Pictorial Illustration Challenges in Texts Faced by Visually Impaired Students at the University of Limpopo: A Social Model of Disability Theory

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Abstract
Access to relevant information particularly to Visually Impaired (VI) students learning English language has long been fundamental issue underpinning effective English language learning in higher education. The need to provide effective and adequate assistance to this category of students cannot be over emphasised. However, support and provision of adequate and relevant technological resources is often overlooked when prioritising student success. This paper explains challenges associated with VI students learning English language through texts that contain pictorial illustrations in a South African (SA) university context. The study adopted a qualitative exploratory research design to find and identify challenges faced by VI students when dealing with pictorial illustrations in texts, teaching and learning materials in English courses. Data was gathered from ten VI students who were doing English language courses at the University of Limpopo in Limpopo province, South Africa and five English language lecturers who taught VI students English language courses in the Department of Languages at the University of Limpopo in South Africa. In addition, two BraiIlists responsible for compiling braille learning materials at the Reakgona Disability Centre (RDC) at the University Of Limpopo in South Africa also provided data. The study used telephone interviews with the participants and as well as focus group conversations and hanging out approaches to gather data. This study is grounded on the (Social Model of Disability Theory) SMDT by Oliver (2013).The findings highlight a number of challenges related to pictorial illustrations in texts that VI students. The study found that students who use JAWS and Braille find it difficult to access information contained in a pictorial illustration. The study also found that some lecturers are not trained to explain pictorial illustrations to VI students. A surprising results is that the university Teaching and Learning policy is silent on how abled lecturers should lecture to VI students. The paper contributes to understanding the challenges VI students face when they learn English language. Universities are encouraged to strengthen academic staff development through initiatives that support lecturers in how to deal with teaching materials that contain pictorial illustrations. Technological advanced equipment's should also be made available to VI students.

Keywords: Brallists; Visually Impaired; Higher Education, Learning; Social Model of Disability; Reakgona Disability Centre

Introduction

There is an increasing number of visually impaired students in public Universities and these students attend mainstream lectures (inclusive education) and are examined on the same subject content with their peers (Otyola, Kibanja and Mugagga (2017:75).However, constraining limitations in the methods of instruction and assessment used and the instructional materials provided are still very much prevalent. For example, there are still a lot of teaching materials that contain pictorial illustrations that Visual Impaired (VI) students are subjected to in various lecture halls. In addition, 'it is undeniable that the majority of the teachers is not informed about the needs of VILs' (Kocyigit and Artar, 2015:690). Kocyigit et al (ibid) further maintain that these teachers do not vary the tasks and activities in a way to meet the needs of VILs and these learners fail to make the most of their learning experience.

The above mentioned problem seem to emanate from lack of awareness and understanding of individual learner differences in the area of lecturing and learning in different higher education institutions in South Africa (Bilal, 2017:16). This kind of a problem is viewed pejoratively by most VI students.

Furthermore, the UNESCO Bulletin on special education of 1994 observed that the blind and partially sighted children have greater problems in learning… and this is because children do not receive adequate educational help (c.f. Otyola, Kibanja and Mugagga :2017). In addition, Harmer (2007) maintain that "*the moment we realize that a class is composed of individuals (rather than some kind of unified whole), we have to start thinking about how to respond to these solutions individually so that while we may frequently teach the group as a whole, we will also, in different ways, pay attention to the different identities we are faced with*". According to Kocyigit and Artar (2015:689) 'this approach proves to be sensible since the learning experience of each learner in the classroom as an individual is highly likely to be shaped by their own learner characteristics'.

Presently, there are concerns and call for fair and accessible materials for lecturing and learning using materials with well-explained and described pictorial illustrations in English in different categories in various courses in higher institutions (c.f. Basal,Celen, Kaya and Boğaz 2016). Pictorial illustrations are a serious problems in most instructional materials sometimes even 'abled' students struggle in making meaning out of them. This quagmire puts VI students in a precarious situation and has the potential to affect their academic performance. This above assertion implies that a serious attention should be given to this matter. In response to the challenge of pictorials in texts experienced by VI students, this article sought to explore the perceptions and experiences of VI students learning English at a university in Limpopo Province, South Africa with the aim of identifying and analysing these challenges so that they can be adequately addressed. In an attempt to achieve this aim, the study formulated two research objectives, namely:

- To explore, identify and probe challenges faced by VI students when dealing with pictorials in English learning lectures as perceived by them.
- To explore the challenges faced by Braillists when brailling texts with pictorial illustrations.

The researchers strongly believe that the above mentioned aims will help other scholars in shaping further related research so that an-in-depth understanding regarding the challenges that VI students face in some of the lecture halls of SA higher institutions. Like with other scholars, the researchers in this study believe that 'being visually impaired does not mean being unsuccessful language learners' (c.f. Baúaran , 2012).

Literature Review

1.1 The Library and Blind students: The South African context

In SA there is a Library for the Blind commonly known as SALB and it operates SA constitution. The legislation that governs the operations of this Library is the South African Library for the Blind Act 91 of 1998. This legislation is very clear when it comes to the mandate of this institution. This institution is a Non-Profit organisation and it

located in Eastern Cape Province in a town called Grahamstown currently known as Makhanda. Among some of the things that it does, is to provide free services (i.e free delivery of audio and Braille reading materials to member's homes). South African students including some of the ones included in this study as research subjects sometimes get help from this institution and that is why it is necessary to have a brief overview of this institution and what it does.

Recently, this institution has extended their services with a mini library programme which was launched at selected public libraries across South Africa (i.e by extending their resources and making walk-in reading materials available to the blind and visually impaired).

There are two different types of these Mini-Libraries and they are briefly described below:

1. Agent Mini-library which does not have a dedicated space and advanced assistive devices but the basic equipment that contains a victor reader, Braille audio and tactile books.
2. Comprehensive Mini-library which requires a dedicated space and contains advanced assistive devices like a computer, hardware and computer based software designed for print handicapped users. Additional devices include a document reader, victor reader for audio books, tactile, Braille and audio book formats.

These mini-libraries are located in 120 local municipality libraries in SA. These are found in the following provinces of SA:

- Eastern Cape (29)
- KwaZulu Natal (17)
- Western Cape (14)
- Gauteng (33)
- Free State (8)
- Northern Cape (9)
- North West (4)
- Mpumalanga (6)

- Limpopo (2)

The second category of these mini-library is a actually a microcosm of the type of the Library for the Blind that is needed in institutions like the one investigated in this study. Though the university of Limpopo has a Centre (known as Reakgona Disability Centre) that helps students with special needs like the VI students, the Centre is not adequately resourced and many other assistive devices that could help these students are still not there in the Centre and that is the reason why the researchers briefly discussed the about issue of SALB as a way of showing that in SA there is an institution that could serve as an example for institutions of higher learning as far as the resources they can provide to VI students.

2.2 Studies on Challenges faced by VI Students in Institutions of Higher Learning (IHL)

There are various studies that have been conducted regarding VI students across the globe and a few of them will be reviewed in the below section. However, before we can do that, it is of paramount importance to firstly try to understand the concept visual-impairment. According to Mangal (2007) visual-impairment in an "educational environment emphasizes relationship between vision and learning and shows difficulties, and deficiencies exhibited in the children, which make them different from children with normal vision to the extent of attention, requiring special education provision."

Many studies with VI students focused on many other things except for language learning. Thus, there is a paucity of such literature focusing on VI students learning English language. For example, Hodges and Keller (1999) study focused on recognizing the extent to which students perceive the process of inclusion of handicapped students in the university, the study by Hougann (1987) aimed at identifying the challenges faced by visually handicapped students in higher education institutions focusing things such as the absence of counselling services, few Braille printed books, lack of visual readers and teachers' neglect of their special needs. Fuller et al. (2004) study focused on obstacles such as the fast rate of the teachers' speech during the lectures. In addition, the study by Ibrahim (2001) focused on problems such as using the library and difficulties in teachers' understanding about their needs.

In her study, Matshidiso (2007) like the above discussed studies, found that one of the difficult issues in higher education is redressing unequal access to teaching and learning between VI students as compared to abled students. This 'unequal access' also articulates to the issue of providing adequate assistance to VI students as far as adequately accessible Teaching and Learning materials are concerned.

Amatobi & Amatobi (2013) state that presentations are one of the challenges in learning the English language. VI students learning English suffer a lot when a text contains a lot of pictorials.

In addition to the above mentioned studies, Hossain (2013) also found that teaching and learning engineering courses is a difficult for VI students because different topics provide drawings and illustrations. VI students who English is not their mother tongue are faced with a 'double barrel' problem because they need to learn the language and as well as access what the pictorial illustrations are discussing or showing and this is a serious problem to these students.

Braille is defined as small cells of dots used to read and write by VI people (Hertzberg & Stough, 2007 in reading and writing using this format needs hands touches. This type of 'writing' does not address the issue of pictorials in a text. Therefore, VI students because most of them rely on this type of 'writing' are cannot access the information contained in the pictorials.

It is clear from the above number of studies discussed above that studies on VI students predominantly focused on various other important matters with regards to higher education learning and education of VI students in general. However, the seem to be a paucity of literature focusing on VI students learning a language particularly students from disadvantaged background learning a language like English. This is among other things, the reason why this study was embarked upon because in SA, all most all the institutions of higher learning use English as LOLT (Language of Learning and Teaching) but VI students are not assisted enough to access this language.

Theoretical Framework

Morelle (2016) maintains that theories in research are developed to ground and support studies in different fields. Now in this study, Oliver's (2013) Social Model of Disability Theory (SMDT) provides a useful lens and analytical framework to examine and identify the challenges faced by VI students learning in institutions of higher learning in general. However, in this study, this model is with specific reference to VI students learning English language. Oliver's (ibid) theory allows us to see the broader institutional and external factors that impact on the adequate learning of English by VI students. This Social Model of Disability Theory focuses among other things on the bidirectional interaction between person, environment, people, objects and objects and how all these come together to create a hindrance. In other words, the SMDT looks at how individual people living with disabilities may be protected from abled people's exclusions in particular situations in terms of their needs in different settings (Oliver, 2013: 65). This theory is very important in this study because of a plethora of instructional materials that contain pictorial Illustrations that are not explained and described in words to accommodate these students (i.e. VI students) (Emerson & Anderson, 2018; 158). Thus, the researchers believed that this theory is relevant to this study.

Background

The choice of the site of a study resulted from combination of criteria including availability, accessibility and theoretical interest (Schwedt, 1997:140). This study was conducted at the University of Limpopo in Mankweng District, Limpopo province in South Africa. The researchers, in this study, are residents of Mankweng village and works and study at the university, therefore, the research respondents were accessible to them. The University of Limpopo currently has 89 (both totally blind and partially sighted) registered students in the academic year 2022.

The University of Limpopo (UL) is a single-site institution with the main campus in Mankweng village around Polokwane city. Many students are from rural areas and most are from socio-economically deprived households and communities. Most of the students who register at the UL come from impoverished backgrounds generally characterized by low socioeconomic status among adults, resulting in inadequate incomes.

Ethical Considerations

Qualitative research consists of researchers and participants; it is also established on collaboration and teamwork between the two parties (Hammond & Wellington, 2013: 285). Ethics is an important component of qualitative research. Therefore, in collaboration, both the participants and the researcher should be able to understand them for positive communication during the data collection process (Liamputtong, 2009:32). Hammersley & Traianou (2012: 82) argue that ethics are "a set of principles that embody or exemplify what is good or right, or allow us to identify what is bad or wrong." Prior to the commencement of this research project, an application for ethical clearance was submitted to TREC at the University of Limpopo."Gaining consent can be a practical necessity if access to relevant data is to be achieved" (Hammersley & Traianou, 2012:83). Thus, full informed consent was obtained from research respondents prior to this study, thereby ensuring their protection and privacy. Participatory research relies on the openness of participants to share their opinions and in some cases dissenting views. To ensure that is achieved in this study, the participants were informed that their names will not be used but pseudonyms in other words their confidentiality was guaranteed.

Research Design and Methodology

An exploratory qualitative participatory research method was adopted for this study to determine, identify and analyse the challenges that VI students when they are faced with texts that contain pictorial illustrations. Hammond and Wellington (2012:107) maintain that an exploratory research design is usually used to make preliminary investigations into relatively unknown arrears of research (Hammond & Wellington, 2012: 107). Thus this method was applied in this study. Furthermore, participatory research seeks to highlight divergent opinions and views to create new understanding and knowledge through the process of discovery and that is why this was very important in this study.

Participants

Ten (10) purposefully selected research respondents took part in this study. They were all studying at the University of Limpopo. They bear a lot of similarities in their educational backgrounds. They indicated that they all speak English as a Second Language (L2). Their age ranged between 19 and 29 years. The below Table indicates some of their attributes.

Table 6.1 Research Respondents Profile

Respondent	**Gender**	**Department**	**Level of Study**	**Status**	**Assistive Device used**
Respondent 1	M	Languages	English Studies: 2 level	Partially sighted	Magnifier and spectacles
Respondent 2	F			Partially sighted	Spectacles
Respondent 3	F			Totally blind	Brail and JAWS screen Reader
Respondent 4	M			Totally blind	Brail and JAWS screen Reader
Respondent 5	F			Totally blind	JAWS screen Reader
Respondent 6	M			Low vision	JAWS screen Reader and Magnifier
Respondent 7	M			Partially sighted	Magnifier and spectacles
Respondent 8	F			Low vision	*"I do not use any assistive device I rely on the little sight I have"*
Respondent 9	F			Totally blind	Brail and JAWS screen Reader
Respondent 10	F			Low vision	Magnifier

In addition, five (5) lecturers in the English discipline at the University of Limpopo were also interviewed. These lecturers had the teaching experience ranging from 2 to 15 years. All of them studied English Language and Literature. In addition, the data were also collected from two (2) RDC braillists at the University of Limpopo.

Population and Sampling

The population in this study comprised all registered students at the University of Limpopo in the academic year 2021 and 2022 and lecturers in the Department of Languages, English discipline. The purposive sampling technique is also known as judgement sampling. It is the deliberate choice of participants due to their qualities and positions (Etikan, Musa & Alkassim, 2015; 2). For the purpose of this study, the researcher sampled ten (10) VI students who were studying English language courses in the department of languages at the University of Limpopo and also those in other departments where courses are offered in English. The reason is that they experience challenges as far as pictorials are concerned first-hand.

Data collection

In this study, the story behind the participant's lived experience was the challenges of pictorial Illustrations faced by VI students in English language teaching and learning materials. Within this framework, unstructured in-depth interviews were conducted. Interviews assisted the researcher to obtain in-depth data concerning the challenges of pictorial Illustrations in teaching and learning English language materials for VI students during lectures. The study used telephone interviews with the participants. Each interview was conducted for 15 minutes. One of the advantages of telephone interviews is to avoid the necessity of travelling to the participant's place (Walliman, 2001; 239). Telephone interviews guarantee unbiasedness from the researcher (Berg, 2012). Another advantage of telephone interviews is that: they allow the researcher to ask questions that cannot be answered in a face-to-face situation (McNabb, 2015; 112). Verbatim content analysis was carried out using 'thematic analysis' because this method is relevant for qualitative studies. In this study, the researcher used thematic analysis. In addition, it is a "method for identifying, analysing and reporting the patterns (themes)

within the data and was perceived as the foundational method for qualitative analysis" (Flick, 2014; 421). Thematic analysis was suitable for this study since the aim of this study was to reveal themes that emanated from the questions asked by the researcher to the participants.

Data Analysis, Presentation and Findings

In this study a qualitative thematic analysis was used to organise the data. This method for identifying, analysing and reporting the patterns (themes) within the data and is perceived as the foundational method for qualitative analysis (Flick, 2014; 421). Before analysis could begin, all data generated from the telephonic in-depth interviews were recorded and transcribed. Once completed the transcripts were then collated and thematically analysed following the steps proposed by Clarke and Braun (c.f. Clarke and Braun, 2018). A fully qualitative, thematic analysis was most suited, this meant that researcher subjectivity was considered as a resource in the analysis of data (c.f. Clarke & Braun, 2018; Vaismoradi, Turunen & Bondas, 2013; Koen *et al.*, 2015). By reviewing the raw data, such as keywords and phrases, we identified patterns that led to themes that explained the challenges that VI students face when they are confronted with texts that contain pictorial illustrations. The themes that emerged from the data analysis were: (1) Theme one: challenges of pictorial illustrations in English language learning materials and lessons, (2) Theme two: Causes of pictorial illustration challenges in English language learning, (3) Theme three: Strategies for teaching pictorial illustration to VI students (4) Challenges of teaching pictorial illustrations to VI students (5) Theme five: Challenge of brailling English language learning materials that contains , graphs, that are in picture format and those containing pictorial illustrations such as Tables.

Findings

The compressed findings are discussed below using quotes from the research respondents. The respondents views are quoted verbatim and they are as follows:

Respondent 2

"…I struggle to see pictorial illustrations because even if I increase the font. For example, in one of the English language courses cartoons are sometimes used and they are not visible enough after increasing the font".
Respondent 3 *"…I have a challenge when it comes to materials with pictorial illustrations in English language learning materials because the assistive device that I use does not recognise cartoons and figures. In other words, I mean that they are not explained and described by the JAWS screen reader. Instead, the screen reader just says image without explanation or description."*
Respondent 5 *"I cannot understand what is portrayed in the pictures or cartoons and due to that I end up feeling excluded during English language lessons…".*
Respondent 6 *"I struggle to understand what I am reading if the materials contain pictorial illustrations, the magnifier cannot clearly increase some of the pictorials. I end up failing to understand what I am reading, I also have challenges in syntax because I cannot see how the tree diagram is drawn,..."*
Respondent 7 *"…Pictorial illustrations sometimes create confusion to me because some are not visible enough regardless of font increase. Another challenge is that some cartoons and maps are too dark for an assistive device that I use…"*
Respondent 8 *"…English language learning materials that contain pictorial illustrations have challenges in my learning process because some pictorials are not clearer even after increasing the font so it is hard for me to see what is written or shown on the cartoons".*
Respondent 9 "*I get confused when reading English language learning materials with pictorial illustrations. As braille and JAWS screen reader cannot describe and explain the pictorial illustrations. During lessons, I get confused because you may find that I am struggling to*

understand the given information on the cartoons so unexplained cartoons may pose a challenge…".
Respondent 10 *"…I struggle to participate if there are many cartoons and maps that I cannot see and understand …".*

The other problem identified by research respondents (students) is that of lack of training on the part of lecturers and this is captured in the below comment.

> *"Lack of training to English language lecturers. Also, there is a lack of policies concerning the teaching and learning of Visually Impaired or disabled students in general in different universities including the University of Limpopo…".(Research Respondent 9)*

Teaching and Learning policy of UL (University of Limpopo seems to contribute to the challenges faced by VI students and this is captured by one research respondent who said the following:

> *"There is silence about the teaching and learning of Visually Impaired students in the University of Limpopo policy…"….".(Research Respondent 4)*

The issue of braille is also a contributing factor. One braillists said the following:

> *"…materials with cartoons are not easy to convert to braille". …".(Research Respondent 2)*

The other one said the following:

> *"…we have challenges concerning slides presentations with pictorial illustrations because it is not easy to convert the PowerPoint documents. This is because the brailling process is easy with Microsoft word, so the inclusion of pictorials in slides makes the brailling process difficult" …".(Research Respondent 6)*

One research respondent felt very strongly about the situation particularly with regards to the brailling process and echoed the following:

> *"Graphs and pie charts affect our brailling process because the software that we use for brailling does not recognise them and it takes time to try and remove the*

information on them. For this reason, when brailling materials with graphs and pie charts, it is difficult to remove drawings in a manner that will not affect the information". …".(Research Respondent 11)

Discussion

Recurring themes throughout the interviews with research respondents points to the following: lack of training on the part of lecturers to teach texts containing pictorial illustrations to VI students, lack of provision of advanced, sophisticated resources to help VI students by the university, lack of training on the part of those who convert words text to braille, because brallists are not conversant with how to go about texts that contain pictures, graphs and Tables and this is a serious problem to VI students. Various technological software's and tools should be purchased for these braillists. In addition, adequate training should be provided to them by the university. Lastly, lack of dedicated unit in the university library to cater for VI students, and lack of enough capacitation of RDC to help VI students.

In addition, on the one hand, the VI students struggle in dealing with texts that contains pictorial illustrations and other hand the VI students struggle in creating texts containing pictorial illustrations (e.g. representation of a framework model in a research paper). It is well known that in other instances pictorial illustrations provides much clarity than ordinary written words. Therefore, provision of relevant technology to help VI students with matters like those is very critical so that they can also be able to create pictorial illustrations when writing some of their academic (e.g. Research Papers). On the other hand, the students does not offer VI students any training to aide their academic performance except providing them with just technological tools.

The other very vital finding is that lecturers are left to device their own strategies on how to lecture using text that contain pictures, graphs and Tables to VI students. They rely on their own intuitions. It has been observed that lecturers in general are not provided

training on how to facilitate learning to students such as VI students. To complicate the situation further, It has been reported that a significant number of lecturers at the institution in this study do not have a teaching qualification such as Post Graduate Diploma in Education (PGCE). Therefore, it becomes a problem to be familiar with various pedagogical approaches relevant to specific situations like the ones of VI students.

Support staff that works with VI students should also be provided with opportunities to be retrained and also be introduced to the current technological tools. Brallists should be trained on regular basis to always be familiar with what is out there to help VI students and the same opportunities should be provided to lecturers as well. It is hoped that this study will trigger other studies related to the subject matter so that VI students can be helped.

Conclusion

In this paper, we discussed the experiences of VI students when dealing with texts that contain pictorial illustrations, the experience of lecturers who everyday have to teach VI students and as well and support staff (i.e. the braillists) who are everyday confronted with tons and tons of documents (including the ones that contain pictorials) that they have to convert in braille at UL. The article argued that firstly, various technological support, particularly in the form of technology gadgets should be provided by the institution, secondly, there should be a synergy between the braillists and the content developers (i.e. the academics) so challenges developing as a result of pictorial illustrations can be circumvented or lessened. Our discussion showed that a significant number of the participants in this study are experiencing very difficult conditions when it comes to successful learning of English due to issues related to text with pictorial illustrations. The paper also highlighted both individual capacity challenges as well as systemic challenges. The findings show that adequate training and support for both braillists and lecturers is needed.

The findings also indicate that a lack of coordinated effort among roles players to help VI The findings further underscore the importance of the broader university structures and policies to support academic staff at the university. This study also conclude that the use of pictorials in learning materials affects the inclusion of VI students during lessons and materials, as there is a struggle to access important information as VI students struggle to see pictorials even through the use of different assistive devices. The study further conclude that pictorials limit fair equal education opportunities for VI students during English language lectures, where pictorials are used as there are no explanations and descriptions that accommodate VI students.

Recommendations

The following recommendations are accordingly suggested and they should be read in conjunction with the entire results and literature review discussed in this article:

- Extra lectures should be provided where necessary to avoid exclusion and confusion in lecture halls.
- The study recommends that UL work collaboratively with Library for the South African Library for the Blind so that it can be helped with resources meant for VI students.
- The study recommends that English discipline at UL should devise and develop a comprehensive approach or strategy that can be used to determine a departmental in-service course that articulates to the facilitation of lectures to VI students using text that contain pictorial illustrations.
- The study recommends that English discipline and UL in general develop an annual skills audit programme with special emphasis on how to teach VI students using texts that contain pictorial illustrations.
- It is recommended that since the braillists are not necessarily English specialists, there should be a collaboration and synergy when materials for VI students are produced and this can be initiated from the departmental level.
- Lecturers in the English discipline should have a good working relationship with RDC, so that they understand the learning challenges faced by VI students when dealing with pictorial illustrations in learning materials and lecture halls.

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