A critical analysis of the use of the ICTs in the Documentation and Publication of Oral Traditions.

Sabelo Mpala and *Mbulisi Ndlovu

Department of Languages Lupane State University P. O. Box AC 255 Ascot Bulawayo, Zimbabwe.

This research paper focuses on the documentation of oral traditions and making them available to the masses through utilization of Information and Communication Technologies (ICTs). This research looks at how ICTs can help in documentation and publication of oral traditions to the masses through designing and implementation of an Izaga Electronic Database which will be tested amongst linguistic students at a Zimbabwean university and selected IsiNdebele learners from the rural areas and around Bulawayo. This research uses modernism as its theoretical framework; it looks at the change from traditional ways of doing things where oral traditions were passed on from one person to another through oral communication, to the 21st century utilization of ICTs where oral traditions can be captured by one individual and broadcasted to masses. The research established that oral traditions can be documented and published to the masses through the usage of ICTs as an Izaga Electronic Database was implemented. The response from the evaluators was overwhelming therefore proving that the usage of ICTs can help in the documentation of oral traditions. The research therefore recommends that the government should come up with an IT policy which will promote teaching of computers in schools and subsidize prices for ICT products for school or student purchases. Local universities should also offer computational linguistics to improve in the development of ICT packages in local languages.

Key words: Information communication technologies, izaga (proverbs), critical analysis, oral traditions, computerization.

INTRODUCTION

The role of Information and Communication Technologies (ICTs) in the simplification of all every day human activities and tasks cannot be ignored. Gone are the days when a university student had to carry bulky books with a travelling bag when researching. With the continuous developments that are taking place in technology, he/she now carries a small memory stick which can fit even in a wallet, and a laptop. Technology did not only make things less bulky, but it also made things accessible to billions of people world over in the quickest of time and at a cheaper rate. Most importantly, technology has helped a lot in the preservation of important information and publishing it to be accessed by billions of people the world over.

Objectives

1. To assess the effectiveness of using ICTs in the documentation and publication of oral traditions.
2. To assess the willingness of students and society at large to access oral traditions through ICTs.
3. To suggest solutions to the challenges that hinders the documentation and publication of oral traditions.

What are ICTs?

Technology can play a critical role in the documentation, preservation and publication of oral traditions. Technology is too broad a term. This research paper will have a bias

*Corresponding Author’s E-mail: mndlovu@lsu.ac.zw.
towards one aspect of technology, which is Information and Communication Technologies (ICTs). According to Srinivas [1], “ICT” stands for Information and Communications Technologies, and covers a conundrum of equipment and devices that enable transmittal, processing and use of information and knowledge. This includes phones and computers which people use on their day to day activities. These technologies have taken over the lives of many people. Reading novels is slowly fading away as most people now spend time on social networks like Facebook, Whatsapp, etc. Students now use internet in phones and computers for their research. In such kind of a world, it is difficult to ignore the role and edge ICTs have in nearly all the aspects of human existence. In the documentation of oral literature, why should we take people back to print text when it is becoming evident that ICTs are now their preferred method? It is important to integrate ICTs so that all spectrums of the society are covered. This research explores how ICTs can help in the documentation and publishing of oral traditions. The research was carried out by first designing and implementing an electronic database of IsiNdebele proverbs. This programme was taken to selected people for analysis thereby exploring how ICTs can help in the documentation, preservation and publication of oral traditions. Oral traditions are defined by Gill [2] as a manner in which information is passed from one generation to the next in the absence of writing or a recording medium.

The application of ICTs in the documentation and publication of ICTs to indigenous languages as a topic has not attracted much interest. This is backed by the scarcity of academic information on the topic. However, there is some relevant information which can be drawn from researches which were made on other African languages under the same quandaries as IsiNdebele, which is always under the shadow of colonial languages like English, which are given more power by the language policies of most countries.

In Zimbabwe, there is one scholar who seems to be so particular about the application of ICTs in the local languages including oral literature. His writings and research date back to 1999, his name is Tsiko [3]. In his work, he is of the view that using African languages in computer applications is an important step in promoting traditions but many perceive that as not feasible. In support of the notion that development of computer applications in local African languages is impossible, Tsiko cites Fairall, Executive Director of the Computer Society of Zimbabwe who proclaims that it would be extremely difficult to have programming in local languages in developing countries like Zimbabwe. However, one computer scientist, according to Tsiko, was optimistic that the failure of the current crop did not mean that the future generations will also fail. In this regard, this research sought to prove that a computer programming can be done in indigenous languages, which therefore helps in the documentation of oral traditions electronically.

This research differs from that of Tsiko in that it did not only base its analysis on the assumptions by experts and academics but, it also incorporated opinions of the ordinary oral traditions users. This research also went further by adopting a practical approach which culminated in the design and implementation of an IsiNdebele Proverbs Electronic database, which is done in an indigenous African language, unlike what Tsiko and his panel of experts assumed that it will be impossible to design computer packages in indigenous African languages.

To sum up what might be the possible cause for the position in which the oral traditions in African languages find themselves in; Osborn [4] is of the view that this situation obviously arises from the underlying sociolinguistic factors, language policy, and educational contexts, though in this paper these will not be explored in depth. However, it is worth noting that computers and the internet, like formal educational systems a century earlier, have been introduced and disseminated as more or less monolingual media using one or another European language. This is a reflection of both the dominance of the languages inherited from colonization in ICT and the use of these languages by those people in Africa most likely to use the technology.

With this in mind, it is the work of this research paper to give a critical analysis, bring into light and provide possible solutions to these and other underlying problems which might encroach in the use of ICTs in the documentation and publication of ICTs in indigenous languages.

This research used modernism as its theoretical framework. Modernism as a theory advocates for a change from the traditional norms, it advocates for a radical change in traditional systems. Most Africans are very particular about changes taking place in their systems, especially if these changes are necessitated by things which Africans perceive to be of Western ideology. Use of ICTs in the documentation and publication of oral traditions can be viewed from two perspectives, which are those of the traditionalists and modernists. Traditionalists perceive change in a negative way, they believe that any change to their language and systems might destroy it just as colonialism led to the demise of their traditional systems of governance. In simple terms, their trust in Western technologies is limited because of their past experience with the West. Such calibre of people will never want oral traditions to be documented; they will want it to be shared orally like how they used to be from the start. On the other hand, there are modernists. Modernists take change in a positive way, they believe that oral traditions are dynamic just like the culture; they change from time to time. They are of the assertion that “oral traditions” can change and be documented down. They do not take the term “oral
"oral traditions" literally like the traditionalist. To them, "oral traditions" is just a name. They do not dwell much on the meaning of that phrase; thereby allowing change to take place. They accept all the things happening in their surroundings in a positive manner. Such an approach to this research will certainly answer many questions that surface. Use of ICTs in the documentation and publication of oral traditions cannot be approached from a traditionalist perspective, modernism as a theory lays a very firm base for this kind of research.

According to Britannica [5], in the arts, modernism is a radical break with the past and the concurrent search for new forms of expression. This notion from Britannica is a true reflection of what is happening in the usage of ICTs in the documentation and publication of oral traditions. The traditional approach to oral traditions firstly saw it only being found in the lips of its speakers. Due to the effects of the first modernism, which can be traced as far back as the period of Industrial Revolution to the period of World War I, part of oral traditions became documented. This documentation meant that the traditional approach was changed. A new form of modernism now sees oral traditions being computerized. This is the stage of oral traditions which the researcher investigates. Has oral traditions in IsiNdebele really been incorporated in the modern world of ICTs or is it still facing challenges? If it is facing challenges, what are these challenges and how could they be addressed.

Mathews [6] asserts that some commentators approach modernism as an overall socially progressive trend of thought that affirms the power of human beings to create, improve and reshape their environment with the aid of practical experimentation, scientific knowledge or technology.

This assertion from Mathews affirms the connection between modernism and the application of ICTs in the documentation and publication of oral traditions. Modernism is of the promotion of socially progressive trends. It reshapes that through the usage of scientific knowledge and technology. If the ICTs are administered properly in oral traditions, it will be for the good of the society. If the researcher is able to experiment the applicability of an IsiNdebele Electronic Database, and gets a positive response, that will be for the good of the society. It will mean that the Ndebele people will now have a comprehensive computer programme that will cover a wide spectrum of their oral traditions, if not all of the needs in the knowledge of the language and social issues.

This research used both the qualitative and quantitative approaches. Data was gathered using questionnaires, interviews and practical experiments and evaluations in Bulawayo and Kezi. Kezi is a district that is situated about 100km South-West of Bulawayo in Zimbabwe.

Overview

Using ICTs in the documentation and publication of oral traditions will benefit the society in different fields.

Education is the base for all forms of human development and empowerment; therefore this research mainly dwells in the evaluation of usage of ICTs in the documentation and publication of oral traditions, with a bias towards scholars, because after all, they are the ones who use and need oral traditions more than the old people who pass them to them.

Firstly, the development of ICTs in the country was given a boost by the President of the Republic of Zimbabwe, His Excellency R.G. Mugabe through his computer donation programme. This benefited a lot of communities, especially the rural marginalised ones. This meant that the children from these communities were now presented with an opportunity to learn computers, which were viewed as a preserve of the elite back then. However, this did not happen. Computers were donated but many schools failed to utilise them because most schools did not offer computers as a compulsory subject in their curriculum. They were only offered to those who were interested. At the same time, those who were interested in learning computers were doing the subject as a private syllabus which was not examinable by The Zimbabwe Schools Examinations Council (ZIMSEC). Schools were teaching computers like private colleges. Computers were being offered like professional courses instead of being offered like normal subjects on the school’s curriculum. A good example is that of a certain high school in Lupane. The school already had a fully functional computer laboratory before the President donated more computers to the school. Computers were offered as an independent subject. Students were required to pay an independent fee, which was not covered in the school fees in order for them to learn computers. This was the norm with most schools. Computers were only being offered to those who were interested and not taken as a compulsory subject.

In such an environment, it was clear that the education system in the country did not fully support or value ICTs. This is supported by Isaacs [7] who critiques the country’s ICT policy by saying that the Zimbabwean government adopted a national ICT policy in 2005 that was informed both by a Harvard University-guided e-readiness survey. Zimbabwe has a national ICT policy which includes abstract references to ICTs in education, but does not have a dedicated specific national policy on ICTs in education.

From this assertion, it is clear that the country adopted an ICT policy in 2005 but the education department does not have its own ICT policy which stipulates how ICTs are going to be administered in schools. This made it very difficult for schools to teach computers like all the other subjects. The schools were forced to use any form of teaching methods for computers they deemed necessary. This greatly affected students as many did not benefit from the availability of computers in their schools. Up to date, students from rural communities are not conversant with computers yet computers are already available in schools. Another high school situated in Kezi benefited
from the Presidential Computer Programme more than six years ago, but from the survey this researcher made in that school, more than 90% of the students are still not computer literate. The school only hired a qualified computers teacher at the beginning of 2012. This shows how bad the situation is in rural areas when it comes to the teaching of computers. In the urban centres, the situation is nearly the same when it comes to the teaching of computers at schools.

In such a kind of an environment, the question that arises is where do the ICTs stand in the documentation and publication of oral traditions? Is it worth experimenting or the environment in this country does not support such kind of developments. There is a wide range of social elements which have been suffering due to the current position of ICTs in indigenous languages. People use phones and computers a lot these days for their research. Some of the things include indigenous knowledge systems and oral traditions. Apparently, indigenous knowledge and oral traditions are only found on a selected number of books, with Pathisa Nyathi and Amon Nyamambi being the lead authors. Then one will wonder how popular and accessible the writings of Pathisa Nyathi and Amon Nyamambi are on oral traditions and indigenous knowledge that students can easily refer to them. But when faced with an English task, they do not need to go all the way and look for books in libraries; they can easily search using internet search engines on their phones and computers for clues. For a person who is not in Zimbabwe but studying Ndebele oral traditions, then he/she will be faced with a challenge in terms of doing his or her research because oral traditions for the Ndebele people is not digitalized. Dhewa [8] supports this argument by asserting that:

With ICT, there are abundant opportunities to digitally represent and disseminate knowledge through various forms of expression — from music to photographs, voice and video — that enable indigenous narratives to spread throughout the world. Young Africans confident with ICT can bring indigenous knowledge to a wider, global community.

From this assertion, Dhewa points out the role ICT plays in the dissemination of indigenous knowledge. At the present moment, oral traditions of Zimbabweans are confined within the country’s borders, people from outside cannot access it due to the current position of ICT.

ICT development in indigenous languages is poor. To this researcher’s knowledge, there are no programmes which have been designed in ICT for languages learning unless if they are not yet published. The government launched the E-Learning drive but that will only benefit subjects being taught in other languages, it means language learning will always lag behind thereby affecting elements like oral traditions. The Herald [9] carried a story on the launch of E-Learning by the President which reads:

PRESIDENT Mugabe yesterday launched the National e-Learning Programme expected to transform the education sector through Internet learning at primary and secondary school level.

The programme, launched at Chogugudza Primary School in Goromonzi District, Mashonaland East Province, will spread to 100 more schools under the pilot project. Also known as the Presidential e-Learning Programme, it follows the success of the Presidential Computerisation Programme, which saw President Mugabe donate at least 10 computers to each secondary school. The programme, he said, was targeted at schools with electricity but will move to those that use solar energy. “We have distributed computers to many schools but these should not be like type writers. The computers should be on the Internet through the satellites installed above so that we access more information about various subjects across the world.”

In the launching of E-Learning, the President clearly stated that schools should be connected to the internet for information on various subjects across the world. At the current position, indigenous languages and oral traditions will be left out of this programme. It is the task of every Zimbabwean to ensure that Zimbabwean languages and more importantly, oral traditions do benefit from this initiative.

**IsiNdebele Electronic Encyclopaedia**

As a way of making the research practical, the researcher designed a research aid inform of an Electronic Encyclopaedia in IsiNdebele. Its code name is IsiNdebele Electronic Encyclopaedia (IEE). IEE was designed and limited to cover only three elements of the Ndebele language learning due to the scope of the study. These are Dictionary, Grammar and Proverbs. These elements were packaged and designed using the current ZIMSEC syllabus for Advanced and Ordinary level. The researcher then took IEE for evaluation to rural high schools in order to get a view point from the rural IsiNdebele learners. For the urban learners, the researcher evaluated the programme using students from various schools around Bulawayo. He also took the programme to undergraduate students studying languages at a university in order to get their input.

**Isindebele Proverbs Electronic Database (IPED)**

IsiNdebele Proverbs Electronic Database (IPED) is computer software which was designed by the researcher in partnership with Ozone Multimedia Solutions (OMS). It is an electronic encyclopaedia which was designed for IsiNdebele use. The programme was designed using
Microsoft Visual Studio 2010 and programmed using Visual Basic.Net which is one of three programming languages that are provided by Visual Studio.

IPED was designed using the current ZIMSEC Advanced and Ordinary Level Ndebele syllabus in order for it to be applicable to students of these respective levels for evaluation. However it did not cover all the components of the syllabus, it only covered Proverbs (Izaga). The programme consists of 751 proverbs and their meanings.

In order to make the search easier, IPED was made in such a way that you do not need to type the whole word you want to research about, you only type key letters and it will predict giving you all the possible solutions with those key words you have typed. You will then choose from a list which word you intended to type. When you are researching about proverbs, and you are not sure about the exact words in a proverb, you do not need to type the whole proverb, you just type in one word which is found in that proverb and the IPED will give you all the proverbs with that word and you will choose the one you wanted. For instance, in the proverb “Imbilazantabanye” (rock rabbits that dwell on the same mountain). If you are not sure about all the words in this proverb, you can type any word about the proverb which you are certain that it is there. For example, if you are certain that the word “mbila” is there, you will type it. The software will return all the proverbs with “mbila” then you will pick from the list the one you wanted. If you click on that proverb, the software will give you the meaning of it. This programme will be posted as a website, where people will be inputting proverbs which they think were left out and even developed as a downloadable application, which can be updated from time to time. IPED (under IsiNdebele Electronic Encyclopaedia) was therefore taken to various students in rural and urban schools as a research aid for a similar research programme earlier in the year. It was unveiled to them before they were asked to answer questions about the software evaluating the applicability of ICTs in isiNdebele, oral traditions included in the process.

The selection of participants in rural schools was biased towards those who were computer literate and were either doing Ndebele in Ordinary or Advanced Level. This selection was done by teachers for both classes. After the selection of the students was done, the researcher was introduced to the students so as to work with them in his research.

Before introducing the IPED to the students, the researcher firstly held a brief seminar on what ICTs were. The students were also introduced to E-Learning and Electronic Encyclopaedia. Microsoft Corporation’s Encarta was used as reference software to demonstrate E-Learning and Electronic Encyclopaedia. After that IPED was installed in computers at the schools computer laboratory. Students were then given questionnaires. Section B of the questionnaire required students to refer to IPED (incorporated in IsiNdebele Electronic Encyclopaedia). After all the questionnaires were complete, they were collected by the researcher for further data analysis and compilation.

Findings

This section looks at quantitative analysis of the information obtained through the research. This information reveals the current position of usage of ICTs in documentation and publication of oral traditions. Through the analysis of this information, the ICTs readiness in documentation and publication of oral traditions is also revealed.

ICTs Usage Readiness in Documentation

During the research on the use of ICTs in documentation and publication of oral traditions, questionnaires were used. Fifty participants were selected from each institution to take part in the research. The researcher visited eleven institutions, which translates to five hundred and fifty participants all in all. This section will provide a quantitative analysis of the information obtained.

According to the information on Chart 1, 58% of
students who learn IsiNdebele are comfortable in using computers. 32% are learning to use computers. 0% cannot use computers. This means that if oral traditions like proverbs which are used at schools a lot are to be computerised and published using ICTs, most of the students will not have a challenge.

The Research revealed that only 27% of students of Ndebele have access to computers at home. 73% do not have access to computers. This means that they rely on computers from elsewhere. This is reflected in Chart 2. According to Chart 2, 59% of students have computer access in schools. This means that if oral traditions were to be documented and published using ICTs like a computer, most students will only benefit and give out information when they are in schools only. They will not be able to take their work home because they do not have access to computers. In a scenario like this, the digital collection of oral traditions will be greatly affected.

The information on oral traditions is not obtainable using computers only. One can access online information through a cell phone. Chart 3 represents information on how many students of IsiNdebele who use oral traditions have access to cell phones. According to Chart 3, 92% of IsiNdebele learners have access to a cell phone but according to Chart 4, only 57% of these cell phones have internet service. This means that if ICTs programmes in IPED are introduced online, only 57% of students will be able to benefit and give out data in return. One will then be left to wonder what will happen to the 43% who do not have cell phones with internet service, which will

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**Chart 2.** Access to computers.

**Chart 3.** Access to cell phones.

**Chart 4.** Access to the internet through cell phones.
represent a huge number of possible information lost.

On Section B of the questionnaire, on the first task which was given to the students of finding meaning for 20 proverbs using IPED, the results are as shown in Chart 5. According to Chart 5, 73% were able to find 16-20 words. This means that a majority of IsiNdebele students will be able to find answers if they research their school work using ICT means. Only 2% will have difficulties in using ICTs in their oral traditions tasks. If you can only find meanings of 5 proverbs and below in a system with all the proverbs, it means you might fail, not because answers are not there but because you are not able to research using a computer. According to Chart 5, only a few will be faced with that challenge.

**Data Analysis**

From the data which was gathered from Ndebele learners both in urban and rural areas, ICTs seem to have a bright future in the documentation and publication of oral traditions. Students prefer learning their proverbs using computers than the current system and are of the notion that learning using a computer enhances their understanding. They also assert that learning proverbs using computers will increase the pass rate. However, it must be noted that only a few have access to computers at home. If E-learning was to be adopted, it will mean that they will only be able to access learning resources when they are at school, they cannot continue with their school work at home. The overall assessment of the results however suggests that documentation and publication of oral traditions has a very bright future in ICTs.

From the research in rural high schools, the researcher established that most rural students are not computer literate thereby hindering all forms of documentation and publication of oral traditions using ICTs. The Presidential computer programme has not been fully utilised. Computers are not done as a compulsory subject, they are only offered to those who are interested. The research also established that the majority of the students do not even know what an encyclopaedia is, worst still, an electronic encyclopaedia. The research also established that students do not know that a mobile phone can be used for school research. It was a new phenomenon to them to learn that they could use their mobile phones to research for their school tasks. However, as soon as they learnt this, they quickly adopted this newly found knowledge and put it to use. This was a clear sign that for some students, the problem is not lack of resources but just ignorance. Internet coverage to some of the rural centres is not benefiting students academically; they only know that internet can only be used for social networking. If the environment enables and oral traditions are computerised, this will be a preserve of the few selected individuals in such communities. Information will only be retrieved by a few selected individuals. The most worrying factor is that, those communities are the ones who are rich in oral traditions. If a website to gather information is launched, it means information from them will not be captured, it will only be captured through the traditional systems which we intend to run away from.

The rural electrification programme is also greatly affecting the development of ICTS in rural areas. Some students who were interviewed blame lack of electricity for their non-participation in usages of ICTs. Most of the households in rural areas have family members who have a steady income. They can afford to buy second hand computers and send them home for their young brothers and sisters, but due to the fact that there is no electricity, they are discouraged. The survey also revealed that even in those parts of the rural areas that
are now electrified, that electricity is not benefiting everyone; it is mainly targeting service centres. There are stringent requirements that are set by the Rural Electrification Agency (REA). As a result, most households are left out in the electrification programme as it remains out of reach for them. Individual households interviewed in the area alluded to the fact that, when they applied for their homesteads to be electrified, they were told to pay huge sums of money so that REA can go and purchase poles and wire to draw electricity from the service centre. The issue of electricity is therefore affecting documentation and publication of oral traditions using ICTs.

Availability of computers in rural schools is also a problem. Most rural schools, rely on the 10 computers which the President donated to them. In the case of a certain high school that also took part in this research, there are only five. This means that 700 students in that school have to share five computers. This translates to a ratio of 140:1. According to Intel Corporation, the accepted international student to computer ratio is 25:1. For a school with 700 students there should be at least 28 computers. In such kind of a scenario, most students do not get adequate time on the computers which, therefore affects their computer skills and later, their ability to use ICTs. All the students who participated in the survey revealed that they rely on the school computers for all of their computer needs. They do not have computer access from any place outside school. Socio-economic conditions of rural Matabeleland are also blamed on the lack of computers in the schools. The research revealed that parents are struggling to pay school fees. A certain percentage of school fees money is used to purchase computers. Some students revealed that their parents should understand their plight and pay school fees so that computers can be bought. Parents need to be concietised on the importance of paying school fees and maybe, computer levies as it seems to be a factor affecting the growth of ICTs in indigenous languages therefore affecting the possibility of using ICTs in the documentation and publication of oral traditions.

Despite the setback of inadequate computers, IEE (incorporating IPED) was well accepted in these rural schools. The response which was exhibited by students was more than satisfactory. Students revealed that using computers for their Ndebele learning makes it easier and is very exciting. Immediately after the students were introduced to IEE, they showed lot of interest. Most of them started using IPED for their IsiNdebele proverbs tasks showing how important ICTs will be useful in the documentation of oral traditions. What was a revelation was that, students noticed errors in some of the proverbs and noticed that some were missing. If the website is launched as a matter of urgency, people will input all the proverbs which authors and researchers fail to capture, thereby further proving the importance of using ICTs in the documentation of oral traditions.

The research also revealed that students found it understandable and exciting to read proverbs from IEE and IPED instead of the current conventional method of textbooks. They are of the notion that using computers for their Ndebele learning will greatly increase the pass rate. The negative factor which came out is that some of the students are very slow computer learners thereby becoming a hindering factor in the application of ICTs in the documentation and publication of oral traditions.

**Bulawayo**

The research gathered information from students from different high schools and private colleges around the city. These schools are situated in different locations in Bulawayo and were selected as a way of trying to gather information from different social classes that may be found in any African urban set up.

Most students are exposed to the internet and they have used the internet to research on their various academic endeavours and subjects but not IsiNdebele or any other indigenous language. This can be attributed to that there are no online resources for them to refer to, so the solution becomes using the conventional method of textbooks when it comes to their Ndebele language learning, including oral traditions like proverbs. The positive which came out of this research is that most of the students in Bulawayo are exposed to computers regardless of the societal group they belong to. Those who do not have computers at home usually rely on close friends, family members or internet cafes for all of their computing needs. Another positive is that most of the students interviewed are quite conversant with using computers which is an advantage in the use of ICTs in documentation and publication of oral traditions. The challenge which was pointed out by most of them is the availability of computers at schools. Computers in their schools are very few. At the end of the day, they had to rely on their own computers at home for academic purposes and these computers can only be accessible after school. One will then be left to wonder what they do when there is an urgent need for a computer before schools dismiss.

Their response to IPED which is incorporated in IEE was very positive. They did not have challenges in using the programmes as they said it was easy to use. The main challenge which most of the students pointed out was that there should be more ICT packages for Indigenous languages. Most said it was exciting and understandable to learn IsiNdebele using computers. They are also of the notion that if E-Learning was adopted for IsiNdebele, the pass rate will go up. If students are this much interested in learning their indigenous languages using ICTs, why deny them that opportunity by not making materials like oral traditions which they use a lot academically on computers and other forms of ICTs? Why not document and publish oral
traditions using ICTs for the benefit of all societal groups?

In tasks which were to be completed by students as part of evaluation of IPED, most students in Bulawayo did not have a problem with completing their tasks.

**University Students**

IPED was taken to the department of languages in a local university for further evaluation by undergraduate students. The research revealed that a lot has to be done on IPED. They are of the notion that IPED should not only be limited in publication of ICTs, but it can also be used as a medium for capturing all the oral traditions. They are of the notion that this can be made possible through publishing the software online, giving its users a section where they can be able to input more data to the online data base.

In concluding this section, IPED was designed and introduced to various Ndebele students in rural and urban centres as a research aid. This research has unearthed positive and negative elements on the usage of ICTs in documentation and publication of oral traditions. From the research, students revealed that they are very much interested in accessing oral traditions using computers and computerised gadgets, as compared to the current system of textbooks. In Romania after E-Learning was introduced, students responded in a very positive way. Nicolae Mayor of Axintele Romania cited in Intel Corporation [10] asserts that:

> Since computers were introduced, students actually wanted to come to school even during summer vacation. It is clear this is benefiting the whole community, both students and teachers."

This notion shows how much students enjoy using computers. If a website or email address is availed to them to submit all forms of oral traditions they know, the researcher believes that the response will be overwhelming. The major challenge which was noted is in the availability of computers. Internationally, the approved student to computer ratio is 25:1 but in Zimbabwean schools, this has not been the norm. Lack of power in the country has been a great negative factor which can greatly affect in the usage of ICTs in documentation and publication of oral traditions.

**Looking Forward**

**Conclusions and Recommendations**

The research has revealed that ICTs can be used for the documentation and publication of oral traditions and they are user friendly. If there are computer programmes for documentation and publication of oral traditions, the Ndebele speakers will be able to use them to give information and retrieve it. The development of ICTs in indigenous languages has been let down by the lack of qualified personnel in the field of computational linguistics. If Zimbabwean Universities can offer a degree in computational linguistics, this problem will be partly solved. After the qualified personnel in computational linguistics have been trained, the government has to come up with legislation and policies which will support the development of ICTs in indigenous languages, benefitting oral traditions in the process. The ICT Policy of the country is already there but it needs to be reviewed so as to promote the use of ICTs in indigenous languages. This promotion can be achieved also through the Government sponsorship of development of ICTs programmes for the promotion and data capturing of oral traditions.

The Ministry of Education, Sports, Arts and Culture must make computers a compulsory subject at schools. Due to the current state whereby computers are offered as an optional subject, many students may not benefit fully from the ICTs that might be there. If IEE and IPED were to be further pursued, it will only benefit a few individuals who are computer literate. One would then have to wonder what will happen to those who are not computer literate. Therefore there is an urgent need for the ministry to address the issue of teaching of computers at schools. Due to the current scenario at schools where-by computers are only offered as an optional subject, schools have failed to make the students benefit from the computer resources which the president donated to them. People will then wonder why these computers were donated when schools are still producing computer illiterate students. The answer lies within the ministry which should formulate policies in teaching of computers that will be adopted by all schools.

The issue on lack of electricity in rural areas has to be addressed also. REA has done a wonderful job in laying electric cables to these centres; but that electricity only benefits the business community who are situated in the rural service centres. This exercise should be extended to homesteads. Most people in rural areas have family members who have a steady income and are willing to buy computers for them but they are discouraged by the fact that there is no electricity. If homesteads are electrified, there will be a definite change in the usage of ICTs in rural areas. All stakeholders involved in the production and distribution of electricity should work together for the benefit of everyone.

The schools should complement the Presidential computer programme by trying to secure more computers in schools. The student/computer ratio can only be reduced through the intervention by schools. The President laid the foundation for them. This cannot be achieved by schools without the help of the owners of the schools who are the parents. Like what one student said during the research, parents should play their part by paying school fees so that schools can afford to buy new computers. If schools can charge exorbitant levies to buy
expensive things like buses, why are they not doing the same for computers? If computer to student ratio is improved, that will be a positive development to applicability of ICTs in learning in the process greatly helping in the documentation and publication of oral traditions. It will mean that students will be computer literate and able to use ICTs packages for the documentation and publication of oral traditions.

Free internet web hosting or paid web hosting can greatly help in the documentation of oral traditions. The researcher suggests that a website on oral traditions should be designed as a matter of urgency and be equipped with a column where people can input any data which they feel was left out or not well presented. This will greatly help a lot in the documentation of oral traditions. Another easier option will be to open an email address and be publicised so that the community can send any material on oral traditions for documentation.

In October 2012, all libraries in Zimbabwe’s universities held an open access week. The major theme that characterised that week had to do with making information easily accessible. The world is moving towards a scenario where information is made easily accessible and usable by the people. If oral traditions are digitalised and also made available online (just like online dictionaries) they will become more accessible and more usable. Today’s generation of people is one that needs to have a ‘one stop shop’ for everything. They need to have everything contained in one gadget, which may be a phone, laptop or tablet. The production of IPED is proof that this can be done and posted online.

In conclusion, all the systems in the world are now nearly computerised, documentation of oral traditions should not run away from this fact. They must try by all means possible not to be left out from the world of technology, computer age. This can be achieved firstly by educating their people on computers. This education can be done through development of computer programmes for indigenous language learning which incorporates oral traditions. Cultural traditions and norms can also be preserved and promoted through the use of Electronic Encyclopaedias in IsiNdebele. Study has shown that IsiNdebele is applicable in ICTs; there is a need to further develop it through production of ICTs for it.

**Abbreviations**

IEE - IsiNdebele Electronic Encyclopaedia  
IPED – IsiNdebele Proverbs Electronic Database  
ICTs – Information Communication Technologies  
REA – Rural Electrification Agency  
ZIMSEC – Zimbabwe School Examination Council

**REFERENCES**


**Bibliography**

