

## THE USE OF TEACHING AIDS IN ENVIRONMENTAL STUDIES TEACHING AND LEARNING PROCESS: A CASE STUDY OF A SELECTED SCHOOL IN OSHANA REGION.

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### ABSTRACT

*The purpose of this study was to explore the junior primary teachers' use of teaching aids in the Environmental Studies teaching and learning process. The study used a case study design within the qualitative research approach. The sample comprised of five (5) junior primary teachers who were purposively selected. Observation and individual interview methods were employed to collect data. Data were analysed by the using thematic approach. The study results revealed financial constraints, lack of knowledge in designing aids, lack of time for making teaching aids for each lesson, limited space in the classroom and inadequate storerooms as hindrance to effective use of teaching aids. The study provided crucial information on the use teaching aids in the Environmental Studies teaching and learning process and recommends that teachers be trained on learning material development. The Ministry of Education, Arts and Culture should also provide adequate teaching resource materials and facilities to schools*

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*for junior primary teachers to effectively teach and impart knowledge and skills in learners at this crucial phase.*

**KEY WORDS:** *Environmental Studies, Education, Junior Primary Teachers, Learners, Namibi*

## **BACKGROUND**

Teaching in the 21st century becomes a global challenge to many teachers, including Namibian teachers. Teachers of nowadays are required to teach learners in an enriching learning environment where learners are engaged into the subject content by the use of teaching aids and leaning support materials. Teaching aids are an integral component in any classroom, more important at junior primary phase (MoE, 2014). Romiszowski (cited in Rajapaksha & Chathurika, 2015, p. 68) defined teaching aids as instruments which facilitate the process of teaching learning. Teaching aids are important educational tools that make a direct influence on both teaching and learning. Pitts (2012) suggests that when learners are given the chance to learn through more senses than one, then they can learn faster, while Briggs (2014) indicates that teaching aids help the teacher to make learning meaningful to the learners. Similarly, Gilakjani (2012) classified teaching aids into three categories such as Auditory Aids, Visual Aids and Audio-Visual aids. The three identified categories work as supportive measures to both teachers and learners in the pursuit of knowledge and curriculum transaction to overcome verbal deficiencies in communication in a classroom situation.

The Junior Primary phase in Namibia Education system starts with Pre-Primary–Grade 3. This is the foundation phase where teachers lay solid foundation for learning throughout the formal education. If the foundation is properly laid, learners will be well prepared to continue with the learning at the higher levels which will eventually prepare them for fuller participation in their society. It is at this stage that learners acquire life-long skills, knowledge and attitudes concerning living a

healthy life-style, making friend, controlling emotions and learning how to keep safe (MoE, 2014). Literature suggests that teaching and learning materials are crucial to any teaching and learning process worldwide. Ministry of Education, Arts and Culture (2014) states that teaching aids enable children to mature holistically. This can be realised only by the use of teaching aids and learning support materials such as toys, dolls, charts and pictures. In addition to that, Onyango (2014) indicates that teaching materials help to sustain interest of learners and make learning to be real. He notes that learners need practical things rather than descriptions of aspects beyond their experience. When teachers do not use teaching aids, it is possible that only rote learning takes place as learners only master concepts without in-depth understanding.

All in all, there is a general agreement among the scholars that young children learn best when they are actively involved in the learning process through higher degree of participation, contribution and production (Ministry of Education, Arts and Culture, 2014; Durdanovic, 2015; Masab, Esmaeli & Sare, 2015; Rajapaksha & Chathurika, 2015) & Karaka, 2007).

Since Environmental Studies is a subject that requires practical application of knowledge, the use of teaching aids becomes a necessity to facilitate learners' understanding. This subject is critical in enabling individuals to develop a lively, appreciative and creative intellect to discuss issues rationally that affect their lives. It further promotes learners' involvement in practical activities to preserve and sustain the natural environment (MoE, 2014). For instance, one needs to have skills and understanding of social responsibility towards other individuals and the nation as a whole to be able to co-exist in a diverse culture country like Namibia. However, the effective teaching of Environmental Studies subject in our schools is compromised by the manner in which teachers impart environmental knowledge and skills into learners. It is observed that junior primary teachers in Namibia use

little teaching aids when presenting Environment Studies lessons. In some cases, they do not use any teaching aids at all. This has resulted in some learners not learning anything from the lessons as they find it hard to recall what they have learned in the previous lessons.

While a number of studies have been carried out internationally and a few from Africa countries to ascertain the specific challenges facing junior primary teachers when using teaching aids in teaching and learning process, (MoE, 2014; Durdanovic, 2015; Nasab, Esmaeli & Sare, 2015); to date, little is known about the opinions and perceptions of Namibian junior primary teachers on the use of teaching aids in the Environmental Studies. As such, this study is timely and necessary.

The findings on the use of teaching aids in the Environmental Studies teaching and learning process has potential for the junior primary teachers to know how to plan, organise and develop instructional activities for further development of the learners. Generally, the findings of this study should provide useful information to policy makers, junior primary teachers, and educators for policy formulation and implementation as well as for the improvement of provision of teaching and learning support materials to schools. Since teaching aids has to be used at junior primary level for effective learning to take place, it is thus appropriate for junior primary teachers to understand their roles and responsibilities especially in terms of using age appropriate teaching aids in their classrooms.

Therefore, in this study attempt was made to explore the perceptions of selected junior primary teachers on the use of teaching aids in the Environmental Studies teaching and learning process in Oshana region.

The following research questions driven the study:

1. What are the types of teaching aids that teachers use during Environmental Studies in teaching and learning process?
2. What are the challenges that teachers encounter when using teaching aids in the Environmental Studies' teaching and learning process?

3. What are the strategies that need to be used when using teaching aids during the Environmental Studies teaching and learning process?

The rest of the article is structured as follows: First, the background of the study and theoretical framework. This is followed by a description of the research methods and procedures used in the study. The results of the study are the discussed. Finally, conclusions, recommendations and directions for future research are offered.

### **Theoretical framework**

The study adopted Piaget's theory of cognitive development that appreciates the significant role that teaching aids and learning materials play in the development of the child's mental structures or schemata. Schemata provide several functioning in learning, for instance, categorizing, remembering, comprehending (understanding) and problems solving (Parsons, et al., 2001; cited in Mostert et al., 2009, p.48). In any education system, teachers occupy pivotal position as they are the kingpin in the entire education set-up. Teachers have the responsibility to influence the mental growth and development of their learners. The theory perceives a child as someone who is not only an active discoverer, but also an inventor and a problem solver. Piaget views the goal of education as to create people with the ability to be creative, inventive and discoverer rather than people who constantly reflect the ideas of others. In schools, we need learners who are active, who learn early to find out by themselves, partly by their own spontaneous activity and partly through material we set up for them. In this context, Piaget has stressed the importance of actions in the acquisition of knowledge and that the child should be given the opportunity to experimentally and actively manipulating objects, an experience which is likely to enhance his or her grasp of the transformation of objects and their associated relations.

Each child is an individual with his/her own needs, pace of learning, experience and abilities (MoE, 2014). All children bring to school a

wealth knowledge and social experience from the family, the community, and through interaction with the environment; hence, learning in school must involve, build on, extend and challenge the learners' prior knowledge and experience. Through the use of teaching aids, teachers are able to cater for the needs of the learners and shape their learning experience accordingly.

Piaget shows that a child's understanding is restricted by stages that he/she has reached and teachers take cognizant as they teach children with different levels of intellectual development. For example, teachers use teaching aids that match learners' intellectual growth. Due to limited language development at junior primary phase, children cannot handle too much verbal explanations and this makes the use of teaching aids very essential.

Cognitive development is based on the premise that learning takes place as results of active engagement and exploration of their physical and social world (Joubish & Khurran, 2011; Lazarus, 2010). This theory advocates for children to be provided with opportunities to discuss, explore, experiment, to question and debate with others with teachers acting as guides and facilitators. It is appropriate to let learners discover, or explore information for themselves, encourage them to find their own ways through a topic or area of content. Children learn better by doing, inventing and discovering answers themselves. The effective use of teaching aids and learning support materials then assist learners in process of remembering (recall) and comprehending (understanding), and this entire make learning more productive.

Mwamwenda (2004) indicates that Piaget cognitive theory takes a constructivist view point that learners are not passive in their learning process, but they learn better by doing, inventing and discovering answers themselves. Teaching aids in the teaching and learning process symbolize different objects in the classroom that allow learners the opportunity to touch and manipulate materials and this will increase their information in their schema. As far as possible, early primary school education should be action oriented and allow children to deal with reality as they face it every day.

## **METHODOLOGY**

### ***Research design***

Research design is a plan of how the researcher systematically collect and analyse the data that is needed to answer the research questions (Bertram & Christiansen, 2014).

This study used a case study design, within a qualitative approach to capture the lived experience of junior primary teachers on the use of teaching aids in the Environmental Studies teaching and learning process in Oshana region. du Plooy-Cilliers, Davis and Bezuidenhout (2014) believe that case study method allows a deep exploration within a natural context and hence provides a full and thorough understanding of a particular and lived experience of a participant. The study sought to explore the understanding and experience of the junior primary teachers and the meanings they attach to the use of teaching aids in the teaching and learning process. The researchers were of the view that the chosen design is appropriate for the study as it offers participants an opportunity to make their voices heard.

### ***Participants***

A research participant, also called human subject, is a person who participates in a research by being the target of observation by researchers (du Plooy-Cilliers, et al. 2014). Participants of this study were junior primary teachers from a selected school in Oshana region. Junior primary teachers play a significant role in developing and fostering the appropriate skills and social abilities to enable optimum development of children according to age, ability and aptitude. They are managers and coordinators of teaching and learning activities in the classroom, hence, their roles are to optimise conditions for teaching and learning with in the school and classroom environment. Researchers were of the opinion that these teachers were the best choice for the study as they have experience in using teaching aids at a foundation level as required by the Ministry of Education, Arts and Culture curriculum.

### ***Sample and sampling procedures***

A sample is a selected small collection of units that closely represents features of interests on a larger collection of cases called population (du Plooy-Cilliers, et al. 2014). For this reason, the sample of participants or the units of analysis for this study were five (5) junior primary teachers who were purposively sampled from a selected school in Oshana region. The sample size of five (5) participants was considered more than enough for the study because for the phenomenological studies, sample size recommendations range from 5 to 10 for qualitative research (Bertram & Christiansen, 2014). This sampling procedure enables the researchers to obtain in-depth and rich information from the experts with first-hand experience. Du Plooy-Cilliers et al. (2014) uphold that the advantage of purposive sampling method is that the researcher can ensure that each participant will assist with the study objective because each participant fits within the population parameters of the study.

Hence, all participants in this study were suitable subjects as they are required by the curriculum to use teaching aids in their daily teaching activities to enable optimum learning.

### ***Methods of collecting data***

Data collection methods most commonly used in qualitative research are individual or group interviews, observation and document analysis. However, this study employed individual interview and observation methods to collect data. In accordance to du Plooy-Cilliers et al. (2014), interview is a determined interaction when an individual obtains data from another person. Bertram and Christiansen (2014) state that interview enhances collection of more in-depth, detailed and descriptive data from a small number of people. In other words, interview provides the researchers with an opportunity to ask probing and clarifying questions and discusses research participant's understanding in relation to the subject under investigation. It helps the researcher to

gather an important data that cannot be gathered from observation alone. Teachers were interviewed in the afternoon and interviews lasted for 30 minutes.

Bertram and Christiansen (2014) define observation as the process of correcting first-hand information by watching and observing people at a research sites in their ordinary setting. A non-participatory method was used to acquire data on the use of teaching aids in the Environmental Studies teaching and learning process. The non-participatory observation helped researchers to maintain objectivity as they wanted to discover various teaching aids teachers used to help learners learn.

### ***Research instruments***

The study used two instruments to collect data such as observation checklist and interview guide. An observation checklist is a list of questions that an observer used when observing a specific teacher in the classroom. Observation checklist allows the researcher to follow the same order in recording the items or noting the teaching aids that teachers used when presenting their lessons. On the other hand, interview sheet is a list of questions that interviewers used to make sure that they stayed focus and ensure that no question was left unasked. The researchers were therefore of the view that the research instruments chosen for the study were appropriate in gathering the appropriate and detailed data needed for this study.

### **Procedures for data collection**

A proper ethical approach was practiced throughout the study. The permission to conduct this study was sought from the Oshana Regional Council, Directorate of Education, Arts and Culture. The permission was further sought from the authority of the school involved in the study as well as all participants. Introductory meeting was held with the school principal to provide information on the nature of research including the purpose of the study and the condition of participation. This information was provided to potential participants both orally and in writing. Further

ethical principles by which the process of data collection was framed include ensuring the participants of the confidentiality and anonymity of their responses, voluntary participation, informed consent, and permission to withdraw at any stage of the study. The data collected were never linked to the names of individual participants as they were assigned false names. The researchers undertook to adhere to the Helsinki declaration, which emphasizes autonomy, beneficence, non-maleficence and justice (Bertram & Christiansen, 2014).

### ***Data Analysis***

Data analysis is defined as the process of ordering and structuring research data (Bertram & Christiansen, 2014). Analysis of data was done using the thematic approach by classifying various meaningful and relevant responses into categories. The researchers have chosen the thematic method to analyze data as it helped them pinpoint, examine and record themes within dataset that are crucial to the description of the phenomena under study.

## **RESULTS**

. The purpose of this study was to explore the use of teaching aids in Environmental Studies teaching and learning process by junior primary teachers. In line with the research questions, findings are presented under three themes that emerged from the study. These themes are types of teaching aids that teachers use during Environmental Studies, challenges that teachers encounter when using teaching aids and strategies that teachers need to use when using teaching aids during the Environmental Studies teaching and learning process. To maintain confidentiality, teachers were given false names. Results of this study derived from interviews and observations of the participants. This study was guided by these research questions.

1. What are the types of teaching aids that teachers use during Environmental Studies in teaching and learning process?

2. What are the challenges that teachers encounter when using teaching aids in the Environmental Studies’ teaching and learning process?

3. What are the strategies that need to be used when using teaching aids during the Environmental Studies teaching and learning process?

**Participants’ biographical information**

| Participants Names | Qualifications                           | Teaching experience | Grade teaching | Age | Gender |
|--------------------|--|---------------------|----------------|-----|--------|
| Teacher A          | BETD                                     | 15                  | 2              | 45  | Female |
| Teacher B          | BETD +Dipl. in Early Childhood Education | 14                  | 1              | 40  | Female |
| Teacher C          | B.Ed (Hons) Pre-Lower primary Phase      | 2                   | 3              | 28  | Male   |
| Teacher D          | B.Ed (Hons) Pre-Lower primary Phase      | 3                   | 2              | 30  | Female |
| Teacher E          | BETD                                     | 17                  | 1              | 50  | Female |

The sample size of the study consisted of five junior primary teachers made up of one male and 4 female teachers belonging to varying ages such as 28, 30, 40, 45 and 50 years old respectively. On the basis of qualifications, all participants were in possession of professional qualifications ranging from Basic Education Teacher Diploma (BETD) to Bachelor of Education (Hons) in Pre-Lower Primary Education (B.Ed. Hons). With regards to teaching experiences, three participants have more than ten years of teaching experience while two participants have less than five years of teaching experience. On the basis of the grade they teach, two teachers teach Grade 2, another two teachers teach Grade 1, while one teacher teach Grade 3.

***Theme 1: Types of teaching aids that teachers use during Environmental Studies***

Five junior primary teachers were interviewed to indicate the types of teaching aids they use when presenting Environmental Studies lessons. In response, participants explained that they mostly use the traditional teaching aids that are already available in the classrooms like textbooks and chalkboards. They also mentioned other teaching aids such as flipcharts, posters, and pictures that they used to guide them and learners during teaching and learning process. One teacher indicated that she normally makes copies of pictures from the textbooks and give it to learners to share in pairs or groups of six learners.

Excerpts from individual interview transcriptions regarding types of teaching aids used mostly in Environmental Studies teaching and learning are as follows:

*“I mostly use already made teaching aids, pictures, textbooks and chalkboard during teaching and learning process” [Teacher E]*

*“I use mostly pictures and the chalkboard daily during the lesson” [Teacher C]*

However, during observation, the researchers observed that Teacher A did not use any teaching aids during teaching and learning process, neither used the traditional teaching aids that were available in the classroom. Similarly, it was observed that some of the teachers who used teaching aids in the lessons, some of the handmade teaching aids were invisible, unattractive and not age appropriate. For example, one specific blurred picture of internal organs hindered learners learning as they kept asking what the picture was illustrating. It was further observed that teachers have precise perception of teaching aids and its functions.

***Theme 2: Challenges that teachers encounter when using teaching aids in the Environmental Studies teaching and learning process***

When asked about the challenges they encountered in using teaching aids in the Environmental Studies teaching and learning process, participants reported that financial constraints hampered the school to provide teaching aids to junior primary teachers. Three out of five participants felt that time constraints prevented them from designing teaching aids for the learners, while two participants indicated lack of knowledge on how to design appropriate teaching aids. In addition to that, teacher further alluded to lack of space inside the classroom as well as lack of store rooms at school to keep the old teaching materials as the major challenge facing them.

Excerpts from individual interview transcriptions regarding challenges teachers encountered when using teaching aids in Environmental Studies teaching and learning process are as follows:

*“It is hard to design appropriate teaching aids for learners” (Participant B)*

*“I have no space in my classroom to keep all the teaching aids, you can see I have 40 learners in this class” (Participant E)*

*“Environmental Studies period needs to be allocated 80 minutes instead of 40 minutes to enable a teacher to use teaching aids and cover the lesson content before the teaching time lapses” ((Participant C)*

During observation, the researchers observed that one teacher kept the teaching aids on top of the cupboard in a disorganised manner. It was further observed that one teacher who was trying to use her hand made teaching aids could not finish the lesson content on time, so the lesson was not concluded well. It was also discovered that the number of learners exceeded the Ministerial approved teacher: learner ratio of 35

learners per teacher. In all the classes observed, the number of learners ranged from 38 to 41.

***Theme 3: Strategies that teacher need to use when using teaching aids during the Environmental Studies teaching and learning process***

With regards to the strategies that they use, participants shared that learners normally like the pictures/ teaching aids that they made themselves more. Learners feel ownership and it enhances their interest in learning. Thus, teachers indicated that they used to give them homework and ask them to collect pictures from magazines and newspaper that related to the topics. After using them as teaching aids in the lesson, learner pasted these pictures in their books. However, participants reported that some parents complained to the teachers that some learners are cutting pictures from the encyclopedia books at home. In addition, one participant said that she used to design teaching aids together with learners in class.

Excerpts from individual interview transcriptions regarding strategies teachers use when using teaching aids in the Environmental Studies teaching and learning process are as follows:

*"I tell learners to collect external organs pictures of five senses from the magazines and newspapers (Participant A)*

*Learners like their pictures (own collection) best when use das teaching aids: (Participant D)*

During observation, researchers saw learners work (pictures) pasted on the flipcharts on the wall. Some of these pictures were clear and visible, but some pictures were worn out and half hanging and were about to fall out of the wall.

## DISCUSSION

### ***Types of teaching aids that teachers use during Environmental Studies***

The study revealed that teachers have precise perception of teaching aids and its functions. They indicated that they mostly used the common teaching aids such as textbooks and chalkboard though some use flipcharts, posters and pictures. In many occasions, textbooks and chalkboards are the only available teaching aids in most of the schools, especially, now that the new curriculum was introduced in 2016, there is a high possibility that most of the schools do not have enough teaching aids.

The unavailability of different teaching aids in a school hampers learners' exposure to various learning support materials that can foster meaning full learning and mastery of concepts. Thus, poor supply of teaching aids and learning support materials to schools influence the inefficiency delivery of practical teaching of lessons as required by the curriculum at this phase.

Onyango (2014) contend that the use of concrete objects and visual aids give a great deal of hands-on practice with skills that serve as building blocks for more complex skills like reading comprehension. These findings are in line with Durdanovic (2015) and Karaka (2009) study findings that visual aids such as flashcards, tactile aids like dolls and toys help learners learn and acquire new knowledge. Moreover, aids such as charts and pictures enable a child to learn and remember the concepts learnt. They indicate that if materials are displayed well, they pre-occupy the learners when the teacher is not in class and this will enhance children's learning in the absence of the teacher.

### ***Challenges that teachers encounter when using teaching aids in the Environmental Studies teaching and learning process***

Participants reported financial constraints, lack of knowledge to design teaching aids, time limitations and shortage of space in the classroom

and facilities in the school as the major stumbling block to the effective use of teaching aids in the Environmental Studies teaching and learning process. However, the expectation is for schools to have sufficient funds for the implementation of curriculum as required by the National Curriculum for Basic Education because for the past twenty-seven years since Independence the Ministry of Education receive the largest portion of the national budget. For instance, 22% of the total national budget goes to education (MoE, 2014).

The financial constraints towards teaching aids at junior primary phase in schools in developing countries, and specifically in Namibia is not a surprise and it could be attributed to the competition oriented mind set (award of best performing Grades 10 and 12 schools) prevailing in the Namibian Education system. In this case, school principals would not see the need to allocate funds to junior primary phase, but rather allocate more funds to senior grades like Grades 10 and 12 as emphasis is placed more on senior grades than junior phase. However, school principals have a role to play in ensuring that enough resources are allocated to junior primary phase, especially now that schools in Namibia are allocated funds through Universal Primary Education (UPE). Karaka (2007), asserted that principals are in a key position to ensure a successful implementation of the curriculum by showing interest in it, having a positive attitude towards it, maintaining open lines of communication with teaching staff and learners as well as promoting a climate conducive to professional development and learner growth. Training of teachers is a key factor to the effective use of teaching aids. Teachers who are not well trained to design and use teaching aids are not ready to use teaching aids effectively. For not having time to create own teaching aids and not having enough space in the classroom to keep the teaching aids safe compromised the quality of teaching. Rajapaksha and Chathurika (2015) in their study found that teachers who lack time for making teaching aids for each lesson, who lack training on using electronic teaching aids, and who lack knowledge on relating teaching aids to the lesson in the teaching learning process, negatively impacted on the learning of children.

### ***Strategies that teacher use when using teaching aids during the Environmental Studies teaching and learning process***

The study revealed that some teachers use learners to create teaching aids by cutting pictures from the magazines, newspapers or draw pictures themselves. Learners need a personal connection to materials whether that's through engaging them emotionally or connecting new information with previous acquired. Without that, learner may not only disengage and quickly forget, but they may also lose motivation to try. Involving learners in making teaching aids does not only give them an opportunity to actively craft their own teaching aids, but also a chance to learn through all senses. Since 75% of learning is learned by vision/sight, teachers are encouraged to use practical exercises to complement visual learning to increase interest in learners (Pitts, 2012). It was Piaget's belief that the way children ultimately learn is when being active in their learning and that knowledge is not merely transmitted verbally but must be constructed and reconstructed by the learners. In support of this view, Nasab, Esmaeli & Sare, 2015; Rajapaksha & Chathurika, (2015) & Joubish and Khurran (2011) affirmed that teachers need to encourage learners to discover concepts and principles to assimilate and accommodate them in their schemata as they relate them to the immediate environment in every way possible.

### **CONCLUSION AND RECOM MENDATIONS**

The study concludes that teachers have precise perception of teaching aids and its functions. They used few teaching aids in their lessons due to lack creativity skills, knowledge and time limitations. Lack of space in the classroom and inadequate store rooms in the school to keep teaching aids safe and last for a longer period hindered effective use of teaching aids. Moreover, the competition oriented approach forced school management to place more significance on senior grades, resulting in disregarding the junior primary phase, the level that lay foundation for future academic achievements.

***Based on the findings, the study recommends:***

- Training workshops for junior primary teachers focusing on enhancing use of more teaching aids as well as providing proper awareness and training on using different types of teaching aids in the classroom effectively.
- School management to do proper budgeting and purchase teaching aids for junior primary teachers.
- Oshana Directorate of Education to budget for additional store rooms for schools to keep teaching aids safe for a longer period.
- The study further recommends teachers to prepare effective durable and creative teaching aids by allocating more time from their work schedule and using alternative materials.

***Further suggestions for future research***

This study was conducted at junior primary phase only. Future research study can be expanded to senior primary and secondary phases. Since junior primary teachers indicated that they did not have the necessary knowledge and skills on how to design teaching aids and learning support materials, having information about the situation of teachers from other phases can create a better position for the Ministry of Education, Arts and Culture to identify the priority areas in terms of training teachers within this difficult economic situation the country finds itself.

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