

## **DEVELOPING EFFECTIVE LEARNING MATERIAL TO STUDENTS WITH HEARING IMPAIRMENT (HI) THROUGH ODL IN ZIMBABWE**

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### **ABSTRACT**

Students with Hearing Impairment (HI) are experiencing learning problems in most institutions of Higher Learning in Zimbabwe. Access to colleges and universities is limited and where they are accepted, there are no facilities to cater for their needs, hence there is need to develop learning materials that enable these students to learn effectively through Open Distance Learning(ODL) especially with Zimbabwe Open University(ZOU). The few Hard of hearing students enrolled at Zimbabwe Open University and other Institutions of Higher learning have expressed difficulties in coping with their studies partly due to the fact that the learning materials used are tailor made for the mainstream form of education. The research will use a descriptive survey method to extract information from students with HI and find ways and solutions on how to develop effective learning materials through ODL in Zimbabwe. Questionnaires and Interviews of students with HI, and lecturers /teachers will be used to collect data.

Introduction and background to the study

Promoting the development of a knowledge society through open and distance education is one of the tactics increasingly adopted in recent times by institutions of Higher Learning in Zimbabwe. Distance education, also called open or distance learning, is a form of education in which there is normally a separation between teachers and learners. Thus, it incorporates the printed and written word, the telephone, computer conferencing or teleconferencing to bridge the physical gap between the instructor and the learner. Distance education provides educational opportunities to those who otherwise would have been denied.

Researchers (Howell, Williams & Lindsay, 2003) have shown that open distance education programs in particular are growing in importance as centres for the development of knowledge specifically for students with Hearing Impairment.

According to Brundage, Keane, and Mackneson (1993) adult students (including students with Hearing impairment) and their instructors must face and overcome a number of challenges before learning takes place including:

- becoming and staying responsible for themselves;
- "owning" their strengths,
- desires,
- skills, and needs;
- maintaining and increasing self-esteem;
- relating to others;
- clarifying what is learned;
- redefining what legitimate knowledge is; and
- dealing with content.

The term "hearing impairment" refers to functional hearing loss that ranges from mild to profound. Often, people who have no functional hearing refer to themselves as "Deaf."

Those with milder hearing loss refer to themselves as "Hard of hearing." Accommodations for students with hearing impairments can be classified as visual and aural. Visual accommodations rely on a person's sight; aural accommodations rely on a person's hearing abilities. Examples of visual accommodation include sign language interpreters, lip reading, and captioning. Examples of aural accommodations include amplification devices such as FM systems. Hard of hearing students may hear only specific frequencies or sounds within a certain volume range. They may rely heavily upon hearing aids and lip reading. Some students who are hard of hearing may never learn, or only occasionally use, sign language.

A student who is hard of hearing may have speech impairment due to the inability to hear his own voice clearly. Hearing impairments can affect students in several ways. They may have difficulty following lectures in large halls, particularly if the acoustics cause echoes or if the speaker talks quietly, rapidly, or unclearly. People who have hearing impairments may find it difficult to simultaneously watch demonstrations and follow verbal descriptions, particularly if they are watching a sign language interpreter, a captioning screen, or a speaker's lips. In-class discussions may also be difficult to follow or participate in, particularly if the discussion is fast-paced and unmoderated, since there is often lag time between a speaker's comments and interpretation.

Students who are hard of hearing may use hearing aids. Students who use hearing aids will likely benefit from amplification in other forms such as assistive compatible telephones, personal neck loops, and audio induction loop assistive listening systems. Some students use an FM amplification system that requires the instructor to wear a small microphone to transmit amplified sound to the student; this accommodation may also be used in small group discussions with the microphone handed from speaker to speaker.

A student who is deaf may have little or no speech depending on the severity of the hearing loss and the age of onset. She will often communicate through a sign language interpreter. Other students may use manual English (or signed English), which is sign language in English word order. A certified interpreter is used for translation into either language. A student who is deaf may also benefit from real-time captioning, where spoken text is typed and projected onto a screen. It is important to remember that a student who is using an interpreter, who is lip reading, or who is reading real-time captioning cannot simultaneously look down at written materials or take notes. Describing written or projected text is therefore helpful to this student. Handouts that can be read before or after class are useful but can create challenges when referred to during the class session.

The number of Deaf and hard of hearing impaired students entering higher education institutions such as ZOU in Zimbabwe are slowly increasing. This increase is in response to demands made by the government and the constitutional obligation to increase access to the education system. In order to accommodate a diversity of learning needs through addressing barriers to learning, education institutions are required by the government to provide education support services to learners.

Higher education institutions like the Zimbabwe Open University who offers their tuition through Open Distance learning need to develop learning materials for their ODL programmes that support the needs of Hearing impaired students.

Currently there are few deaf and hard of hearing students that have enrolled for higher education degree programmes with the Zimbabwe Open University and these few students have expressed difficulties in coping with their studies partly due to the fact that the learning materials used are tailor made for the mainstream form of education. Deaf and hard of hearing students are disadvantaged in education by the lack of learning materials that meet their academic needs.

This is a barrier to Deaf students entry into mainstream higher education institutions because instead of being included, Deaf and hard of hearing students are excluded from the mainstream education system. In cases where they managed to enter higher education, they experience academic and social difficulties hence there is need to develop learning materials that enable these students to learn effectively through Open Distance Learning. The Module is the main learning material provided by ZOU for open distance education and it caters for the needs of inclusive form of education. As print media, the module has the advantage of being synchronous (real time and real place) as well as being asynchronous in both time and place (Lynch and Dembo, 2004).

In the absence of computers and other telecommunication media, the students can carry the module home and information is relatively reliable and tailored to the needs of the learner because it has been written by experts. Some of these experts present learning materials or modules that are biased towards the hearing students and do not have expertise in the provision of special needs education for the deaf and hard of hearing learners. This creates problems for the deaf and hard of hearing students who have enrolled for degree programmes at ZOU. The modules as a mode of instruction for ODL are made to meet the needs of the majority of the students. The deaf have their own culture and this is not infused in the illustrations and examples given in the text. Some examples given actually promote discrimination and stigmatisation among the students at ZOU. Hence there is need to develop and improve these modules so that they become user friendly to the deaf and hard of hearing students enrolled at ZOU.

Face to face and tutorials are the other ways used by ZOU to facilitate ODL. These tutorials are important in distance education as they provide interaction between tutor and students. However the deaf and hard of hearing experience challenges in such circumstances. The hearing students find it difficult to interact with deaf students through sign language. The tutors are also illiterate in sign language and no ODL professionals will facilitate such face to face sessions. Hence there is need to improve and develop the learning environment and material for the Hearing impaired students at ZOU.

Deaf students in particular should be provided with support services like sign language interpreters, tape recorders and learning materials developed to meet their academic needs. However, the social and academic experiences of the Deaf and hard of hearing students, are not explored in order to determine the effectiveness of these services in terms of equal epistemological access to education.

The use of CD's as a way of information dissemination for open distance learning is a noble one but only to students who are computer literate. The students also face challenges mainly because the majority of them stay in rural areas, and do not have computers and let alone electricity.

ZOU has introduced ZOU ONLINE as one of the forms of e-learning strategy to help the students with Hearing impairment. E-learning refers to the use of internet technologies that deliver a broad array of solutions that enhance knowledge and performance (Rosenberg, 2001; Marcal and Caetano, 2010).

Thus e-learning has demonstrated its potential by overcoming several limitations associated with conventional face-to-face instruction such as high costs and schedule inflexibility (Bersin, 2004; in Marcal and Caetano, 2010) as well as geographical barriers (Juutinen et al, 2010).

E-learning facility benefits the hearing student most. It is interactive in nature as it allows the students to interact through the activities given in the text. The lecturers who prepare these texts do not have the skills to prepare the learning materials needed to meet the needs of the hearing impaired students and this creates problems for the students with HI.

Deaf people identify themselves differently; there are those who use the uppercase Deaf, and see themselves as members of the Deaf community. They have a degree of audiological deafness and exhibit attitudinal cohesion linguistically, politically and socially with other Deaf people (Baker and Cokely, 1980). The other group is the oral deaf who use speech and hearing aids.

## **THE STATEMENT OF THE PROBLEM**

Prospective Deaf and hard of hearing higher education institution students encounter problems when they want to enrol, write assignments and examinations at the universities and this may be partly due to lack of learning materials that meet their academic needs. In cases where they managed to enter higher education, they experience academic and social difficulties hence there is need to develop learning materials that enable these students to learn effectively through Open Distance Learning.

### **Purpose of the study**

The aim of this study is to provide an in-depth exploration of how the learning materials of Deaf and hard of hearing students could be developed and assist them to achieve their full potential in the institutions of higher learning. A secondary aim is to find out what access policies and support services are in place in institutions of higher learning in an effort to make ODL programmes more accessible to Deaf and hard of hearing students. The provision of the support service has a significant impact on Deaf and hard of hearing students in terms of equitable access and success in learning institutions.

The experiences of Deaf students with regard to support services in higher education is a complex phenomenon and little research has been conducted in this regard (Brown & Foster, 1991; Liversidge, 2003). The exploration of how the learning materials of Deaf and hard of hearing students could be developed at the Zimbabwe Open University and other institutions of higher learning, in this study, is therefore significant, as it fills the gap in the research.

## **RESEARCH QUESTIONS**

The study was guided by the following research questions:

- **What Challenges do persons with hearing impairment face on learning through ODL in institutions of higher learning?**
- **How should the learning materials for the Hearing Impaired students studying through ODL be developed in order to meet their academic needs in institutions of higher learning in Zimbabwe?**

## **METHODOLOGY**

The study was a qualitative case study, this approach was used because it enabled the researcher to obtain and interpret informants' meaning and experiences in their natural setting. According to Denzin and Lincoln, (2000), the qualitative approach helps the researcher to study a phenomenon in its natural setting and attempt to make sense of it, or to interpret a phenomenon in terms of the meaning people bring to it.

Descriptive survey was conducted to investigate ZOU staff and Hard of hearing students' views on the need to develop the learning material that help them to effectively understand their ODL courses. The survey design was preferred because it is the most appropriate design where perceptions of participants are sought (Neuman2000).

Surveys are descriptive and explanatory and have the advantage of allowing the use of a sample to generalize the results. Leedy (1997), points that descriptive survey design is one of the most effective ways of conducting research. A survey was made taking the views, opinions and impressions of ZOU staff and students on issues to do with registration, study materials, course outlines, modules, assignments, tutorial letters and attending face-to-face tutorials. Structured questionnaires were administered to a sample of 7 programme coordinators and lecturers and 6 hard of hearing students. Convenient sampling was preferred because the researcher chose to use subjects that were easily available (Siegle, 2002). Thus, the researcher took advantage of the few hard of hearing students and the programme coordinators for ZOU Bulawayo Region who were could easily be accessed by the researcher. The questionnaire looked at how the learning materials for the Hearing Impaired students studying through ODL should be developed in order to meet their academic needs in institutions of higher learning in Zimbabwe.

### **Data Collection Procedures**

The researchers personally handed the questionnaires to the ZOU staff. Students collected their questionnaires from the researcher and completed the questionnaires at the regional office on the same day.

## **FINDINGS**

This part presents findings of the study and their analysis. The findings showed that Deaf and hard of hearing students have a different educational experience from their hearing peers in a mainstream higher education environment. The examination of inclusive education in particular revealed that the use of modules and e-learning with regard to Deaf and hard of hearing students at the Zimbabwe Open exposed more disadvantages than advantages.

The modules as a mode of instruction in ODL are made to meet the needs of the majority of the students. The deaf have their own culture and this is not infused in the illustrations and examples given in the text. Some examples given actually promote discrimination and stigmatisation among the students at ZOU. In addition, to some extent the language used in the modules may not be simplified to the understanding of the deaf and hard of hearing students. According to Mutsvanga et al (2007) the hearing impaired students' literacy and numeracy performance falls well below levels achieved by their hearing peers.

**ZOU hearing impaired students and programme coordinators use the face to face and tutoring as tools for Open distance Learning. This creates challenges for the deaf and hard of hearing students enrolled at Zimbabwe Open University.**

**For the deaf, the face to face mode of learning at ZOU creates an inclusive setting. This calls for bilingual education. Bilingual education for the deaf students entails using a sign language and spoken, written language of the hearing community.**

**Zimbabwe Sign language is the language used by most HI students but it's not nationally understood by the hearing community and in terms of interactions in study groups the deaf students fail to freely discuss with hearing students. Assignments become difficult for them to answer on their own. In addition the tutors are not literate in sign language and it becomes more difficult for the HI student to get the required assistance.**

**The quality of interpreting services greatly impacts access to linguistic, cognitive, cultural, social-emotional, and academic development. Interpreting services provide access to all aspects of the student's educational life at ZOU.**

**However interpretation services for the students are limited as very few of the university staff is able to provide them yet the student's readiness to function in an academic environment through interpreting services is essential. For the Deaf and hard of hearing learners in ZOU, learning takes place in a language that is not their own, for example, in spoken English. This kind of learning is inaccessible and thus a barrier to learning. For Deaf and hard of hearing students being placed in such an environment is even less appropriate than it is for hearing people because Deaf learners cannot have access to information in a spoken language as they cannot hear the spoken languages.**

**The insufficient Internet infrastructure mentioned by the interviewees supports the need to improve the Internet connectivity since ODL is propelled by the use of ICT. UNESCO (2002) asserts that application of the Internet in education is understood as the use of various Internet-technologies for the solution of various educational tasks, namely, teaching, learning and management of the educational process.**

**It is also argued that uses of the Internet creates space as well as strengthens it. However, Zimbabwean ODL will not fully utilise the needs of the deaf and hard of hearing due to lack of satisfactory internet infrastructure**

**Shortage of ODL skilled practitioners is a cause for concern as it compromises the quality of ODL programmes of Zimbabwe Open University. Zimbabwe does not have a university or college that develops ODL practitioners at any level. Although ZOU is ODL institution, it does not offer degrees, diplomas or certificates in ODL pedagogy and philosophy.**

**The problem of shortage of skilled ODL practitioners was echoed by Machawira (2009) in a baseline study of Zimbabwe higher education systems. The ODL practitioners, if fully utilised can effectively facilitate the development of learning materials such as modules tailor made to meet the needs of learners with special needs. The shortage of skilled ODL practitioners is also a problem in the Southern Africa Development Community (SADC). The SADC secretariat launched ODL Project in 2007, which is specifically for capacity development in ODL. Students complained about the lack of electricity and the difficult and cost involved when downloading the material from the software into print. One big message was that if ODL was for all people regardless of where they are and times they need to study, then the use of CD's needed re-examining. Students were reconfirming sentiments expressed as far back as 2008 when Chadamoyo, Chabaya, and Chiome (2008 unpublished) found out that CD's were not user friendly to most students because of lack of computers and electricity.**

**This means the status they were then is still the same today. Most of the deaf and hard of hearing students are computer illiterate and the use of CDs create another serious problem for students for them in terms reading material.**

## **CONCLUSIONS**

**The researchers made the following conclusions from the findings:**

- **Deaf and hard of hearing students have a different educational experience from their hearing peers in a mainstream higher education environment hence there is need to produce learning materials e.g. modules that cater for the individuals differences especially for the Hearing impaired.**
- **The modules as a mode of instruction in ODL at Zimbabwe Open University are made to meet the needs of the majority of the students. The deaf have their own culture which has been discriminated against and this deaf culture has not been infused in the illustrations and examples given in the text of the module. The language used in the modules is not simplified to the understanding of the deaf and hard of hearing students.**
- **The face to face and tutoring as tools for Open distance Learning create challenges for the deaf and hard of hearing students enrolled at Zimbabwe Open University. For the deaf, the face to face mode of learning at ZOU creates an inclusive form of education. This calls for bilingual education. Bilingual education for the deaf students entails using a sign language and spoken/written language of the hearing community. Zimbabwe Sign language is the language used by most HI students but it's not nationally understood by the hearing community and in terms of interactions in study groups the deaf students fail to freely discuss with hearing students. Assignments become difficult for them to answer on their own.**
- **There is shortage of ODL skilled practitioners in the institutions of higher learning. The ODL practitioners, if fully utilised can effectively facilitate the development of learning materials such as modules tailor made to meet the needs of learners with special needs.**
- **Most of the deaf and hard of hearing students are computer illiterate and the use of CDs create another serious problem for students for them in terms reading material.**

## **RECOMMENDATIONS**

**The researchers made the following recommendations:**

- **It is important that schools prepare deaf and hard of hearing students adequately for higher education. However, there is no guarantee that Deaf and hard of hearing students will have positive academic and social experiences in higher education institutions.**
- **The modules should be developed in such a way that they cater for the needs of the deaf and hard of hearing and that the Hearing impaired are able to develop their full potential in Open Distance learning. The language used in these modules should be simplified to the understanding of the deaf and hard of hearing students.**

- Zimbabwe Open University should initiate short courses in sign language for its staff and other members of the society with the hope to initiate national signing and to help society acknowledge it as the first language of the deaf. This will also help in the tutorials of the students and the lecturers.

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