An Investigation into Whether Access to Quality Education can be Better Met With The Use Of E-Learning, Analysing Rural and Urban Schools. A Case of Zimbabwe

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Abstract:
Zimbabwe is committed to transforming teaching and learning at all levels of education through the introduction of e-learning. However, the successful introduction of e-learning into basic education depends largely on the availability of ICT infrastructure and the capacity of teachers and students to use them. Using some selected rural and urban secondary schools in some parts of Zimbabwe as a case study, this study investigates the accessibility of e-learning infrastructure among students and teachers of rural and urban schools. It was found that access to e-learning resources by teachers and students was inadequate. Nonetheless, there were differences in access to e-learning resources between students and teachers of rural and urban schools. Students of urban schools had more access to e-learning resources and therefore had more access to quality education than their rural counterparts. Young teachers of urban schools were also more likely to have access to e-learning resources than those of rural schools. This digital divide was largely due to rural communities not being able to afford the resources and poor infrastructure development and urban schools staffed with teachers that were trained in the pre-computer era. It is recommended that the Ministry of Primary and Secondary Education provides all basic schools across the country with ICT infrastructure. Also, efforts should be made to build the capacity of all teachers in order to facilitate the efficient introduction of e-learning in education like the initiative made by Higherlife Foundation to train Basic ICT Skills to teachers.

I. INTRODUCTION

Research examining the effectiveness of e-Learning has increased in recent years. This is primarily due to the increased possibilities for Information Technology and learning as well as increased political and organisational attention to 'what works' in learning (source). However an in-depth analysis should be done on the cost and accessibility of e-learning and how these are going to lead to creation of learning divisions and thereby affect pass rates.

1.1 BACKGROUND TO THE STUDY

In Zimbabwe, e-learning in education is not a very widespread phenomenon, particularly considering rural settings where most schools are not connected to electrical power supply. Also about 83% of rural schools have poor or no infrastructure for the computers which they need as a resource for e-learning (ZIMSTAT 2013). To compound to that, cellular network systems are not reliable at best mainly because cellular operators say most of the network usage is in urban centres hence their concentration in the urban centres. Compare this with schools in towns where the majority of them have medium to advanced computer labs, access to Wi-Fi, qualified computer teachers and reliable cellular networks a learning division is bound to occur. With the push of e-learning strategies within schools by the new curriculum the researchers seek to investigate the way affordability and accessibility will affect the ways in which rural and urban schools are to achieve the set educational goal of access to quality education and student achievement. The researchers will be eager to learn if educational goals can be met within the curriculum using e-learning or boundaries are bound to be created because of differences in location, of schools. Scott (2006) says that in

order to fully benefit from an e-learning system, the education providers have to face the challenge of building new strategies for ensuring accessibility to resources while considering the requirements from all stakeholders in the education sector. In order to meet the demands of the new curriculum most urban schools have issued learners to bring in devices with access to the internet as a tool of learning. In rural schools most learners have no access to devices which provide access to e-learning. In rural areas most parents cannot afford to buy cell phones for their children let alone laptops. The combination of cost and accessibility is likely to hinder the achievement of educational goals for rural schools using e-learning.

1.2 STATEMENT OF THE PROBLEM

There are challenges underlying the use of e-learning as an instructional method and integrating internet in the teaching and learning process. This has created learning gaps in comparison with urban schools as they pursue with their academic ladder to tertiary education. Hence careers such as Engineering, Technology will be affected drastically due to lack of computer skills.

1.3 THE PURPOSE OF THE STUDY

The purpose of this study is to bring out the unassumed learning divisions which are going to be created by the thrust towards e-learning as a medium of learning between schools in urban areas and school in rural areas.

1.4 THE OBJECTIVES OF THE STUDY

Objectives of the study are:
1. To analyse the affordability of e-learning resources to rural and urban schools.
2. To investigate the hardware and software resources

available in both rural and urban schools

3.   To find out the challenges faced by headmasters and teachers in the implementation of e-learning.

1.5 THE RESEARCH QUESTIONS

The following research questions became critical as they formed this study's basis for investigating and analysing the effects of cost and accessibility of e-learning to rural and secondary schools.

(a)   Are schools providing adequate hardware and software in the classroom to support the integration of e-learning in the classroom?

(b)   Are the heads of schools providing adequate leadership for integration of e-learning in the classroom?

1.6 SIGNIFICANCE OF THE STUDY

The findings from this study could be useful to the concerned parties which include the policy makers, heads of schools, teachers, students and education sector. Bringing out the unassumed gaps will pave way for efforts to address the digital gaps which may bring educational inequalities.

1.7 DELIMITATIONS OF THE STUDY

The researcher anticipated to work with classroom practitioners and administrators because they are the ones faced by the challenges in the integration of internet in computer studies. For proximities the researcher used some rural schools in Midlands Chirumhanzu District, rural and urban schools in Manicaland, Makoni district, Mashonaland Central, Mbire District, Mount Darwin District, Guruve District, Matebeleland North Province, Victoria Falls District. In these districts, several schools were involved.

1.8 KEY TERMS

E-learning, Urban, Rural, Electricity, Internet and Digital divide

II. LITERATURE REVIEW

2.0 INTRODUCTION

The Internet has become one of the vital ways to make resources available for research and learning for both teachers and students to share and acquire information (Richard and Haya, 2009). Technology-based e-learning encompasses the use of the internet and other important technologies to produce materials for learning, teach learners, and also regulate courses in an organization (Fry, 2001).

2.1 THE ROLE OF E-LEARNING ON ACCESS TO QUALITY EDUCATION

There is a considerable body of evidence to suggest that different teaching delivery styles can have different degrees of success; as measured in terms of academic results (Emerson & Taylor, 2004). Uhu8A primary characteristic that sets successful e-learning learners apart from their counterparts is their autonomy and opportunity for repeated practise (Noesgaard 2014) and greater student responsibility. A second characteristic that differentiates successful e-learning learners from unsuccessful ones is an internal focus of control, self-motivation for under achieving students leading them to persist in their educational endeavour (Olson et al, 2011).. E-learning is rapidly transforming the world into an information society. This transformation requires that the education sector be able to harness the full potential of e-learning to improve the quality of teaching and learning. It is therefore not surprising that the use of e-learning is on the rise in many educational institutions

because they serve numerous purposes in teaching and learning. The rationale for e-learning investments in education is based on the assertion that traditional teaching and learning methods in which knowledge is imposed on learners have not provided enough opportunities for learners to create their own knowledge and develop critical minds. UNESCO (2013) is of the view that adopting e-learning into the educational systems has the potential of increasing the quality of education delivery as well as facilitating greater access to information and services by marginalized groups and communities. Therefore when used effectively, e-learning could:

1.   Make education easier, cheaper to access and free of the limitation of distance.

2.   Result in better academic performance due to changes in teaching and learning.

The above discussions make a case for the integration of e-learning in education. These discussions have also influenced the inclusion of e-learning in measuring the quality of education in Europe and other parts of the world (European Commission, 2013).

2.2 THE EFFECTS OF LOCATION TO ACCESS OF QUALITY EDUCATION AND STUDENT ACHIEVEMENT

Research has concluded that availability of computers (Baker, Gerhart &Herman, 1994) and qualified school library media programs correlate positively with student achievement (Sivin-Kachala, 1998). Although use of educational technology has a significant positive impact on achievement, computers and the related electronic equipment required for connecting computers into network is generally absent or insufficient in rural areas. There are very large differences in the allocation of educational internet resources among the schools in different regions of Zimbabwe. Computer resources are insufficient to meet the needs of especially economically disadvantaged students in the community. Maenzanise (2006) noted that in developing countries, rural areas have difficulty in accessing a global information resource base. He alludes this to under developed ICT infrastructure and equipment and the overprotective intellectual property regulations and laws in the form of copyright, patents and trademarks. He goes on to say that learning under these circumstances becomes equally challenging for without access to the information and knowledge that abounds elsewhere meaningful learning is hampered. Access is not equal for all students to be prepared effectively for the information-rich world (Coley, Cragler and Engel, 2011). Although all students are expected to develop technological fluency, if students from school and home backgrounds where technology is not widely accessible or used they will be at a disadvantage for technology-based tasks and miss out on tremendous educational opportunities with technology resources. Irfan and Noor (2012) observed a significant difference in urban-rural performance where urban schools were superior to their counterparts citing technology as one of the major effects for these differences in performance. According to Pei-Yu (2013) in his studies on urban and rural differences in general showed that location of the community in which the school is situated has effect on the performance of pupils. Giving credence to the above, Sarfo and Ansong-Gyimah (2011) found significant difference in academic performance of students in urban and rural areas of their study and concluded that achievement must have been borne out of many facilities they were used to which were not available in the rural set up. Another technical challenge that has prevented e-learning from being offered in rural schools is lack of reliable electric power. (Pei-Yu, 2013) The electrical grid does

not yet reach more isolated rural areas and the grid itself does not provide a steady or reliable source of power. This is true in the Zimbabwean scenario considering the areas the researchers visited. Meanwhile, e-learning technologies, whether small hand held devices or projectors require electrical power. Kanyongo (2005) noted that although computers have been part of the country's education curriculum for a long time, their use has been limited to well-funded urban schools, private schools and boarding schools that have electricity. According to Bukaliya and Mubika (2012), e-learning needs a lot of capital investment, both for initial stages and in the subsequent stages and computers are very expensive for most schools, considering the financial constraints of most of the parents in rural areas. Coupled to this, Panagiotis et al (2010), posit that there is also lack of technical support, which to some extent will bleed the school coffers. In the Zimbabwean situation, some of the prices are inflated to the extent that they are too costly for most rural schools, hence they tend not to promote e-learning.

2.4 THE DIGITAL DIVIDE
Some of the widest digital divides are within countries between rural and urban centres, and between rich and poor communities (Pei-Yu, 2013). Infrastructure challenges are greater in rural schools which therefore affects e-learning initiatives. Currently the gap in access to education of underserved students is mirrored by a gap of them using the internet and other ICT technologies partly due to societal norms and partly due to their economic situation. (Oyelaran-Oyeyinka and Lal, 2005) made a statistical analysis of the factors behind digital inequality within and between African countries. They concluded that although infrastructure is a critical factor, the social context, education and technical knowledge of the individual user are also key. Access in African rural areas has lagged because of difficulties caused by the lack of distribution channels, education and poverty (Anderson, 2005). Internet penetration in rural Africa is currently only 10.8% compared to a global average of 27.9%.the low levels are to a large degree due to cost. Ethernet cables are currently serve only urban centres across much of Zimbabwe. (UNESCO 2013) According to the UN Broadband Commission (2015) providing all the students with internet access is a very expensive proposition for most of the rural African communities because internet connections are erratic if available at all. Also connection speeds was ranked lowest in rural areas with an average connection speed of 9.7 Mbps compared to 16.8 Mbps for urban centres (Nhando 2015). Students from families who do not have access to today's computer technology will have a hard time catching up in tomorrow's technological job market. The e-learning Africa report of 2012 identified that human resource capacity is lacking in rural areas compared to urban areas. The report highlights that under conditions of poor infrastructure and shortage of human, intellectual and financial resources which characterise many African rural communities, integrating technologies becomes significantly more challenging and complex. Most interventions are focused on environments that can offer higher degrees of functionality, consistency and sustainability which often are urban and peri - urban environments in Africa.

2.6 CONCLUSION

The goal of access to a high quality education for every child in Zimbabwe remains unfulfilled, but technology presents an opportunity for this to be a reality. E-learning has overwhelming potential to improve access to education in rural areas and if implemented well with strategies that focus on overcoming the imbalances mentioned above, radical transformation of the education is possible. Despite these challenges, e-learning technologies have the potential to significantly improve access particularly to science and math education for rural and disadvantaged schools. Currently, however most e-learning opportunities tend to be in urban areas due to infrastructural and other challenges found within rural areas.

III. RESEARCH METHODOLOGY

3.1 INTRODUCTION
The research done was qualitative in nature as it used questionnaires as well as literature.

3.2 RESEARCH DESIGN
The research design for this study was descriptive survey design of the ex-post facto type. The research tried to assess the influence of resources and location on the dependent variables

3.3POPULATION
The researchers worked with classroom practitioners and school heads who attended an ICT Training workshops facilitated by the researchers. The workshops funded by Higher life Foundation were meant to equip teachers and school authorities with basic ICT skills so as to help them deliver in line with the requirements of the new curriculum. The training covered all Zimbabwean Provinces.

3.4 SAMPLE
For proximities the researchers used some rural schools in Midlands Chirumhanzu District, rural and urban schools in Manicaland, Makoni district, Mashonaland Central, Mbire District, Mount Darwin District, Guruve District, Matebeleland North Province, Victoria Falls District and Harare Provinces. In these districts, several schools were involved so each class was made up of teachers and headmasters from different schools within a cluster and in some rare instances, a school would be trained on its own. So a group of 20 was used from each session and a sample of 8 groups which the researcher interacted with was selected

3.5 SAMPLING TECHNIQUES
The researcher basically used the stratified random sampling method because the researchers wanted to highlight the specific sub groups of rural and urban schools and every member of the large population had an equal chance of being selected.

3.6 THE RESEARCH INSTRUMENTS
The researchers used questionnaires and literature in carrying out this research.

3.7 DATA PRESENTATION AND ANALYSIS PROCEDURES
Data obtained from the research was presented in the form of tables, column graphs, pie charts and discussions.

IV. DATA PRESENTATION AND ANALYSIS

4.1PRESENTATION OF FINDINGS
This section presents data on the socio-demographic characteristics of respondents, access to and use of e-learning

resources by students, the impact of e-learning on students' learning motivation, access to and use of e-learning resources by teachers, the role of school administrators on provision of quality education through e-learning.

4.2 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Data was collected from two categories of respondents, namely teachers and school administrators of randomly selected secondary schools in provinces mentioned in the previous chapter.

4.2.2TEACHERS

The data collected on the background of teachers included their gender, ages, educational background, subjects taught and teaching experiences. School Name{80 Rural (40 Primary 40 Secondary, 80 Urban (40 Primary 40 Urban)}

Table.1. Ages of respondents

	Rural				Urban			
	Primary(40)		Secondary(40)		Primary(40)		Secondary(40)	
Age	Frequency	%	Frequency	%	Frequency	%	Frequency	%
<30	7	17.5	12	30	3	7.5	3	7.5
31-40	13	32.5	15	37.5	7	17.5	10	25
41-50	10	25	6	15	12	30	17	42.5
51-60	9	22.5	7	17.5	15	37.5	10	25
61-65	1	2.5	0	0	3	7.5	0	0
		100		100		100		100

Teachers had varied educational backgrounds as shown in the table below.

Table.2. Highest Qualification of Respondents

	Rural				Urban			
	Primary(40)		Secondary(40)		Primary(40)		Secondary(40)	
Qualification	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Diploma	29	72.5	15	37.5	26	65	12	30
Bachelors	8	20	21	52.5	10	25	21	52.5
Masters	3	7.5	4	10	4	10	7	17.5
		100		100		100		100

Table 3 below shows years in service of respondents.

Table.3. Years in Service of Respondents

	Rural				Urban			
	Primary		Secondary		Primary		Secondary	
Years in Service	Frequency	%	Frequency	%	Frequency	%	Frequency	%
<5	4	10	12	30	3	7.5	3	7.5
6-10	14	35	13	32.5	7	17.5	4	10
11-20	12	30	8	20	10	25	14	35
21-30	6	15	5	12.5	11	27.5	12	30
>30	4	10	2	5	9	22.5	7	17.5
		100		100		100		100

Teachers' ages were grouped into five categories with a ten-year interval starting from less than 30 years. The majority (32.5%) and (37.5%) of teachers in rural areas were between the ages of 31 and 40 years. In urban areas the majority lied in the 41 to 50 years age group which constituted 30% and 42.5% respectively. The bulk of aged teachers administrators were in urban areas giving a likelihood of them being trained before computers were introduced in teachers' colleges. The bulk of

young teachers are concentrated in rural areas which are ill-equipped.

Table.4. How often do you use computers for work or any other activity?

Frequency of use	Rural				Urban			
	Primary		Secondary		Primary		Secondary	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Never	29	72.5	20	50	15	37.5	10	25
Daily	0	0	1	2.5	3	7.5	10	25
Weekly	2	5	2	5	6	15	15	37.5
Rarely	9	22.5	17	42.5	16	40	5	12.5
		100		100		100		100

From the above table, the majority of teachers who never used computers were in rural schools with 29% and 20% respectively. A considerable number that also rarely used computers where the aged in urban primary schools. The main reason given was non availability of computers and electricity as well as lack of knowledge on how to use them   .

Do you use the internet to update subject knowledge or to do personal development?
The majority of teachers in both rural and urban areas said they rarely do that and some never use the internet as they are not familiar with the technology. A handful of teachers in the 31-40years age group were found to somewhat use the internet mainly for social networking.

Are you confident in using software packages to prepare teaching materials?
On confidence in using some selected packages like Word processors, Spreadsheets, creating presentations and using internet to prepare some teaching materials, 63% of rural and urban young teachers had some confidence but lacked the support in terms of equipment, internet connectictivity as well

as electricity. Those trained in the computer era had the skills but have nowhere to practice it while the bulk in the urban schools have the facility but lack the knowhow on how to use them.

Have you taken any professional development courses in computer skills?
On whether teachers have taken any professional development in computer skills, the 70 % cited this training as their first one and called for follow ups after the training.

Do you have computers at your school?
60% of the teachers especially in the rural areas indicated that they did not have computers in their schools with the exceptions of those that owned laptop computers that are rarely used because of non-availability of electricity. Some even indicated that they use their laptop computers for demonstration purposes.

4.2.3 SCHOOL ADMINISTRATORS
Background information of school heads comprised of gender, number of years in school administration position and educational qualifications and four administrators were used.

Table.5. Characteristics of school administrators

Characteristic		Frequency	Percentage
Sex	Male	3	75
	Female	1	25
Age	40 -45	2	50
	46 -50	1	25
	51-55	1	25
Educational Background	Diploma in Education	1	25
	Degree	2	50
	Master's Degree	1	25
Number of years in school administration position	1 – 4	1	25
	6 –10	2	50
	11-15	1	25

About 75% and 25% of school administrators were males and females respectively. Approximately 50% of school administrators were between the ages of 40 and 45 years. School administrators between the ages of 51 and 55 years constituted 25%. Regarding educational qualification, 50% of school administrators were Degree holders. About 25% Master's degree holders and 25% Diploma in Education holders. Also, 50% of school administrators have been managing schools between 6 and 10 years. Nevertheless, 25%

of school administrators had between 1 and 4 years' experience in school administration. Another 25% had been in school administration position for the past 11 to 15 years.

4.3 STUDENTS' ACCESS TO E-LEARNING RESOURCES
Student access was based on teachers' responses since students were not asked. The study found that the computer and mobile phones were the commonest e-learning resource used in the

sampled schools. Other e-learning resources such as projectors, modems (supplied by HLF) were available at some schools but virtually unavailable at the sampled rural schools. Nevertheless, all sampled schools in urban areas had computers. All urban schools had computers which were housed in a computer laboratory. Schools that did not have a computer laboratory kept their computers either in the Staff Common Room or the headmaster's office. Table 6 below shows ICT resources available in sampled schools

Table.6. ICT Resources in Schools

School Category			ICT Resources available
Rural	1	Primary Schools	-Tablets(Donated by HLF) in a few schools and a Dongle
	2	Secondary Schools	One or two personal computers in some schools, Printer, Projector, (Laptop Computers Solar charged acquired under POTRAZ)
Urban	1	Primary Schools	Computers, Printer, Projector, Internet
	2	Secondary Schools	Computers, Printer, Projector, Internet

Some schools benefited from Higher life Foundation which donated Dongles, Tablets and had internet installed for use in teaching Ruzivo e-learning. Some rural schools, one per district received solar charged Laptop computers sourced from POTRAZ. However, all these efforts only benefit one school in particular.

Table.7. Access to computers and computer laboratory

School Category			Average Number of working computers	Computer to student ration per class	Does your school have a computer lab?
Rural	1	Primary School	3	1 - 8	No
	2	Secondary School	3	6	No (except boarding schools and POTRAZ beneficiaries)
Urban	1	Primary School	20	1 - 3	Yes
	2	Secondary School	20	1 - 3	Yes

Some schools do not have computers at all which affects the averages. In most rural schools teacher use pictures of components like keyboards and monitors as teaching aids because they do not have the computers. In some schools computers are not even taught because of shortages of computers as well as competent staff to teach the course. Examination of computer-to-student ratio indicated that rural schools had inadequate access to computers. In urban schools average computer-to-student ratio is 1:3. All the schools had access to electricity. Administrators, however, complained of intermittent power supply especially during the rainy season as a challenge hindering students' and teachers' ability to make efficient use of available computers, adding that some computers had malfunctioned as a result of frequent power failures. However although some Secondary schools have no computers they allow their students to bring mobile phones.

4.4 USE OF E-LEARNING RESOURCES
It is worth noting that computers were only used in teaching ICT as a subject in all sampled schools. The time available for students to use computers in the classroom for e-learning ranged between 30 and 60 minutes per week during free periods and lunch. However, differences were observed between rural and urban schools in the number of minutes computers were used in the classroom for e-learning lessons. Urban schools allowed students more time in the computer lab for as long as it was free. However, in rural areas since most schools do not have computer labs, students did not have exposure to the computers.

4.4.2 RESEARCHING AND USE OF INTERNET WITH COMPUTERS IN SCHOOL
Apart from using computers for studies in the classroom, some students were allowed to practice on their own in the laboratory during their free period. Other schools that had access to computers did not allow their students to practice with computers during their free periods citing unavailability of supervisors. Some school administrators cited the lack of computer laboratory as one major reason why their students could not use computers for research and e-learning.

4.5 TEACHERS' USE OF E-LEARNING RESOURCES

The study sought to find out the extent to which teachers had access and used e-learning resources in their teaching activities. Teachers who had access to computers were asked if they used the computers for teaching. About 61.25% in rural areas and 21.25% in urban areas said they never used computers for teaching. Approximately 1.25% in rural areas and 16.25% in urban areas said they use computers daily.5% in rural areas and 26.25% in urban areas indicated that they used them weekely.32.5% in rural areas and 26.25% in urban areas indicated that they rarely use computers for teaching. The results are summarised in table 8below.

Table.8. Cross-tabulation of computer usage for teaching purposes

School category	Response				Total
	Never use	Daily	Weekly	Rarely	
Rural	49 61.25%	1 1.25%	4 5%	26 32.5%	80 100%
Urban	25 31.25%	13 16.25%	21 26.25%	21 26.25%	80 100%

Teachers used the computer and the internet to search for information to complement what they had in the textbooks. It was also found that some teachers used computers to keep their students records and prepare lesson plans. Teachers who did not use e-learning resources in any way related to teaching cited many factors that hindered their readiness to do so. The major barrier to teacher's readiness to use e-learning resources for teaching was the lack of access to the resources. Also, most teachers did not have the capacity to use the resources for teaching.

4.6 INTERGRATION OF E-LEARNING IN SCHOOLS BY THE SCHOOL ADMINISTRATION

The study sought to find out the role that the school administration is playing to ensure the integration of e-learning and to find out the challenges that they are facing. 75% of the rural heads of schools highlighted that their schools do not afford to purchase computers. All the heads said that they had approached donors to get funding for purchasing computers, setting up laboratories and connecting to WIFI services. All the heads in rural schools opined that parents of the pupils could not afford to provide their children with requisite e-learning tools such as mobile phones and personal computers. 75% of the heads of schools highlighted that they had electricity at their stations although 25% said it was unreliable most of the times. All heads said that they had approached the Ministry of Primary and Secondary Education for assistance but their applications were still pending and had been advised to seek for other ways to seek for funding. Many urban schools have teachers that were trained before computers were used in school; they had challenges in using computers even though they are there at their school. Contrary to rural areas, they have a majority of young teachers who are computer literate, but the schools do not have resources. All urban heads of schools had established that they had adequate hardware and software to set up e-learning.

4.7 DISCUSSION OF FINDINGS

The main objective of this study was to investigate the availability of e-learning and its effect on quality education in rural and urban schools in the district of selected provinces in Zimbabwe. The section presents the discussions of the main findings in accordance with the specific objectives of the study.

4.7.1 IMPACT OF E-LEARNING RESOURCES ON ACCESS TO QUALITY EDUCATION

It is known, from literature that e-learning resources have positive impact on quality of education. E-learning resources can impact more on students learning motivation if other e-learning resources in addition to computers, are made available. The uneven distribution of resources was a major reason accounting for the difference in the access to quality education of students of urban and rural schools.

4.7.2 ACCESS TO AND USE OF E-LEARNING RESOURCES BY TEACHERS

Access to computers by teachers of was generally insufficient. Only 61.25% of rural teachers do not use computers and related resources for teaching. They also cite lack of access to internet as one of the reasons behind not using e-learning. However, teachers of urban schools who are younger had better access to computers than their rural counterparts. Teacher's use of e-learning resources for instruction was also low. However, some teachers reported using computers in the class to demonstrate to students. Others used the internet to search for information to supplement what they had in the textbooks. Some teachers did not use computers to teach partly because they lacked the capacity to do so. The major obstacle hindering teachers" ability to use computers to deliver their lessons was the lack of access. This finding confirmed a related discovery by Mwalongo (2011) in Tanzania that most teachers did not use e-learning resources to teach mainly because the infrastructures were unavailable. The lack of resources and related low usage by teachers for teaching could limit the ability of students to acquire the necessary quality education. Teachers were optimistic about the prospects of e-learning resources in enhancing teaching and learning. Teachers were motivated to adopt e-learning in teaching because they believed it brought about efficiency. Teachers who had no access to computers expressed willingness using e-learning resources to teach if they had access. Apart from lack of access, the lack of e-learning skills prevented some teachers from incorporating e-learning resources in their teaching activities. The lack of e-learning skills resulted in less confidence of teachers in the use of e-learning.

4.7.3 INTERGRATION OF E-LEARNING IN SCHOOLS BY THE SCHOOL ADMINISTRATION

Headmasters of rural schools are facing great challenges of cash flow which is mainly hindering their implementation of e-learning. Communities are also not supporting them which is a drawback for them to succeed. Funds are almost unavailable and ministry intervention is almost non-existent, the only hope being non-governmental organisations like Higherlife Foundation among others. Urban school administrations are currently putting their staff through staff developments to give them confidence and skill in utilising e-resources.

4.8 CONCLUSION

The analysis of data was done in line with the specific objectives of the study. The results showed that access to resources by students and teachers was generally inadequate for them to fully get the benefits of e-learning. E-learning resources are known, from literature to have positive motivations on the learning of students and with poor access in rural areas, there is bound to be a gap between urban and their rural counterparts. The majority of teachers were prepared to use e-learning to teach if they had access. Most teachers did not have the capacity to use e-learning resources to teach. The lack of capacity to use e-learning resources translated into low

confidence of teachers in using e-learning resources for teaching purposes. The school administrations in rural schools are facing challenges of affordability of resources due to poor cash flows and unavailability of funds. Urban schools were generally succeeding in using eLearning resources to impart quality education through staff developing their teachers.

V. SUMMARY CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY
This study sought to investigate whether access to quality education can better be met with the use of e-learning analysing the affordability and accessibility of the method in urban and rural schools in selected districts in Zimbabwe. The study examined access and use of e-learning resources by staff of rural and urban schools, the impact of e-learning resources on access to quality education, access to e-learning resources by teachers in urban and rural schools. The researchers had to answer a few research questions such as

- Are schools providing adequate hardware and software in the classroom to support the integration of e-learning in the classroom?
- What are the challenges being faced by headmasters in the integration of e-learning in secondary schools.

A number of assumptions were also taken into consideration during the research study. The researchers assumed that, when collecting data from respondents, they gave honest answers.

Questionnaires and interviews were used to gather information from teachers and from school heads.It was discovered that access to e-learning resources was generally inadequate in both rural and urban schools. Students of urban schools had better access to e-learning resources than their rural counterparts. Also, students of urban schools used e-learning resources for studies and research more than their rural counterparts. The impact of e-learning on access to quality education was higher for students of urban schools than those of rural schools.

Teachers of urban schools had better access to e-learning resources than those of rural schools. However, most urban schools are characterised by senior teachers who did not receive computer lessons during their training and hence have challenges in using ICT for teaching. On the other hand, rural schools that are ill-equipped have a majority of recently trained teachers who are computer but are redundant because of unavailability of resources in their schools. A few teachers, however, were unwilling to use e-learning to teach even if they had access. The lack of access to e-learning resources and the lack of capacity of teachers to use e-learning resources accounted for teachers‟ inability‟ to use e-learning for teaching.

5.3 CONCLUSION
The potential of e-learning resources in enhancing education has received wide attention in most countries including Zimbabwe. It is useful to note that the provision of e-learning resources and the capacity of teachers and students to effectively use them in teaching and learning are crucial to the success of acquiring quality education. Given the paucity of studies on the state of access and use of e-learning resources, especially at the basic level, an empirical research into the availability and usage of e-learning resources in teaching and learning becomes necessary. What this study sought to achieve was to investigate the availability of e-learning resources and how teachers and students use them in teaching and learning and accessing quality education. Even though access to e-learning resources across the country was generally inadequate, students and teachers of urban schools had better access to e-learning resources than their rural counterparts. It was also noted that generally urban schools could afford the basic requirements of setting up e-learning infrastructure although they are now struggling with maintaining their resources. However their rural counterparts are struggling with the affording the basic requirements such as computers and internet.

5.4 RECOMMENDATIONS
Based on the findings of this study, the following recommendations are made.
1. Efforts should be made by Government to provide all basic schools in the country with computers and other e-learning devices as well as laboratories where these resources could be kept safely. Adequate provision of e-learning resources in Basic schools will increase the motivation of both teachers and pupils to use them for teaching and learning purposes. This will go a long way to improve the quality of education.
2. Schools should source donations from well-wishers, Old Students Associations and from some non-governmental organisations. There are such organisations such as Higherlife foundation which are building learning hubs and equipping schools with computers. This will help alleviate the problem of shortage of computers, textbooks, computer rooms and others.
3. There is also the need for capacity building of teachers in e-learning skills to be able to utilize e-learning resources effectively in teaching subjects and research. This may start at the Colleges of Education and universities in the country where teachers are trained to teach at the Basic level. There are organisations such as Higherlife; in conjunction with Bindura University which are imparting basic computer literacy skills and internet navigation. Also there was the CDE Chinotimba initiative in conjunction with teachers union of Zimbabwe in Buhera which saw over 173 teachers trained in ICT and e-learning. In Gweru, Zimbabwe, Golden Knot is facilitating the training in ICT in line with the new curriculum. Building the capacity of teacher trainees in e-learning skills will go a long way to improve teaching and learning of and access to quality education. There is also the need for periodic workshops and in-service training of Basic School teachers in e-learning skills to enable them use e-learning services for teaching.
4. In addition, setting up a policy on e-learning and ensuring effective monitoring and evaluation of the e-learning in Education from time to time is needed to check on the progress and weaknesses in the implementation of the policy. This will provide policy makers with feedbacks that may inform proper planning towards integrating e-learning into education.
5. Schools should introduce computer levy that will be used to maintain, service and repair computers and buy other consumables that inflict budgetary constraints to the schools.
6. Engaging in a campaign, especially with school heads, to create an awareness of the importance of integrating e-learning in teaching and learning.
7. School heads were encouraged to be innovative and assertive so as to ensure that they move with technologies of the time thereby ensuring that their students have access to quality education.

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