriously to address the problems above.

The collection of information is a vital component in research. This is because it is through the collected information that major research findings are made, recommendations offered and the way forward are formulated. A researcher should therefore ensure the relevant steps and adhered to in the data collection. Efforts should also be made to ensure the validity and reliability of the data collection exercise.

Therefore, the research on the comparative study of secondary school students' performance in Commerce and ICT in Zambia

Secondary Schools a focus on urban and rural areas was causative. This is because ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers.

Recommendations of the Research

This section of the report considers the recommendations based on the research objectives in relation to the findings after data analysis. The recommendations are as follows:

4.6.1 Government must devise measures to further purchase ICT equipment's, and build infrastructure e.g. labs, ICT labs, roads.

4.6.2 Government must conduct research to formulate policies that will tackle major causes of poor performance arising from, Lack of qualified teachers in commerce and ICT and other causes such as shifting and relocation.

4.6.3 The existing measures in place regarding accessibility must be revealed reviewed, as a matter of urgency in the sense that accessibility of education by many pupils is still a challenge owing to insufficient schools in many areas and contrary to the mission statement of the ministry of General Education.

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REFERENCES

- [1] Agyei, D.D., & Voogt, J.M. (2011). Exploring the potential of the will, skill, tool model in Ghana: Predicting prospective and practicing teachers' use of technology. *Computers and Education*, 56, 91-100. <http://dx.doi.org/10.1016/j.compedu.2017.08.017>
- [2] Christensen, R. (2002). Effects of technology integration education on the attitudes of teachers and students. *Journal of Research on Technology in Education*, 34(4), 411-433.
- [3] Clark, K. D. (2000). Urban middle school teachers' use of instructional technology. *Journal of Research on Computing in Education*, 33(2), 178-193
- [4] Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative*. Prentice Hall.
- [5] Gray, L., Thomas, N., & Lewis, L. (2010). *Educational Technology in U.S. Public Schools: Fall 2008 (NCES2010-034)* U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- [6] Grime. S. (2000). Rural areas in the information society: diminishing distance or increasing learning capacity?
- [7] *Journal of Rural Studies*, 16, 13-24. [http://dx.doi.org/10.1016/S0743-0167\(99\)00027-3](http://dx.doi.org/10.1016/S0743-0167(99)00027-3)
- [8] Gulati, S. (2008). Technology-enhanced learning in developing nations: a review. *International Review of Research in Open and Distance Learning*, 9(1), 1-16.
- [9] Gurcan-Namlu, A., & Ceyhan, E. (2003). Computer anxiety: multidimensional analysis on teacher candidates. *Educational Sciences: Theory and Practice*, 3(2), 401-432.
- [10] Herselman, M. E. (2003). ICT in Rural Areas in South Africa: Various Case Studies. *Proceedings of Informing Science*, June 2003, 945-955.
- [11] Huang, H.M., & Liaw, S.S. (2005). Exploring users' attitudes and intentions toward the web as a survey tool. *Computers in Human Behavior*, 21(5), 729-743. <http://dx.doi.org/10.1016/j.chb.2004.02.020>
- [12] Knezek, G., Christensen, R., Hancock, R., & Shoho, A. (2000, February). Toward a structural model of technology integration. Paper presented to the Annual Hawaii Educational Research Association, Honolulu, Hawaii.
- [13] Kombo, D.K. and Tromp, D.L.A (2009). *Proposal and Thesis Writing: An Introduction*. Nairobi: Pauline Publication Africa. Ministry of Science, Technology, Vocational Training and Early Education (MSTVTEE) (2012). *Junior Secondary School Course: Information and*

Communication Technology Syllabus (Grades 8 and 9), Lusaka: Curriculum Development Centre Neuman, W. L., & Robson, K. (2004). Basics of social research. Pearson.

[14] Petko, D., 2012. Teachers' pedagogical beliefs and their use of digital media in classrooms: Sharpening the focus of the 'will, skill, tool' model and integrating teachers' constructivist orientations. *Computers & Education* 58, 1351-1359.

[15] Saunders, M., Lewis, P. & Thornhill, A. (2012) "Research Methods for Business Students" 6th edition, Pearson Education Limited.

[16] Zhang, Q. (2005). The provision of information services to rural China: A brief overview, INASP Newsletter No. 28, March 2005.

[17] Adepoju, T.L (2002) "**Locational Factors as Correlates of Private cost Academic Performance of Secondary School Students, School in Oyo State Nigeria.**" Doctoral Dissertation, University of Ibadan, Nigeria.

[18] Allan, G. (1996) **Kinship and Friendship in Modern Britain.** Oxford: Oxford University Press.

[19] Akande, A. (1990) "**Influences of Urban-rural Upbringing on Nigerian Students' Test Anxiety.**" Psychological Reports, pages 1261-1262.

[20] Alspaugh, J. W. (1992) "**Socioeconomic Measures and Achievement Urban vs. Rural.**" Rural Educator, pages 13-15.

[21] Alspaugh, J. W. and Harting, R. D. (1995) "**Transition effects of School Grade-Level Organization on Student Achievement.**" Journal of Research and Development in Education, Volume 28, pages 145-149.

[22] Baruth, I.G. and Duff, E. (1980) **Early Childhood Education.** Boston Mass: Special Learning Corp.

[23] Beattie, N. (1987) "**Homework in the Teaching and Learning of Modern Languages.**" Journal of Language Teaching, Volume 4, pages 25-27

[24] Bellah et al. (1996) **Habits of the Heart Individualism and Commitment in African life.** Berkeley: University California press.

[25] Berger, E.H. (1991) **Parents as Partners in their Children's Education.** Basingstoke: Macmillan

[26] Burden, P and Byrd, D. (1994) **Methods for Effective Teaching.** London: Allyn and Bacon.

[27] Butter, J (1989) "**The Role of Home work in Schools.**" Britain: Longman Green and co. Ltd.

- [28] Bowling, A. (1999) **Research Methods in Health Investigating Health Services**.
Buckingham: Oxford University Press.
- [29] Bzufka, M, W. Hein, J. and Neumar, E (2000) “**Neuropsychological Differentiation Subnormal Arithmetic Abilities in Children.**” *Journal of European Child and Adolescent Psychiatry* Volume 9, pages 65-76.
- [30] Chuma, P.C. (2007). **Proposal writing Module EDAE 21**. Lusaka. ZAOU.
- [31] Dladla, N. and Moon, B., (2002) ‘**Challenging the assumptions about teacher education and training in sub-Saharan Africa: a new role for open learning and ICT**’, **Pan-Commonwealth Forum on Open Learning**, International Convention Centre, Durban, South Africa.
- [32] Matafwali, B. M. (2006) “**Nature and Prevalence of Reading Difficulties in the Third Grade - Lusaka Rural and Urban.**” Thesis (M.ED.) The University of Zambia.
- [33] Mbozi, E. M. (1989) “**Factors Contributing to Disparities in Certificate Results in English – A Study of Some selected schools in Zambia.**” Thesis (M. ED). The University of Zambia.
- [34] Miller, G.W and Martin, S.(2001) “ **Factors in School Achievement and Social Class.**” *Journal of Educational Psychology*, Volume 5, pages 6-9.
- [35] Ministry of Education (1996) **Educating Our Future- A National Policy**. Lusaka: Zambia Educational Publishing House.
- [36] Mulubwa, D. (2007) “**An Investigation into the Factors that Affect the Performance of the Visually Pupils in the National Examination sat Grade12 Level.**” Thesis (M. ED) The University of Zambia.
- [37] Mwamwenda, M. (1987) “**Cognitive Development in African children.**” *Journal of Genetic, Social, and General Psychology Monographs*, Volume 7, pages 118-120.
- [38] Ngoma, P.S. (2006). *Introduction to research Part 1; Quantitative Module*. Lusaka: ZAOU
- [39] Oluka, S and Opolot –Okurut, C (2008) **Performance in Primary Education In the Teso Region**. Nairobi: UNESCO.
- [40] Moon, B. (2000) ‘**The open learning environment: a new paradigm for international developments in teacher education**’ in B. Moon, S. Brown and M. Ben-Peretz, **The Routledge International Companion to Education**, London:

Routledge.

[41] Ojoawo, A.O. (1989) **“Effects of Differential Distribution of Resources on Schools Performance in WASC Examinations in Oyo State Secondary Schools.”**

Doctoral Dissertation, University of Ibadan, Nigeria.

Appendix i

Questionnaires for pupils

1. Is ICT significant to development? Yes No

2. If the answer in question 1 is yes, how significant is it?

.....
.....
.....

3. Do have enough infrastructures for learning and teaching of ICT? Yes No

4. If the answer in question 3 is yes, what are these?

.....
.....
.....

..

5. When you compare urban schools like yours do you think there is a difference in terms performance to rural secondary schools? Yes No

6. If your answer is yes in 5, what do you think contributes to that?

.....
.....
.....
.....

6. What do you think should be done in order to minimise the challenges associated with the teaching and learning of ICT in your district.

.....
.....
.....

Appendix ii

Questionnaire for head teachers and teachers

1. Name of school (Special unit): _____

2. Gender: Male () Female ()

3. Age: 20-30 years (), 31-40 () 41and above ()

4. Highest academic qualifications: grade 9 () grade 12 ()

5 Highest professional Qualification

a) Certificate ()

b) Diploma: ()

c) Bachelor's degree: ()

d) Masters degree: ()

e) Others specify: () _____

6. Have you undergone training in ICT? Yes No

7. If the answer in question 1 is yes, where and for how long?

.....
.....
.....

8. What is the number of staffs in the ICT department?

9. How is the level of pupil participation in teaching and learning of ICT in secondary schools?

High Low

10. If the answer in 9 is low what do you think should be done in order to up the participation level in the pupils 'participation?

.....
.....
.....

11. Are there measures put in place to effectively revamp ICT in secondary schools?

Yes No

12. If the answer in 11 is yes, how effect is it?

.....
.....
.....

13. Do you have challenges in teaching ICT? Yes No

14. If the answer in question 13 is yes, what are some of the challenges that are faced so far?

.....
.....
.....

Appendix iii

Interview Guide for DEBS Officials

District: _____

Gender: Females () Males ()

1 Do have enough infrastructures for learning and teaching of ICT in your district?

Yes No

2. If the answer in question 1 is yes, what are these?

.....
.....
.....

3. Do you have trained personnel in ICT in your district? Yes No

4. Are there some secondary schools in your district that seem to have no challenges in the teaching and learning of ICT? Yes No

5. If your answer is yes in 4, what are the challenges faced in those schools?

.....
.....
.....

6. What do think should be done to these challenges to ensure effective teaching and learning of ICT?

.....
.....
.....

7. When you compare urban schools like yours do you think there is a difference in terms performance to rural secondary schools? Yes No

8. If your answer is yes in 5, what do you think contributes to that?

.....
.....