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Etiology and manifestation of dyslexia among grade six pupils in Eastern Zambia.

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ABSTRACT

The terms dyslexia and reading disability are often used interchangeably. There are so many children who encounter reading problems in Zambia to an extent that some of them might complete seven years of primary education without the ability to read even a three letter word (MoE, 1992). A study conducted in Zambia by Matafwali (2005) revealed that, 49.1% of the grade three pupils could not read words at all. In addition, 57.5% could not read any single sentence. According to Kelly (2000), the reading level in some grade six pupils fell within the level expected of grade four. Therefore, it means that teachers who teach reading to dyslexic pupils face a lot of challenges. It is a well documented factor that, in the western world, reading disabilities play a major role amongst children who drop out of school and/or become delinquent (Zieman, 1999). In addition, it is important to know the factors which cause dyslexia so as to remediate the problem. The objective of the present study was to identify reading disabilities among grade six pupils and challenges that teachers face in teaching reading to these pupils. Informed consent was obtained from the respondents and then questionnaires were administered to those who agreed to participate in the study. Simple random sampling was used to come up with the required number of pupils using the class registers. Teachers were given questionnaires to answer on their own after they had understood the instructions. For the pupils, questionnaires had to be answered on a one-to-one basis with the researcher. The research design of this study was a quasi experimental design. A total of one hundred and ninety two (192) pupils and fourteen (14) teachers drawn from two districts in eastern Zambia were enrolled in the study. Results show that there was a moderate effect of lighting system at home and one's reading ability ($F(10, 154) = 3.188, p < .05, \text{partial } \eta = 9.4$). As such, the nature of lighting system at home does not really affect

one's reading ability. There was no significant effect of having a reading table at home on one's reading ability ($F(10, 154) = .451, p > .05, \text{partial } \eta = .3$). Whether there was a table at home or not, it had no significant effect on one's reading ability. Only 3% of the variance that account for reading ability can be accounted for by a reading table at home. There was a strong correlation between teachers' ability to identify specific reading errors and actual performance on learners. Dyslexia or reading disability is a problem which is widespread despite not having the attention that it deserves. There are so many factors that cause this condition and if the problem is to be solved, aggressive measures must be put in place. What is more worrying is that once a child has this condition, it persists into adulthood. Research evidence has shown that once pupils fall behind in skills of reading, they normally do not become fluent readers unless, intensive expert help is available to them. Therefore, it is very important that dyslexia is detected in early childhood so as to find means of arresting the problem.

Key words: Reading, Reading disability, Dyslexia.

INTRODUCTION

According to Williams (1998) in Kalindi (2005), reading is the ability or a deliberate process to see and comprehend written or printed language. Reading is significant in general ways that touch everyone because the ability to read and write is an essential ingredient of success in most societies where so much information is transmitted in written form (Rayner, et al, 2001) in Kalindi (2005, *ibid*). Reading is a learned skill which must be taught. The process of learning to read begins early in a child's life (Torgesen, et al, 1994). Learning to read may seem like something which comes about naturally but for most children, it requires extra effort and it may be a long and complicated process lasting several years. The learning of names of letters or their pronunciation may take some time for children with difficulties in learning to read. As a result, such children lag behind their classmates in reading. Even after the child has put in so much effort in learning, reading may still be slow, flawed or both (Paananen, et al, 2009).

Dyslexia is a term which is often used to describe difficulties in learning to read and it is often used interchangeably with the term reading disability. Peyrard- Janvid (2004) defines reading disability as an unexpected failure in learning to read, write or spell in spite of normal senses, normal intelligence and adequate opportunity and motivation. However, it is important to note that there is no single accepted definition of dyslexia by all reading specialists. The World Health Organisation (WHO, in Douglass, 19994) labels dyslexia as a specific reading disorder whereas others consider it to be a specific language disorder.. According to Encyclopaedia Britannica (2006), dyslexia is a language disorder in which a person with normal vision and of normal, or even above average intelligence has difficulty in understanding written language.

Dyslexia is often characterised by a confusion in the positioning of letters which is caused by the person's reading in the wrong direction across the page, substituting, omitting and or adding words as they are reading. Children who are dyslexic do not have the ability to note some similarities or differences in letters or words nor the ability to properly pronounce unfamiliar words.

Due to the fact there is no widely accepted definition of dyslexia, it is difficult to estimate the number of people who are dyslexic. On one hand, some researchers argue that cases of dyslexia not common, only occurring in a negligible percentage of the world's population.

However, on the other hand, there are researchers who state that about 10% to 20% of the world's population shows characteristics of dyslexia. Furthermore, it is argued that dyslexia can manifest in different levels of intensity, affecting the reading ability of some individuals more than others.

The causes of dyslexia are difficult to pin point. Just like its definition, there are different views about the causes of dyslexia. The causes of dyslexia vary from one child to the other. There has been so much discussion going on in the recent past in the United States of America and Scandinavian countries as to what the causes of dyslexia are. Is it a psychological or a neurological problem? Dyslexia is a complex problem which is sometimes caused by neurological problems and sometimes by psychological problems (Maruyama, 2007). Some researchers suspect that dyslexia is caused by a central nervous system defect. Reading is a neurological process performed by the brain. When a child finds it hard to learn to read, the cause almost lies in the mechanics of this neurological process. There is disorientation and disorganisation in the recognition of visual patterns as a result of brain damages.

Furthermore, hereditary factors seem to play a major role in one being dyslexic. It is presumed that, more than half of dyslexia cases are due to heredity. However, it is important to note that heredity alone cannot account for dyslexia. Ojanen (2007) says that dyslexia can be a result of inadequate teaching. Teachers have got a lot of work in teaching reading skills if a lot of children are to become fluent readers. In addition, there are some researchers who believe that latent dyslexia may be aggravated by the way reading is taught. Some methods like whole-word, or look-and-say seem to be an obstacle to learning for dyslexics than it is for ordinary pupils (Encyclopaedia Britannica, 2006).

Some teachers were not trained in helping dyslexic pupils who they might come across during the course of their work. As a result, they do not have the skills to teach dyslexic pupils according to their needs (Kalindi, 2005). No matter how much reading material is available, dyslexic pupils cannot improve their reading skills as long as the most important person who is the teacher does not know how to assist in this regard.

Lastly but not the least, home environmental factors also contribute to one having dyslexia. Take for instance, if there is no one at home to motivate the child to learn how to read, there is no way he/she can be encouraged. An appreciative and supportive environment is cardinal.

This means that parents and other members of the family must take keen interest in terms of how the child is fairing in school and offer the necessary support (Paananen, et al, 2009). In addition, other factors in the home environment such as social problems, ambiguous daily routines, poor economic status, problems in the child's emotional life, the kind of lighting system, etc can also contribute to a child being dyslexic.

As earlier alluded to, there is no one single factor that can be pin pointed as the cause of dyslexia. The causes are many and complex.

Dyslexia is manifested in a number of ways. It is said that dyslexia can manifest itself in different ways and levels of intensity, affecting the reading ability of some children more than others. Dyslexia is often identified during childhood and if unchecked, it continues to affect individuals for the rest of their lives (Douglass, 1994).

A dyslexic child is not able to perceive exactly what is on a page. To such a one, letters and numbers often appear reversed. Take for instance, "p" may appear to be "q". The child also tends to omit letters or words or add letters and words that are not there (Encyclopaedia Britannica, 2006). Since dyslexia affects the performance of a child in other subjects, it is very common to find that a child who is dyslexic repeats the same grade for a number of years.

"The term dyslexia is often used to refer merely to a difficulty in reading, but sometimes writing difficulties are included as well" (Paananen, 2009; 23). Therefore, dyslexia may manifest itself in the way the child reads or writes. The reading and or writing may be slow and or with errors. According to Mando (2008), dyslexia is caused by the failure to acquire phonological awareness and alphabetical coding. Usually, the child has problems in syllabating words that are spoken, defining what phonemes make a particular word or which word a phoneme begins with.

When it comes to reading comprehension, it is hard for the child to grasp what he/she reads and /or be able to remember it. Usually, as one is reading, he/she either omits, adds, substitutes or mispronounces letters and or words. When it comes to writing, what the child writes is difficult to comprehend because of a lot of mistakes. Self expression is also very difficult for dyslexic children. They might want to say something and then suddenly, they forget what they wanted to say.

No matter how much the child tries to learn to read, dyslexic children are not fluent and are always slower than their peers or classmates.

Hypotheses

The foregoing theoretical analysis led to the formation of the following hypotheses;

- The nature of lighting system at home would have an effect on one's reading ability
- The availability of a reading table at home would determine learners' reading ability.
- There is a correlation between teachers' ability to identify specific reading errors and actual performance on learners.

METHODS

Study design and sampling

The study employed both qualitative and quantitative methods of study. Owing to the fact that this study was to identify reading disabilities, the study population consisted of primary school pupils. The sample for the study comprised fourteen teachers and one hundred and ninety two grade six pupils from ten schools. Five schools were from Chadiza district (rural setting) and the other five were from Chipata district (urban setting). The sample was chosen using simple random sampling which provided an equal chance of being selected.

Instruments

Consent form: A consent form was developed for the present study. This is a written consent form which elicited information that the respondents have agreed to be part of the study. Prior to the administration of all parameters, the willingness of the subjects was ascertained and they were made to sign a consent form.

Teacher questionnaire: The teacher questionnaire was used to get particulars of the teachers as well as their educational qualifications. In addition, the teacher questionnaire was used to assess how teachers identify learners with reading disabilities, the methods they use in teaching reading and so on.

Checklist on reading errors: The checklist on reading errors was used by teachers to bring out the difficulties that they encounter with pupils who are unable to read.

Word list levels 1- 5: The word list levels 1 – 5 was used to find out the number of correct words that each participant was able to read. Each level had twenty words.

Reading passage levels 1 – 4: Each participant was given four passages to read. As the participant was reading, the researcher was taking note of the mistakes made, that is words omitted, added, substituted and mispronounced. Time taken in reading each passage was also taken note of. At the end of each passage, there were questions to be answered. The aim of these questions was to assess how well the pupils well able to comprehend the material they would have read.

It is worth mentioning that the last three instruments for the pupils were administered on a one to one basis.

Ethical Consideration

Before commencement of the study, the University of Zambia Research Ethics Committee (UNZAREC) gave approval. Study approval was sought from the Ministry of Education (Eastern province) to conduct the study in Chadiza and Chipata districts as well as the District Education Board Secretaries (DEBS) in the above mentioned two districts. The purpose of the study was fully explained to the participants and informed consent was obtained from those teachers who agreed to participate in the study. For the pupils, written consent from the head teachers of each school was obtained on behalf of all the pupils who participated in the study. Therefore, all necessary ethical guidelines were considered in this research.

Data Analysis

The data was analysed in Statistical Package for Social Sciences (SPSS 11). Pearson correlations were used to assess the relationship between teachers' ability to identify specific reading errors. Analysis of Variance (ANOVA) assessed the effect of nature of lighting system at home and the availability of a reading table at home on reading ability. Measures of central tendency (mean, median and mode) as well as T- tests were also carried out.

RESULTS

Results are presented under the following headings;

1. Sample distribution of the study
2. Effect of lighting system at home on learners' reading ability
3. Effect of availability of a reading table at home on learners' reading ability
4. Correlation between teachers' ability to identify specific reading errors and actual performance on learners.

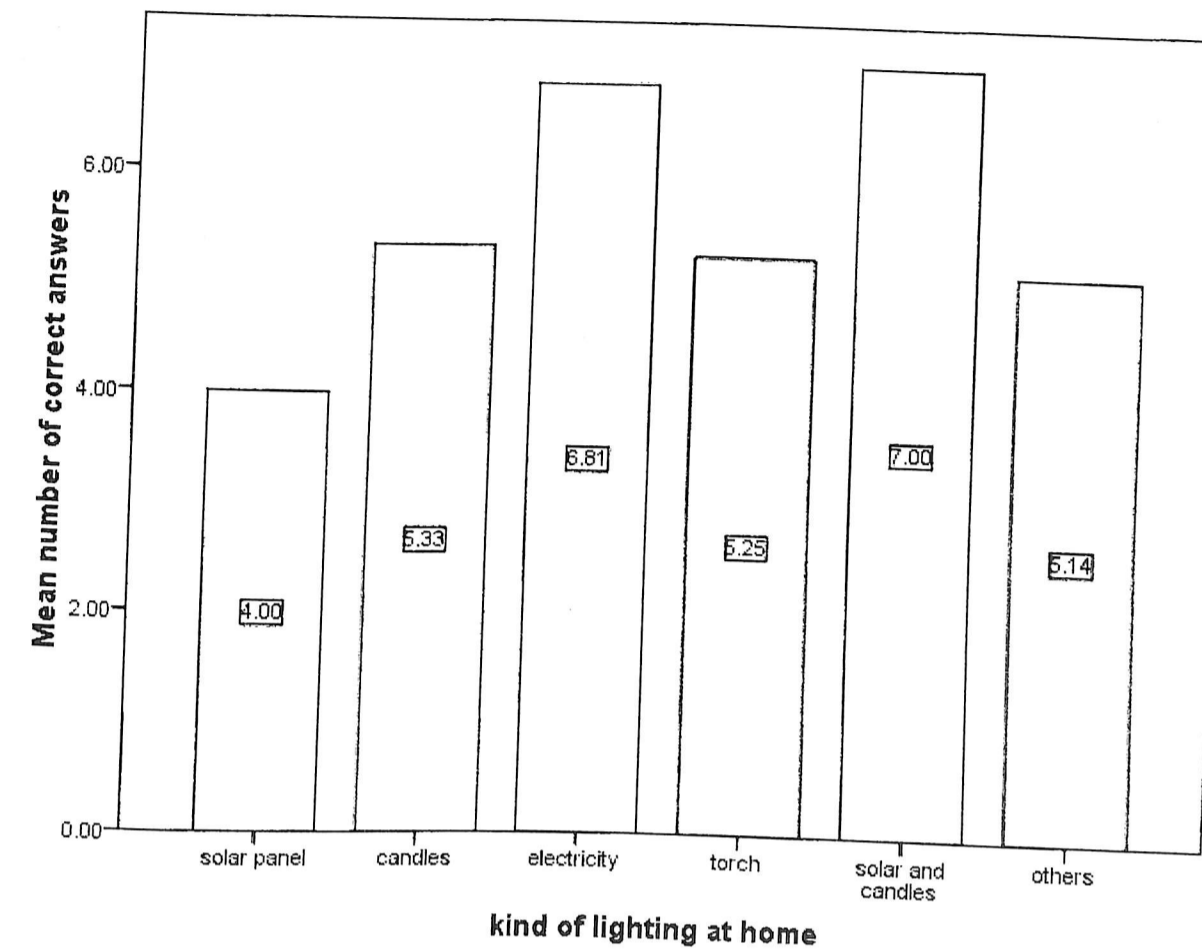
Table 1: The sample distribution of the study

District	Boys	Girls	Total
Chadiza	47	47	94
Chipata	49	49	98
Total	96	96	192

The first stage involved classifying the respondents (pupils) into groups based on the kind of school they went to, that is, rural or urban. The sample size at this stage of study consisted of one hundred and ninety two subjects drawn from different schools in Chadiza and Chipata districts of eastern Zambia.

The teachers in the sample were fourteen from both districts. There were five teachers from Chadiza district and nine teachers from Chipata district. Gender balance was not a factor at this point because it is possible to find more female teachers at a particular school compared to male teachers and the opposite is true.

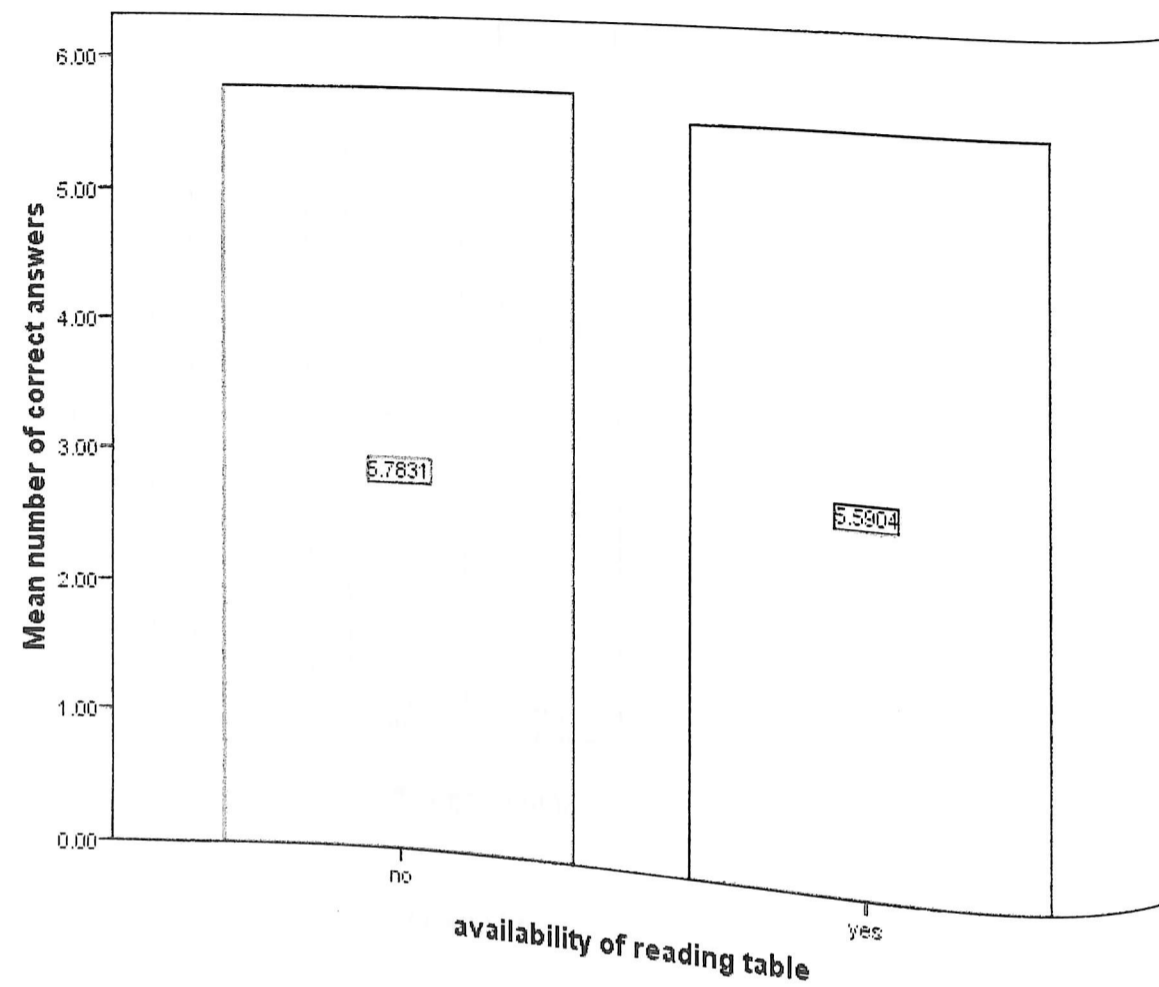
Graph 1: Kind of lighting system at home



There was a moderate effect of lighting system at home on pupils' reading ability. ($f(10, 154) = 3.188, p < .05, \text{partial } \eta = 9.4$).

Only 9.4% of the variance that account for reading ability can be accounted for by lighting system.

Graph 2: Availability of a reading table at home



There was no significant effect of having a reading table at home on reading ability. ($f(10, 154), .451, p > .05, \text{partial } \eta = .3$). 3% only of the variance that account for reading ability can be accounted for by having a reading table at home.

Table 2: Correlation between teachers' ability to identify specific reading errors and actual performance on learners.

	1	2	3	4	5	6
Academic performance	1					
Common difficulties in reading	-.00					
Omitting words and letters	.40**	.13				
Substituting words and letters	.45**	.19*	.85**			
Mispronouncing words and letters	.41**	.13	.76**	.83**		
Adding words and letters	.33**	.27**	.79**	.85**	.75*	
Mean	2.29	4.05	3.55		3.22	
SD	.75	1.36	1.33	1.30	1.29	1.33

** correlation is significant at the 0.01 level (one - tailed).

* correlation is significant at the 0.05 level (one - tailed).

Generally, there was a moderate correlation between teachers' ability to identify specific reading errors and actual performance on learners.

1. There was a moderate relationship between academic performance and omitting of words and letters. ($r = .404, N = 188, p < 0.05, \text{one tailed}$). It was a fairly moderate correlation: 16.3% of variation explained.
2. There was a moderate correlation between words substituted and academic performance.
($r = .454, N 190, p < 0.05, \text{one tailed}$).
3. There was a moderate correlation between words mispronounced and academic performance.
($r = .410, N 189, p < 0.05, \text{one tailed}$).
4. There was a moderate correlation between words added and academic performance.
($r = .327, N 190, p < 0.05, \text{one tailed}$).

DISCUSSION

Effect of the nature of lighting system at home on one's reading ability

This section sought to examine whether the lighting system at home had an effect on one's reading ability. The results suggest that only 9.4% of the variance that account for ability to read can be accounted for by the nature of lighting system at home. The findings also indicate that most of the pupils are not affected by the nature of lighting system at home as far as their reading ability is concerned. It does not matter whether one uses electricity, candles, solar power, etc. If she/ he knows how to read, the lighting system will not affect him or her. If one does not know how to read, the nature of lighting system at home will still not make him/her know how to read. This finding is consistent with the literature which indicates that there are a lot of factors which cause dyslexia. Take for instance, in the home environment, there could be other issues that lead to one being dyslexic. It could be lack of motivation, overburdening house chores, lack of proper nutrition, etc.

Effect of availability of a reading table at home on one's reading ability

The results indicate that there was no relationship between the availability of a reading table at home and one's reading ability. Those pupils who had no reading tables at home were still able to read, meaning that, having a reading table was not a factor. As already alluded to, there is an enormous body of literature that indicates that there are so many causes of dyslexia and difficult to pin point in a particular case. Most of the children do not really use tables for reading. They use whatever is convenient to them, for instance, the bed, their laps, etc and still be able to learn to read. McGuiness (2004) argues that children who fail to learn to read do so mainly because of environmental causes. There are so many environmental causes and availability of a reading table at home in this case did not happen to be one of them.

Correlation between teachers' ability to identify specific reading errors and actual performance on learners

Generally, there was a moderate correlation between teachers' ability to identify specific reading errors and actual performance on learners. Pupils were given passages to read and as they were reading, they were making errors such as adding words or letters which are not there, omitting words and letters, substituting as well as mispronouncing words and letters. The teachers also independently filled in checklists for each pupil to give information on how

a particular pupil performs when reading. If the teacher in the checklist mentioned that a particular child usually adds words as she /he is reading in class, chances were that she/he would still add words which are not there in the passage during the interview with the researcher. In as much as teachers are able to identify specific reading errors among their pupils, remediation tends to be very difficult due to a number of factors. The teachers, especially in rural areas are not motivated and they handle a large number of pupils in their classes such that chances of assisting dyslexic pupils are very low if not there. In short, teachers were able to identify specific reading errors in relation to the actual performance of pupils.

Limitation of the present study

There were two main challenges faced during this study. Firstly, there were supposed to be two hundred pupils in the sample, that is one hundred boys and one hundred girls. But only one hundred and ninety two pupils participated in the study. This was mainly due to absenteeism.

Secondly, there were supposed to be twenty teachers in the sample but only fourteen participated. This was due to the fact that most of the teachers who were teaching grade six pupils were not around as they were participating in 2010 national census programme.

CONCLUSION AND RECOMMENDATIONS

In conclusion, current evidence suggests that dyslexia is real. It is often said that, children are the future leaders but how can they be able to lead if they cannot read. As seen from the manifestation of dyslexia, it starts from childhood and haunts an individual for the rest of his or her life. Research suggests that no matter how much time such children may be given to be in school, they will still not be able to read because they have not been prepared with the correct reading skills. Usually, teachers are not trained on how to handle dyslexic pupils hence lacking the necessary skills. No special attention is given to such pupils as they are taught just like any other pupil hence them being at a disadvantage.

The recommendations are that, whilst in college, teachers must also be oriented towards helping poor readers that they come across in the course of executing their duties. It is not always that dyslexic pupils are placed in their own classes as having special needs. Usually,

they are found in the same classes with fluent readers or writers thereby making the situation worse.

The government must put in place policies that encourage reading from an early age. Those who cannot breakthrough in fluent reading must be given special attention and be made to repeat grades until they improve in the way they read.

The teacher- pupil ratio has to be reduced. Most of the time, teachers are faced with the challenge of having a high number of pupils in their classes hence making individualization especially for dyslexic pupils very difficult. Furthermore, the home environment must be conducive for learning to read. There must be people who are motivating the child to read and the materials also must be there. It is often said that, 'charity begins from home'. The home environment is also critical in learning how to read. In short, there must be consented efforts from all stakeholders.

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***Learning to read in English in different environments:
A case of selected schools in Lusaka and Mufulira Districts***

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ABSTRACT

This study mainly focused on learning to Read in English in Differing Environments. Selected public and private schools in Lusaka and Mufulira urban districts in Zambia were targeted, with a population of all Grade 3 learners, totaling 150. Reading tests, semi-guided interviews, focus group discussions and a check list for lesson observation were done. A qualitative approach was used to probe and to get deep insights of how reading in English was taught. The qualitative data was analysed through the identification of teachers' common themes, descriptions and experiences. Conclusions were reached and analysed with reference to the research questions. Quantitative data was analysed using a t-test to compare the reading levels between learners in public basic and private schools. The findings indicate that learners in private schools have a conducive environment for learning how to read in English. The study found that public basic schools do not use the recommended PRP. Public schools did not have enough teaching and learning materials. It was established that learners in public schools did not read according to their reading levels while learners in private schools did that effectively. The recommendations were that the Ministry of Education needed to provide enough equipment and materials, and train teachers appropriately as well as carry out regular inspection exercises. In the same way, it was incumbent on the school authorities to cooperate with parents.