

Exploring the Roles and Responsibilities of Secondary School Teachers in the Implementation of the Revised Biology Curriculum

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Abstract:

The purpose of this study was to explore the roles and responsibilities of Secondary school teachers in the implementation of the revised Biology curriculum. In order to gain an in depth understanding of the roles and responsibilities Secondary school teachers in the implementation of the revised Biology curriculum in Ompundja Circuit in the Oshana Region in Namibia, the study employed a descriptive case study design. In this study, the researchers decided to employ a qualitative approach because it provided a better understanding in depth on the topic at hand. The population of this study constituted of all Biology teachers teaching in the Secondary schools of Ompundja Circuit in the Oshana Region, Namibia. A sample of fifteen teachers were purposively selected from five (5) Secondary schools in Ompundja Circuit to participate in this study. The study used the semi-structured face to face interview. The collected data was analysed qualitatively and was transcribed and coded for themes identification and analysis. This study has revealed a variety of important roles and responsibilities that Biology teachers play in enhancing the implementation of the revised Biology curriculum. The study's findings in the Ompundja Circuit, in the implementation of the revised Biology curriculum revealed that Biology teachers actively promote the use of medium of instruction among learners in classroom settings and they use the medium of instruction interaction when collaborating on learners' tasks, either individually or in groups. These teachers also provide feedback, assess learners' performance, develop activities in line with grade-level competencies, plan their teaching strategies, and create instructional materials. The study, further, revealed that lesson planning gives teachers' guidance on how to accomplish their goals and makes it possible for them to satisfy the expectations of their learners as strongly mentioned in the study by participants. On the last note, the study also revealed that teachers in the Ompundja Circuit create a positive learning environment for stimulating teaching and learning.

Keywords: Namibia, Implementation, Ompundja Circuit, Teachers, Roles, Revised Biology Curriculum.

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1. INTRODUCTION

Biology is one of the subjects in the Namibian curriculum and it is offered in Ompundja circuit in the Oshana Region. The region is characterised by a high population of school-going age children with limited teaching and learning resources, which makes it difficult for the successful implementation of the Biology revised curriculum. In spite of this national initiative for the advancement of education in Namibia, the previous teaching experiences of teachers for the revised Biology curriculum continue to be unknown and undocumented. This is particularly the case in Ompundja Secondary schools, where five Secondary schools that are also implementing the revised curriculum still do not have their examination results for most subjects, including Biology trading at a level less than 30 percent.

Teachers play a crucial role and are a defining aspect in the context of curriculum implementation; as such, it is of great importance to learn about their experiences, roles, attitudes, and views in relation to curriculum implementation (Kelly, Wright, Dawes, Kerr & Robertson, 2019). Furthermore, it was also shown that learners' attitudes and behaviours are significantly impacted as well as their academic performance if the curriculum is not grasped properly (Kelly et al., 2019). Moreover, their research did not venture beyond a simple acknowledgement of teachers' role as crucial agents of curricular implementation. In support of this, there has been a source of concern and controversy regarding the minimal consultation with teachers by the drafters of the curriculum (Hakutumbulwa, 2021).

It is against this background that the researcher deemed it crucial to focus on the experiences and roles of Biology teachers at Secondary schools in the Ompundja Circuit as they implement the revised Biology curriculum.

1.1 Research question

What are the roles and responsibilities of Secondary school teachers in the implementation of the revised Biology curriculum in Ompundja Circuit in the Oshana Region in Namibia?

2. LITERATURE REVIEW

2.1 Teachers' roles and responsibilities

While specialists and administrators spend countless hours developing a curriculum, (Stellar, 2016) argues that teachers remain the major pillars in the effective implementation (i.e. teaching and training) of the designed curriculum. The role and responsibilities of teachers in the curriculum implementation process is to help learners to develop an engaged relationship with the content (Makuwa, 2004). Active learning will increase the focus and retention of the curriculum, resulting in an exciting learning environment (Makuwa, 2004). The curriculum process provides an opportunity for teachers to be creative and put their unique stamp on the roles and responsibilities as stated below when implementing the curriculum. Anyiendah (2017) claims that a teacher

is an actor who plays a number of roles and responsibilities such as letting learners to participate in science fairs by giving learners some quizzes to do. Different literatures have posited different teachers' roles and responsibilities such as:

2.1.1 Lesson planning

In his study that looked at the roles and responsibilities of the teacher in the Biology classroom conducted in USA, Finlinson (2016) explains that a teacher designs a detailed lesson plan based on specific lesson objectives that are stipulated in the syllabus, by preparing different types of activities that meets the needs of all learners. Through writing a lesson plan, teachers design the appropriate teaching materials and provide instructional strategies needed for their learners. Teachers' participation in planning lessons makes it easier for them to set the appropriate time for how long each activity might take. In his article that discussed the formulation of a lesson plan, Al-Zoubi (2018) states that the specific lesson objectives stipulated in the syllabus are specific knowledge or skills that learners should master by the end of the lesson or unit and this makes it easier for teachers to spot out what learners are expected to know at the end of the lesson or unit. He further posits that each day should have an overall purpose or goal that learners should be able to accomplish by the end of the class period.

Additionally, Shikongo (2020) , explains that although it is the role and responsibility of the Biology teachers to carefully plan lessons that will give learners the chance to contextually practice the Biology, through lesson planning, teachers also develop flexibility to meet the present needs of the learners. Sharing the same sentiment, Kruss (2016) argues that Biology teachers need to be flexible to adapt plans and change course if the learners are showing signs of misunderstanding, boredom, or frustration during lesson presentations.

In a research project conducted in Ghana on the implementation of the basic curriculum for Biology by Torto (2017), asserts that lesson plan is the initial teaching and learning material that is prepared to facilitate the teaching and the learning situation effectively. He further, claims that for a teacher to implement a new curriculum, his or her preparation for the lesson is very crucial. If the teachers do not prepare the lesson plans, their teaching becomes difficult since the lesson preparation is a systematic guide as to how the teacher's lesson should unfold (Torto, 2017). In another research study by Bond (2017), it was found that those teachers who do not prepare their lessons due to various reasons, encountered challenges in their implementation of the Biology curriculum in Ghana. Closely linked to that, Manyarara (2015) in a study conducted in Zimbabwe argues that lesson planning assists teachers to achieve what they want and direct them on how to deliver the subject content to learners. Lesson plan assist teachers on actual teaching and help teachers to evaluate on how successful the lesson was. It is through lesson planning that teachers evaluate their weakness and strengthens and if there are weakness, the teachers have to re-teach that topic.

In Namibia, the Ministry of Basic Education, Arts and culture (MoEAC, 2019), The National Policy for Natural Science clearly states that written lesson preparation is compulsory for every teacher, irrespective of experience. It further asserts that a successful lesson plan should include the date, time, theme and topic, teaching and learning materials, lesson objectives and basic competencies to be achieved. Furthermore, the presentation part of the lesson plan should consist of the following: a short appropriate introduction, monitoring of homework, presentation of the subject content and a suitable conclusion (MoEAC, 2019). In addition, the policy emphasises that after lesson delivery, the teacher should write critical reflection on the lesson, noting how teaching strategies could be changed to meet the lesson objectives (MoEAC, 2019). Besides that, Carlson (2018) also notes that if a teacher is well prepared for the lesson, the delivery of the lesson is done smoothly. She also argues that a well-prepared teacher will not get stuck in the middle of the lesson because the teacher knows how to manoeuvre to get through the lesson.

The above arguments seem to indicate that lesson planning serves as a useful tool for the Biology teachers in enhancing their learners' performance. Effective planning should also be reflected in every Biology teacher's classroom management for the effective implementation of the Biology revised curriculum (Brodier, 2019).

2.1.2 Classroom management

In a study conducted in India on the role and responsibility of a teacher in teaching Biology as a science subject, Carlson (2018) explains that the teacher's role and responsibility as a manager is to manage the classrooms effectively. Classroom management is an essential role for teachers when presenting their lessons in classrooms because it maximizes appropriate behaviours among learners (Carlson, 2018). Cooney et al., (2019) asserts that effective classroom management creates a positive conducive environment that enhances learners to perform very well academically. Moreover, they claim that perfect classroom management enables Biology teachers to facilitate the learners while performing different activities in the classroom. Furthermore, effective classroom management makes teachers to manage the time effectively to cover the syllabus within the given time limit and also evaluates the learners' performance (Archana & Rami, 2019).

In the same vein, Farhana and Muhammad (2016) have emphasized the importance of classroom management in realising learners' outcomes. They indicate that through effective classroom management, teachers are able to motivate their learners to study hard and perform very well at their schools. Interestingly, De Nobile, Lyons, and Arthur-Kelly (2017) believes that classroom management is more inclusive of the elements of creating a positive learning environment. De Nobile et al. (2017) further asserts that classroom management develops and maintains a positive learning environment for learners to learn best. Therefore, a teacher needs to create a supportive learning environment that embraces diversity and is culturally sensitive for all learners (De Nobile et al., 2017). De Nobile et al., further stated that classroom management creates a

positive learning environment for effective teaching and learning, and establishing a positive classroom climate is the key for helping all learners to achieve success.

In a research study conducted in Kenya, Jepketer, Kombo and Kyalo (2015) postulate that effective classroom management bestows in learners a sense of responsibility, self-control and realisation of optimal learning. Similarly, Pearson (2021) argues that effective classroom management does not only has direct consequences for good academic outcomes, but also foster healthy social and emotional development in learners. It is thus necessary to create a positive conducive classroom environment for the learners to perform well academically.

The Learning Support Teacher's Manual, (MoEAC, 2014) defines classroom management as means of establishing and maintaining a routine in the classroom that allows teaching and learning to proceed effectively. It further highlights that through classroom management, a smart teacher plans everything from the seating arrangement to what happens when the bell rings at the end of the period. Furthermore, teachers should create classroom environment that enables learners to work both independently and collaboratively, while ensuring that timetable, planned activities and suitable teaching and learning resources are effectively managed through the lesson.

In the same line of view, Nkandi (2015) indicates that among the efforts towards creating school environments that are conducive to teaching and learning, the Namibian government has instituted the Education Act (2001), (MoEAC, 2001) which comprehensively stipulates the code of conduct for the Teaching Service Staff that is relevance to both teachers and learners. He further points out that the objectives of the Code of Conduct for the Teaching Service Staff (MoEAC, 2001) are that teachers are generally expected to, among others things: (1) Establish a safe, disciplined and purposeful school environment dedicated to the improvement and maintenance of the quality of the learning and teaching process. (2) Create a caring and nurturing environment for learners to enable them to develop into caring, honest and responsible adults. Moreover, Nkandi (2015) elucidates that Educational Acts, policies, plans, and programs are set to improve the quality of education in terms of ensuring a conducive environment for teaching and learning. However, how teachers play their role within the classrooms could influence the situation regarding class management (Pick, 2018). To add on, Sayan and Mertoğlu (2020) suggests that, Biology teachers should engage in appropriate professional development to learn how to manage their classrooms more effectively and create a more stimulating learning environment.

2.1.3 Teaching and learning materials

According to Khan, Salahuddin and Rahma (2020) teaching and learning materials are very essential to motivate learners towards learning and to capture the content of Biology knowledge easily. Khan et al. (2020) further acknowledge that a stimulating atmosphere for Biology teaching can be created by displaying posters, charts, maps, advertisements, timetables and signs together with works produced by the learners themselves in the

classroom. In fact, teaching and learning materials that can be used in a Biology classroom are enormous and their use would be suitable and appropriate to the learners' needs (Alderman, 2016). Sharing the same sentiment, Küçükler and Kodal (2018) in their study conducted in Turkey stress that to ensure effective learning of Biology in classes, teaching and learning materials such as cards, posters, maps, and textbooks should be used.

On the contrary, Alderman (2016) assume that electronic teaching and learning materials communicate better in Biology than using traditional teaching and learning materials. Bajrami and Ismaili (2016) posit that Biology teachers should use computers, note pads, projectors, and audio-visual tools to facilitate the teaching process in order to enhance the performance of their learners in classrooms. Similarly, Archana and Rami (2019) points that using the video materials in teaching Biology helps learners to perform better. Besides that, using video materials enhances learners' attention span resulting in better retention of the Biology content (Alberto & Troutman, 2010).

In a South African context, Bester and Brand (2018) propound that although no technology is able to replace the role of the Biology teacher in the classroom, it can however be successfully integrated into lessons which could maximize the learning experience since technology is being becoming an integral part of the life world of today's learners.

Assuredly, having brought up with technology, present day learners are more used to absorbing information from the screens than from the printed pages, and learners finds teachers who use technology to be more reliable and knowledgeable than those who do not (Bester & Brand, 2018).

In a study that investigated the teaching and learning materials availability and teachers' content delivery in Secondary schools in Rwanda, Orodho and Benjamin (2021) established that the challenges of unavailability and inadequacy of electronic teaching and learning materials was found to negatively affect teachers' effectiveness in the use of teaching methods as well as learners' attainment of good academic results in Biology. Therefore, Orodho and Benjamin (2021) recommend that teachers should fulfill the needs of all learners by playing the role of the technology teaching and learning materials which are visually attractive and auditory stimulating.

According to Nkandi (2015), for the purpose of obtaining excellent performance, Namibia's Ministry of Education, Art and Culture has developed a National Standard for Schools, a regulatory framework that includes the School Development Plan (SDP) and Plan of Action for Academic Improvement (PAAI). He further asserts that one of the Key Performance Indicators contained in these documents include, among others the provision of resources (e.g. adequate physical resources and teaching and learning materials). In a similar vein, (MoEAC, 2019), reports for Namibia to respond to providing suggested actions and undertake quality education, ensuring adequate infrastructure and providing teaching and learning materials in schools is the key to be performed. Moreover, the Curriculum for Basic Education of (Ministry of Education, Arts and

Culture (The National Curriculum for Basic Education, NIED 2016), stated that Biology teachers that do effective learning and teaching are closely linked to the use of teaching and learning materials such as books, posters, charts and media like radio, newspapers and audios.

Furthermore, Biology teachers were urged to select and develop the most appropriate teaching materials and media for the learners to enrich and reinforce Biology learning (Ministry of Education, Arts and Culture (The National Curriculum for Basic Education, NIED 2016). Coupled with the above arguments, Simasiku (2017) also notes that good Biology teachers enter the classroom with prepared teaching and learning materials, knowledge, capability and ambition to take one more Biology learner up to standard. All these arguments appear to imply that the quality of Biology teaching and learning is directly related to the quality of teaching and learning materials that Biology teachers use in Biology classrooms.

2.1.4 Assessment and evaluation

According to Sumardi (2017), most researchers have acknowledged that in the learning process, assessment is a role and responsibility of the teacher gathering information related to the learners' learning progress in order to improve their process in teaching; hence it can improve the learners' performance. In their research studies conducted in Turkey, Mellati & Khademi, (2018), argue that assessment reveals how many learners have achieved the learning objectives in a particular subject content, how many have difficulties or problems with learning that particular subject content, and techniques that are useful in teaching that subject content. In addition, assessment helps teachers to evaluate the strengths and weakness of learners and motivate them, and provide teachers with useful feedback about learners' subject content acquisition (Joel & Ruhan, 2016).

Torto (2017), in a study conducted in Ghana that looked at the implementation of the basic curriculum, asserts that continuous assessment is a mean of measuring what the learners knows and have learned, as well as giving feedback to the learners. Torto (2017), further mentions that continuous assessment is essential for the Biology teachers to judge learners' achievement and weaknesses in Biology. In the same vein, Sethusha (2018) adduces that South Africa's Curriculum and Assessment Policy Statement (CAPS) requires teachers to use continuous assessment to identify, assess and provide learning support to learners who might experience barriers to learning and development. Moreover, teachers are expected to use both formal and informal assessments to ensure that assessment is accurate, objective and fair and has used clearly defined learning outcomes and assessment standards to plan for formal assessment tasks.

According to Hamakali and Lumbu (2016), assessment in Namibian schools remains largely depending on summative assessment results. They argue that even though the Towards Improving Continuous Assessment in Schools policy guide (Ministry of Basic Education and Culture, 1999) provides guidelines on the use of a variety of assessment tools in Namibian schools, all teaching is geared towards national

examinations, the final product, with little focus on the learning process, as it relies largely on summative assessment. In the same view, Zannier and Lumbu (2016) maintain that the Towards Improving Continuous Assessment in Schools (Ministry of Basic Education and Culture, 1999) guide prescribes the nature and frequency of summative assessment, but gave limited information on formative assessment.

Based on Hamakali and Lumbu (2016) and Zannier and Lumbu's (2016) arguments, the policy on assessment guidelines appears to have overlooked at the major roles of the teachers through formative assessment in the teaching and learning process. However, through Formative assessment, the Biology teachers would collect information about each of their learners, through a variety of activities which will help them to assess the learning progress of learners and identify those learners that are struggling and adjust their teaching to support, thus enhancing the performance of learners in Biology.

3. RESEARCH METHODOLOGY

3.1 Research design

In order to gain an in depth understanding of teachers' experiences and roles and responsibilities in the implementation of the revised Biology curriculum of Secondary schools in Ompundja Circuit in the Oshana Region in Namibia, the study employed a descriptive case study design. According to Albert (2021), descriptive case studies are those that have a specific occurrence and examine in great depth, making participants framing their initial hypotheses and research objectives in clear, specific language. In this research study, the descriptive case study investigated the real-life phenomenon of the teachers' experiences and roles and responsibilities in the implementation of revised Biology curriculum in the Ompundja Circuit, Oshana Region, Namibia.

In this research study, the researchers decided to employ a qualitative approach because it provided a better understanding in depth on the topic at hand, by examining the teachers' experiences and roles and responsibilities in the implementation of the Biology revised curriculum.

3.2 Population of the study

According to Johnson and Christensen (2020), population refers to the large group to which a researcher wants to generalize the sample results from the total group that the researcher is interested in learning more about. The population of this study constituted of all Biology teachers teaching in the Secondary schools of Ompundja Circuit in the Oshana Region, Namibia.

3.3 Sample and sampling technique

A sample refers to the number of individuals, items or events selected from a population in such a way that they are characteristically representative of that population (Somekh & Lewin, 2018). This research study made use of a purposive sampling technique to select

the participants. A sample of fifteen teachers were purposively selected from five (5) Secondary schools in Ompundja Circuit to participate in this study.

3.4 Research instruments

The study used the semi-structured face to face interview schedules as a research instrument, as they are advantageous in that, they have the capacity to acquire a large number of relevant data. The researchers used a voice recorder and notebook to record and jot down participants' responses.

The significance of one-on-one interviews is that it allows the researchers to ask in-depth questions while simultaneously enabling the participants to explain further and go beyond the initial question. An in-depth face to face interview was done individually and in the same manner with every participant until the data collection was completed.

3.5 Data analysis

The collected data was analysed qualitatively and was transcribed and coded for themes identification and analysis. Data analysis is an essential part of the research study. Baker (2019) states that data analysis is all about making a series of deliberate, critical choices about the meanings and values of the data gathered and make justified decisions in terms of research.

3.6 Findings

The roles and responsibilities of teachers

Participants were asked to indicate the roles and responsibilities that Biology teachers play in the implementation of the revised Biology curriculum. Their responses indicated several reasons such as teachers are motivators, learners' assessors, planners for the subject content, developers of activities and teaching materials, creators of a positive learning environment as well as engaging learners in extra mural activities.

Category 1: Motivation of learners

Under this sub-theme, all the participants were asked a follow-up question(s) related to the motivation as one of their role and responsibility in implementing the revised Biology curriculum. The research findings show that teachers motivate their learners to learn by providing them with positive feedback, in order to develop competence.

In line with this sub-theme, Teacher 6 had this to say,

Biology teachers are motivators and grammar correctors, so they motivate learners to practice and use Biology more often at school and eventually develop the love for Biology.

This was also supported by Teacher 2 who explained that:

Teachers motivate their learners to learn by providing them with positive feedback, in order to develop competence.

She further stated that:

Providing feedback enables learners to gain control over their own learning and a sense of belief about their abilities. Teachers who provide feedback to learners about their efforts give them the idea that through hard work, they can achieve tasks and do well.

The issue of motivation was supported by HOD 1 who said that:

They motivate learners to actively participate in Biology lessons by making them to work in pairs or groups.

He further stressed that:

Biology is best learned in collaboration and communication among learners, who can help each other while working on different tasks in the classroom.

Moreover, Teacher 8 expressed the view that:

The teacher's role in enhancing performance is to motivate learners to practice Biology and eventually develop the love for Biology.

With regard to the above responses from participants, motivation is regarded as one of the primary components that contributes to well performance among the learners.

Category 2: Learners' assessor

The following citations from the participants in the study show how most Biology teachers feel about their role as assessors for learners during the teaching and learning of Biology. Teacher 3 explained that as follows:

Biology teachers have a role of assessing learners formally and informally.

Similarly, Teacher 13 said that:

Teachers enhance performance by ensuring that learners have achieved the required competencies in the syllabus. They prepare and assess activities that are in line with the competencies of that grade.

Teacher 15 also stressed his opinions that:

As teachers, we ensure that learners have achieved the required competencies of the syllabus and that all skills are equally taught and assessed. It is the teacher's role to make Biology as a subject more enjoyable and loved by learners. So, teachers are mediators between school and parents about learners' progress.

Sharing the same sentiment, HOD 9 said that:

Teachers enhance the performance of learners through correction and giving feedback so that learners may also find ways to improve their performance.

The findings from participants are showing that assessment in the learning process is a role and responsibility of the teacher in gathering information related to the learners' learning progress, in order to improve their process in teaching; hence it can improve the learners' performance.

Category 3: Planner for the subject content

During the interview, participants were asked about their roles and responsibilities on planning for the subject content. Their responses showed that Biology teachers plan lessons that give learners the chance to contextually practice the Biology and also develop flexibility to meet the present needs of the learners. In agreement with the above, participants lamented about the role and responsibilities of Biology teachers as a subject planner.

Teacher 4 expressed stated that:

Biology teachers play a role of planning for the subject content to be covered and develop the materials to be used.

On the same note, HOD 12 echoed that:

Teachers prepare lesson which helps them to know what they want their learners to achieve and also direct them on what to do and how best they may achieve their objectives.

Furthermore, Teacher 5 supported the role and responsibility of the teacher as a planner that,

We plan lessons and through lesson planning, the teacher is able to meet learners' expectations and also focus more on the basic knowledge first before taking them towards the next step.

Similarly, Teacher 14 also had to say this on the issues of planning that:

In planning, we compile a lesson plan that server as a guide that a teacher uses every day to determine what learners will learn, how the lesson will be taught as well as how learning will be evaluated.

He stated further that:

Whether the Biology teacher is novice or experienced, there is always a need for a lesson plan because every group of learners comes with its own challenges.

In the words of Teacher 7:

There is no way a teacher can teach without planning the lesson. Planning a lesson gives a teacher variety of teaching methods to meet different learners' needs.

HOD 11 also echoed the view that:

When teaching, we use lesson plans which enable teachers to function more effectively in the classrooms by giving a detailed outline that teachers adhere to during each class.

In emphasizing the role and responsibility of planning, Teacher 7 said that:

A teacher who fails to prepare, prepares to fail.
According to him, an organised teacher is always able to deliver the lesson within the given time frame.

The above responses indicate that if teachers are well prepared for the lessons, the delivery of the lesson is done smoothly.

Category 4: Developer of activities and teaching materials

This sub-theme focused on presenting results regarding the developer of activities and teaching materials as it is part of their roles and responsibilities. The verbal responses regarding developing activities and teaching materials are presented below.

HOD 10 pointed out that as follows:

I believe that learners learn best by looking at activities that have pictures when they are learning, therefore there is always a need for me to develop activities and teaching aids such as posters with pictures or sight words as well as bringing along concrete materials to the lesson.

Other reason given by Teacher 2 on the role and responsibility of developing activities and teaching materials was that:

Developing activities and teaching materials are very important in the teaching and learning of Biology.

Subsequently, Teacher 3 also said that:

Biology teachers develop enrichment activities for faster learners, and supportive materials for the slow ones.

Teacher 4 expressed the view that:

Biology teachers have to use materials to teach learners to read with understanding instead of memorising. Biology teachers correct learners and give them feedback that contributes to their language development and improved performance.

HOD 11 also said that:

It is the role of a Biology teacher to develop activities and teaching materials for his/her learners because learning materials makes the lesson interesting, learning becomes easier and enable the teacher to easily explain concepts to learners, thus enhances learners' achievement.

Based on the researcher's life experience as a student and a teacher, the contribution of developing activities and teaching materials to the teaching process is manifold, and effective use of teaching and learning resources makes the process more attractive, interesting and modern, and, most importantly, it aids the learners in the processes of enhancing their intellectual and emotional capacities. The results of the research shows that teachers are positive in developing activities and teaching materials for effective teaching and learning for their learners.

Category 5: Creator of a positive learning environment

This sub-theme presented research results on creating a positive learning environment. The results show that teachers are dedicated to create a positive learning environment for effective teaching and learning to take place. Teachers' verbatim responses regarding creating a positive learning environment are as follows:

Teacher 3 stated that:

Biology teachers are creators of a positive learning environment where everyone is free to learn without any fear or intimidation.

Similarly, HOD 1 also said that:

Biology teachers have a role for creating a positive environment in their classroom which allows learners to feel comfortable, safe and engaged.

Another Teacher 15 said that:

I believe that a teacher has a role of creating a positive environment for learners to learn as a team, celebrate each other's achievements and also learn from their mistakes.

Put simply, participants feel that it is the role of a Biology teacher to make the classroom an environment where learners feel comfortable, where healthy relationships with peers and teachers flourish. In a positive learning environment, the process of learning becomes easier to adapt to and learners always look forward to participate in lessons freely.

Category 6: Engages learners in extra mural activities

From the interviews that were conducted, all participants acknowledged that their role and responsibility is to engage learners in extra mural activities. Here are participants'

responses during the interviews. Teacher 2 explained how Biology teachers engage learners into extra mural activities:

Biology teachers have a role to engage learners in debating clubs, quizzes, tests, spelling and reading competitions as well as helping them to model the language structures and rules.

Supporting the same view, Teacher 7 asserted that:

Most Biology teachers are role models as they should discuss Biology with their learners all the time. Biology teachers engage learners in activities such as debating club and quiz competition and reading competition that help learners to improve their speaking skills.

Based on the interview responses, it shows that Biology teachers plays a number of roles and responsibilities in an education system such as motivating learners, assessing learners, planning lessons, developing activities and teaching materials, creating positive learning environment as well as engaging learners in extramural activities. In order to get an excellent learning outcomes, the Biology teachers must perform all these duties within each single lesson.

4. DISCUSSION OF FINDINGS RELATED TO ROLES AND RESPONSIBILITIES OF TEACHERS

Participants were asked to indicate the roles and responsibilities of the Biology teachers in the implementation of the revised Biology curriculum and their responses indicated several roles and responsibilities such as teachers are motivators, learners' assessors, planners for the subject content, developers of activities and teaching materials, creators of a positive learning environment as well as engaging learners in extra mural activities. In the first instance, the research findings showed that teachers motivate their learners to learn by providing them with positive feedback, in order to develop competence. These findings concur with Adolphus (2020) who also notes that although learners are born with the natural ability to learn, much depends on the teachers' involvement.

Adolphus (2020) further mentions that sometimes, learners' energy, drive, and enthusiasm for a subject or task may wane and therefore require continued reinforcement

through external support. The findings further supports the findings of Adolphus (2020) who conceptualises motivation as an innate desire that drives individuals to participate in an activity because of the satisfaction derived from it. Adolphus (2020) further states that another view of motivation suggests that it is a goal-directed learning, which stimulates and guides individuals toward a particular direction. Furthermore, the findings of this study on teachers as assessors reflect that assessment in the learning process is a role of the teacher to gather information.

The findings concur with a study conducted by Sumardi (2017) who posit that most researchers have acknowledged that in the learning process, assessment is a role of the teacher to gather information related to the learners' learning progress in order to improve their process in teaching; hence it can improve the learners' performance. Other studies supporting the findings on the roles of teachers as assessors are research studies conducted in Turkey and Australia respectively, by Mellati & Khademi, (2018), who argues that assessment reveals how many learners have achieved the learning objectives in a particular subject content, how many have difficulties or problems with learning that particular subject content, and which techniques are useful in teaching that subject content. In addition, assessment helps teachers to evaluate the strengths and weakness of learners and motivate them, and provides teachers with useful feedback about learners' subject content acquisition (Joel & Ruhan, 2016).

The findings also concur with Torto (2017), who stated that that continuous assessment is essential for the Biology teachers to judge learners' achievement and weaknesses in Biology. The findings also concur with Sethusha (2018) who adduces that South Africa's Curriculum and Assessment Policy Statement (CAPS) requires teachers to use continuous assessment to identify, assess and provide learning support to learners who might experience barriers to learning and development. Moreover, teachers are expected to use both formal and informal assessments to ensure that assessment is accurate, objective and fair and has used clearly defined learning outcomes and assessment standards to plan for formal assessment tasks.

Participants in the present research study revealed that teachers have a role and responsibility of planning subject content to enhance teaching Biology. The findings align with Finlinson (2016) who explains that a teacher designs a detailed lesson plan based on specific lesson objectives stipulated in the syllabus, by preparing different types of activities that meets the needs of all learners. Through writing a lesson plan, teachers design the appropriate materials and provide instructional strategies needed for their learners. Teachers' participation in planning lessons makes it easier for them to set the appropriate time for how long each activity might take (Finlinson, 2016).

In his article that discussed the formulation of a lesson plan, Al-Zoubi (2018) states that the lesson objectives stipulated in the syllabus are specific knowledge or skills that learners should master by the end of the lesson or unit and this makes it easier for teachers to spot out what learners are expected to know at the end of the lesson or unit. He further posits that each day should have an overall purpose or goal that learners should be able to accomplish by the end of the class period. Additionally, Shikongo (2020), explains that

although it is the role and responsibility of the Biology teachers to carefully plan lessons that will give learners the chance to contextually practice the Biology, through lesson planning, teachers also develop flexibility to meet the present needs of the learners.

Sharing the same sentiment, the findings of the study are in line with the research project conducted in Ghana on the implementation of the basic curriculum for Biology by Torto (2017), who asserts that lesson plan is the initial teaching and learning material that is prepared to facilitate the teaching and the learning situation effectively. He, further, claims that for a teacher to implement a curriculum, his or her preparation for the lesson is very crucial. If the teacher does not prepare the lesson plan, their teaching becomes difficult since the lesson preparation is a systematic guide as to how the teacher's lesson should unfold (Torto, 2017).

In another research study conducted by Bond (2017), it was found that those teachers who do not prepare their lesson due to various reasons, encountered challenges in the implementation of the Biology curriculum in Ghana. Closely linked to that, Manyarara (2015) in a study conducted in Zimbabwe argues that lesson planning assists teachers to achieve what they want and direct them on how to deliver the subject content to learners. Lesson plan assists teachers on actual teaching and helps teachers to evaluate on how successful the lesson was. It is through lesson planning that teachers evaluate their weaknesses and strengthens and if there are weakness, the teacher has to re-teach that topic.

In Namibia, MoEAC (2019), The National Policy for Natural Science clearly states that written lesson preparation is compulsory for every teacher, irrespective of experiences. It further asserts that a successful lesson plan should include the date, time, theme and topic, teaching and learning materials, lesson objectives and basic competencies to be achieved.

Furthermore, the presentation part of the lesson plan should consist of the following: a short, appropriate introduction, monitoring of homework done, presentation of the subject content and a suitable conclusion (MoEAC, 2019). In addition, the policy emphasises that after lesson delivery, the teacher should write critical reflection on the lesson, noting how teaching strategies could be changed to meet the lesson objectives (MoEAC, 2019).

Besides that, Carlson (2018) also notes that if a teacher has well prepared for the lesson, the delivery of the lesson is done smoothly. She also argues that a well-prepared teacher will not get stuck in the middle of the lesson because the teacher knows how to manoeuvre to get through the lesson. The above arguments seem to indicate that lesson planning serves as a useful tool for the Biology teachers in enhancing their learners' performance. Effective planning should also be reflected in every Biology teacher's classroom management (Brodier, 2019).

Participants in the present research study revealed that teachers develop teaching and learning resources to enhance teaching Biology as it is one of their roles and responsibilities in the teaching profession. The findings align with Khan, Salahuddin and

Rahma (2020) who states that teaching and learning materials are very essential to motivate learners towards learning and to capture the content of Biology knowledge easily.

Khan et al. (2020) further acknowledge that a stimulating atmosphere for Biology teaching can be created by displaying posters, charts, maps, advertisements, timetables and signs together with works produced by the learners themselves in the classroom. In fact, teaching and learning materials that can be used in a Biology classroom are enormous and their use would be suitable and appropriate to the learners' needs (Alderman, 2016). Sharing the same sentiment, Küçükler and Kodak (2018) in their study conducted in Turkey stress that to ensure effective learning of Biology in classes, teaching and learning materials such as cards, posters, maps, and textbooks should be used.

The findings support the findings of Alderman (2016) who assume that electronic teaching and learning materials communicate better in Biology than using traditional teaching and learning materials. Bajrami and Ismaili (2016) posit that Biology teachers should use computers, note pads, projectors, and audio-visual tools to facilitate the teaching process in order to enhance the performance of their learners in classrooms. Similarly, Archana and Rami (2019) points out that using the video materials in teaching Biology help learners to perform better. Besides that, using video materials enhances learners' attention span resulting in better retention of the Biology content (Alberto & Troutman, 2010).

In a South African context, Bester and Brand (2018) propound that although no technology is able to replace the role of the Biology teacher in the classroom, it can however be successfully integrated into lessons which could maximize the learning experience since technology is being becoming an integral part of the life world of today's learners. Assuredly, having brought up with technology, present day learners are more used to absorbing information from the screens than from the printed pages, and learners finds teachers who use technology to be more reliable and knowledgeable than those who do not (Bester & Brand, 2018).

In a study that investigated the teaching and learning materials availability and teachers' content delivery in Secondary schools in Rwanda, Orodho and Benjamin (2021) established that the challenges of unavailability and inadequacy of electronic teaching and learning materials was found to negatively affect teachers' effectiveness in the use of teaching methods as well as learners' attainment of good academic results in Biology. Therefore, Orodho and Benjamin (2021) recommend that teachers should fulfill the needs of all learners by playing the role of the technology teaching and learning materials which are visually attractive and auditory stimulating.

The creating of a positive learning environment in the research study was found as a key aspect and crucial for Biology teachers in their classrooms. The findings are in line with De Nobile et al., (2017) who further stated that classroom management creates a positive learning environment for effective teaching and learning. Establishing a positive classroom climate is the key for helping all learners to achieve success. As De Nobile et al., (2017) further states that a teacher needs to manage his or her class in order to create

a supportive environment that embraces diversity and culturally sensitive. Put simply, participants feel that it is the role and responsibility of a Biology teacher to make the classroom an environment where learners feel comfortable, where healthy relationships with peers and teachers flourish. In a positive environment, the process of learning becomes easier to adapt to, and learners always look forward to participate in lessons freely.

The findings of the study revealed that all participants acknowledged that teachers play a role in creating a positive classroom environment which enhancing the performance of their learners. All Biology teachers purported that Biology teachers are mediators between the school and home, and they also create a positive learning environment for learners to learn.

The engagement of learners in extra mural activities in the research study was found as a key aspect and crucial for the implementation of revised Biology curriculum. The findings concur with Anyiendah (2017) who claims that a teacher is an actor who plays a number of roles and responsibilities such as letting learners to participate in science fairs by giving learners some quizzes to do.

5. CONCLUSION

This study has revealed a variety of important roles and responsibilities that Biology teachers play in enhancing the implementation of the revised Biology curriculum. The study's findings in the Ompundja Circuit, in the implementation of the revised Biology curriculum revealed that Biology teachers actively promote the use of medium of instruction among learners in classroom settings and they use the medium of instruction interaction when collaborating on learners' tasks, either individually or in groups. These teachers also provide feedback, assess learners' performance, develop activities in line with grade-level competencies, plan their teaching strategies, and create instructional materials. The study, further, revealed that lesson planning gives teachers' guidance on how to accomplish their goals and makes it possible for them to satisfy the expectations of their learners as strongly mentioned in the study by participants. On the last note, the study also revealed that teachers in the Ompundja Circuit create a positive learning environment for stimulating teaching and learning.

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