A STUDY ON GRADE 12 TEACHERS' UNDERSTANDING AND APPLICATION OF REFLECTIVE TEACHING AND LEARNERS' PERFORMANCE IN THE ZAMBEZI REGION

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BY

Limbo Enock Simasiku

200019791

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Main supervisor: Dr. D. Wolfaardt

University of Namibia

Co-supervisor: Dr. J. Nyambe

University of Namibia

ABSTRACT

Grade 12 learners' academic performance remains a concern in the Zambezi Region since 2010. The Region has lagged to the bottom of the national rankings in the Namibia Senior Secondary Certificate Ordinary (NSSCO) level results consecutively in four academic years: 2013, 2014, 2015 & 2016 (Ministry of Education, Arts and Culture, 2010 - 2016). The (NSSCO) level results of 2017, 2018, 2019 and 2020 were not different from this observed trend.

This study identified the lack of reflective teaching as one of the factors that contributes to poor performance of leaners, among others. Reflective teaching should be viewed as a teachers' tool for professional growth and development, rather than a stumbling block in the day to day teaching / learning activities. Though there are other variables that are known to influence learners' academic performance, this study focused on the teachers' understanding and application of reflective teaching and its influence on learners' academic performance. Literature indicates the need for teachers to engage in reflective teaching in order to enhance learning and the academic performance of learners.

The study followed a mixed methods case study design. In this study, the target population were all senior secondary school (Grade11-12) teachers in the Zambezi educational region. A purposively selected sample of five senior secondary schools out of ten was considered for this study. Stratified purposive sampling was applied in selecting the fifteen teachers to participate in this study. The school principals automatically constituted the sample of the study which implied that the inclusive sample of this study was twenty participants (teachers and principals included).

In this study, the theoretical premises and the methodological solutions are influenced by three theories that align closely with reflective teaching, learners' performance and

view learning and teaching as a constructed phenomenon; namely the social constructivism theory, cognitive constructivism theory and the metacognition theory.

Instruments that were used to identify teachers' reflective teaching skills were: Reflective Teaching Closed and Open - ended Questionnaire (RTCOEQ) Appendix A for teachers, Reflective Teaching Lesson Observation Checklist (RTLOC) Appendix B for teachers and the Reflective Teaching Interview Schedule (RTIS) Appendix C for teachers and principals. In this study, common trends in the data collected were analysed by adapting the steps developed by Creswell and Clark (2018) for data analysis.

The findings of this study revealed that teachers were not well trained to effectively execute reflective teaching in their classes. Teacher who endeavoured to apply reflective teaching complained that lack of time and equipment prevented them from effectively applying reflective teaching. Some school principals' definition of reflective teaching confirmed the need to equip teachers with skills and knowledge in reflective teaching. This led to the conclusion that the current observed poor performance of grade 12 learners in the NSSCO examinations in the Zambezi region is directly or indirectly related to the absence of effective reflective teaching in that region. It was therefore recommended that opportunities be availed where teachers can upgrade their skills and knowledge on reflective teaching. In response to the identified needs of teachers' in reflective teaching, this study produced a tool (a teacher's guide in reflective teaching) to help guide teachers in executing reflective teaching. Further research is recommended into what evidence and criteria shape judgements about reflective teaching and how the school based staff may effectively incorporate reflective teaching in their daily learning and teaching activities.

Key Concepts

Reflective teaching

Social constructivism theory

Cognitive constructivism theory

Metacognition theory

Critical reflection

Reciprocal Teaching

Efficacy

Community of enquiry

Teaching as assisted performance

Zone of Proximal Development (ZPD)

Procedural facilitation

Scaffolding

Reflective teaching

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Nobody has been more important to me in the pursuit of this project than the members of my family. I wish to thank my loving and supportive wife, Susanna and my three wonderful children, Mia, Oscar and Evan for providing me with unrelenting inspiration to never give up.

DEDICATION

I dedicate this piece of work to my three children (Maria Mia Simasiku, Oscar Simasiku Simasiku and Evan Tanga Simasiku) for the inspiration they (innocently) provided to me during my studies. Their presence in my life has inspired me to work smart and tirelessly for their sake.

DECLARATION

I, Limbo Enock Simasiku, hereby declare that this study is my own work and is a true reflection of my research, and that this work, or any part thereof has not been submitted for a degree at any other institution.

ACRONYMS

Bed Hon	Bachelor of education Honors' Degree
BETD	Basic Education Teachers Diploma
CPD	Continuing Professional Development
H.E	Higher Education
MASTEP	Mathematics and Science Teacher Extension Programme
MBEC	Ministry of Basic Education Sports and Culture
MoEAC	Ministry of Basic Education, Arts and Culture
NIED	National Institute for Educational Development
NSSCO	Namibia Senior Secondary Certificate Ordinary level
RTCOEQ	Reflective Teaching Closed and Open Ended Questionnaires
RTIS	Reflective Teaching Interview Schedule
RTLOC	Reflective Teaching Lesson Observation Checklist
ZPD	Zone of Proximal Development

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CHAPTER 1: INTRODUCTION

Grade 12 learners' academic performance remains a concern in the Zambezi Region of Namibia since 2010. The Region has remained at the bottom of the national rankings in the Namibia Senior Secondary Certificate Ordinary level (NSSCO) results consecutively in the past four consecutive academic years: 2013, 2014, 2015 & 2016 (Ministry of Education, Arts and Culture, 2010 -2016). Though there are a multitude of factors that may influence the academic performance of learners, Fatemipour (2012) remains confident that the teacher's understanding and application of reflective teaching remains an imperative tool for professional growth and development in learning and teaching. Ferwana (2006); Zwozdiak-Myers (2009) and Fatemipour (2012) argue that reflective teaching is paramount to effective learning and teaching, it is the commanding ingredient to good academic performance of learner in the classroom. This is mainly because reflective teaching helps teachers to diagnose deficiencies in their teaching and professional capacities as facilitator of the learning process (Ferwana, 2006; Fatemipour, 2012 & Spalding, 2020). It naturally stimulates curiosity to improve on self-knowledge, skills and application of new ideas in teaching in order to enhance learners' performance (Fatemipour, 2012 and Spalding, 2020).

Zambezi Region has been characterised by lower national rankings in the Namibia Senior Secondary Certificate Ordinary level (NSSCO) results since 2010 (Ministry of Education, Arts & Culture, 201-2016). Therefore, the aim of this study was to establish

the Zambezi Region teachers' understanding and application of reflective teaching as one of the factors that may influence the performance of learners in the national examinations.

In this chapter, the following are presented: orientation of the study, statement of the problem, research objectives, significance of the study, limitations of the study, delimitations of the study, definition of terms and layout of the study.

1.1 ORIENTATION OF THE STUDY

Teaching is a complex activity in which decisions are made in difficult contexts. In addition, there are theoretical perspectives that need to be considered in order to impart a positive change in the academic capacities of learners. Some of the decisions that needs to be taken in complex contexts include but not limited to the following; the choice of teaching methodology in a class of diverse intelligences, implementing ideal discipline amid personality diversities in the classroom, providing a quality learning / teaching environment in overcrowded classrooms (Bolton, 2010 and Fatemipour, 2012).

Extensive coverage of literature on reflective teaching suggests that using reflection can improve teaching, enhance the delivery of lessons, interventions in the classroom and finally improve learners' academic performance (Barnett & O'Mahoney, 2006; Finlay, 2008; Zwozdiak-Myers, 2009; Bolton, 2010; Fatemipour, 2012 and Spalding,

2020). Zwozdiak-Myers (2009) and Spalding (2020) argued that through reflective teaching, teachers will be able to identify how to improve their professional activity in order to improve the quality of learning. She further stated that reflection enables teachers to observe what is going on around the class. It persuades teachers to apply their thoughts and promote changes in learners' learning behavior.

According to Ferwana (2006) and Fatemipour (2012) reflective teaching is a useful tool for teachers and student teachers to generate and explore their concerns about the quality of their teaching and their learners' learning. The outcomes of the adoption of this approach are fruitful. There is evidence that serious attention to reflective teaching in college courses pays off (Ferwana, 2006). A study at Ohio State University, reported by Appalachian Educational Laboratory, examined two groups of teachers in the graduate school of education. Members of the first group were instructed to reflect weekly on what they were learning and record their thoughts in a journal. Those in the second group also kept journals, but in addition, they were taught structured ways of reflecting and were encouraged to discuss their reflections with other teachers. Researchers who compared the content and style of the journals from both groups concluded that the second group demonstrated a higher level of understanding about reflective teaching and had more thoughts about ways to put new ideas into classroom practice (Black 2001). This can be equated to grade 12 teachers in the Zambezi Region. Those who understand and apply effective reflective teaching are most likely to put new teaching and mentoring ideas in the classroom than those who lack the

understanding of reflective teaching. This is in agreement with Fullan (1991) who holds the view that educational change depends on what teachers do and think. One of the best ways by which teachers may consistently monitor and improve their ability to teach effectively is through self-reflection on teaching (Clift, Houston & Pach, 1990; Evans, 2002).

Soon after independence in 1990, the Zambezi Region (then called Caprivi Region) became famously known (in Namibia) for excellence in academic achievements, as observed by the Ministry of Basic Education, Sports and Culture (1995-2000). This was mainly evident in the good performance of grade 12 learners in the national examinations, where the Zambezi Region would always feature in the top performing regions. This prestigious status has dwindled from best to worst in the previous five or so years. The region has gotten stuck at the bottom of the national rankings consecutively in the past four academic years: 2013, 2014, 2015 & 2016 (Ministry of Education, 2010 - 2016). Though there are other factors that influence the academic performance of learners at school, this study focused on teachers' understanding and application of reflective teaching and learners' academic performance as literature suggests that the ability of teachers to engage in reflective teaching is the mother of factors influencing the academic performance of learners at school. Swarts (1998) suggests that without engaging in reflective teaching, teachers may not be able to identify certain areas of concern within their teaching profession.

Grade 12 results were used here as a measure of teachers' reflectivity as Zwozdiak-Myers (2009) argues that reflective teaching enables teachers to do introspection in teaching and ultimately effect in improved academic performance of learners. It can therefore be suggested that a continuous decline or consistently poor academic performance of learners is an indicator of the absence or lack of teaching reflectivity in the classroom.

Table 1.1 shows the consistency in poor academic performance of grade 12 learners in the Zambezi Region from 2010 to 2016. The statistics appearing in Table 1.1 (see page 6) provide more room for undertaking research into various factors that may be attributed to the persistent, rather consistent, poor academic performance trend of the grade 12 learners in the Zambezi Region since 2010. At the moment, it appears as though little is known about the actual cause of this trend which has persisted since 2010. This is primarily because the status quo has remains relatively the same (see table 1.1). Furthermore, there seems to be less documentation on studies about the causes of lower performance of 12 learners in the Zambezi Region. Certainly, there has been no known study undertaken in the Zambezi Region to explore teachers' understanding and application of reflective teaching as one of the variables that affects learners' performance in the examinations. This stimulated the researcher's interest in conducting this study in order to fill the gaps in literature.

The Namibian General Education Educator Policy makes provisions for continuing professional development for all teachers. Though it does not explicitly pronounce

reflective teaching as one of the tools for continuing professional development, it is only logical that teachers have a clear understanding and can apply reflective teaching in their daily teaching activities. This is in line with Loughan, 2006 who argued that reflective teaching help with the rational for all classroom activities by attaching the *why* question to everything that happens in the classroom.

A deeper understanding of the forces behind this trend requires in-depth understanding of the views, perception and understanding of part or whole groups of people involved in the process of grade 12 learning and teaching in the Zambezi Region.

Table 1.1 Shows the NSSCO Regional rankings over seven years (Ministry of Education, Arts & Culture, 2010-2016)

Position	2010	2011	2012	2013	2014	2015	2016
1	ERONGO	ERONGO	ERONGO	ERONGO	ERONGO	KAVANGO EAST	ERONGO
2	HARDAP	OTJOZONDJUPA	OSHIKOTO	OSHIKOTO	OSHIKOTO	OSHIKOTO	OTJOZONDJUPA
3	KHOMAS	KAVANGO	HARDAP	OTJOZONDJUPA	OHANGWENA	ERONGO	KAVANGO EAST
4	OTJOZONDJUPA	KHOMAS	KAVANGO	OHANGWENA	KAVANGO EAST	OTJOZONDJUPA	KHOMAS
5	OSHIKOTO	OSHIKOTO	OHANGWENA	KAVANGO	OTJOZONDJUPA	KHOMAS	OHANGWENA
6	OMAHEKE	CAPRIVI	KHOMAS	KHOMAS	HARDAP	OMAHEKE	OSHIKOTO
7	OHANGWENA	HARDAP	OTJOZONDJUPA	HARDAP	KHOMAS	HARDAP	HARDAP
8	KARAS	OHANGWENA	CAPRIVI	OMUSATI	OMUSATI	OHANGWENA	OMUSATI
9	OMUSATI	KARAS	OMUSATI	OMAHEKE	OSHANA	KUNENE	KAVANGO WEST
10	KAVANGO	OMUSATI	KUNENE	OSHANA	//KHARAS	KAVANGO WEST	//KHARAS
11	OSHANA	OSHANA	OSHANA	KARAS	KUNENE	OMUSATI	OMAHEKE
12	CAPRIVI	OMAHEKE	OMAHEKE	KUNENE	OMAHEKE	//KHARAS	KUNENE
13	KUNENE	KUNENE	KARAS	CAPRIVI	KAVANGO WEST	OSHANA	OSHANA
14					ZAMBEZI	ZAMBEZI	ZAMBEZI

1.2 STATEMENT OF THE PROBLEM

For six years (2010 to 2016), see table 1.1 there has been an observed continuing decline of learners' academic performance in the grade 12 Namibian Senior Secondary Certificate for Ordinary level (NSSCO) national examination in the Zambezi Region. The academic performance of learners from the Zambezi Region remained a concern in 2017 to 2018 (Ministry of Education, Arts and culture, 2017-2018). Though no literature that links reflective teaching to learners' performance was found in Namibia international literature by Syrjala (1996); Akbari, Kiany, Imani and Karimi (2008); Belvis, Pineda, Armengol, & Moreno (2013) and Rayan (2014) suggests that reflective teaching has an effect on the academic performance of learners.

Other factors known to affect learners' performance as stated by Tahir and Naqvi (2006) include; personal factors, scoring of examination papers, socio-economic status of learners, psychological and environmental factors could affect the academic performance of the learners at school. In addition to the factors listed above, Barnett & O'Mahoney (2006); Finlay (2008); Zwozdiak-Myers (2009) and Bolton (2010) are in agreement that reflective teaching is one of the foundational factor that ultimately influence the academic performance of leaners at school. In this study, reflective teaching as one of the variables that can influence learners' performance will be explored. Researchers like Attard and Armour (2006) and Zwozdiak-Myers (2009) suggest that active engagement in reflective teaching / learning could improve the academic performance of learners. Reflective teaching is a relatively new concept in the Namibian schools; therefore, not all teachers were trained to engage in reflective

teaching. Though there appear to be more international literature on reflective teaching, there is little to no literature on the teachers' understanding and application of reflective teaching and learners' performance in Namibia. Hence the rational for undertaking this study. It is against this background that this study explored the teachers' understanding and application of reflective teaching as an enhancer of learners' performance. At present, the model of teaching does not seem to embrace reflective teaching.

1.3 RESEARCH OBJECTIVES

1.3.1 To elicit teachers' responses on their understanding of reflective teaching in the Zambezi Region.

1.3.2 To establish the value attached by teachers to applying reflective teaching in Zambezi Region.

1.3.3To determine how principals assess the application of reflective teaching and its influence on learners' performance in the Zambezi Region.

1.3.4 To produce a tool that responds to the needs of teachers identified through their responses to objective 1.3.1, 1.3.2 and 1.3.3. (A teachers' guide on reflective teaching).

1.4 SIGNIFICANCE OF THE STUDY

Firstly, the significance of reflective teaching is deeply rooted in its importance for professional growth and efficacy. Secondly, after grasping the understanding and the

value that teachers have attached to reflective teaching in the Zambezi Region it can serve as a baseline measure for fostering or shaping a culture of reflectivity with the overall intention of improving the quality of learning and teaching that takes place. Thirdly, the study could help teachers in the Zambezi Region and Namibia at large to develop a rationale for practice. A reflective teacher is informed through self-reflection (Moon, 2005). Fourthly, this study has the potential to contribute to teachers' empowerment and emancipation.

Moon (2005) and Barnett & O'Mahoney (2006) argue that the work of education cannot simply be reduced to mere technical concerns, but that teachers must engage with important moral issues and therefore they need to reflect on their activities. This is in agreement with Bolton (2010) and Finlay (2008) who proposed that professionals who engage in reflective practice are able to examine their ideologies critically and consider the value of their own practice. Fifthly, this study helped to establish whether or not teachers in the Zambezi Region usually took informed actions in teaching. Informed actions according to Zwozdiak-Myers (2009) are those that can be explained to others. It is through informed decision that teachers' actions have a chance of achieving the desired results (Zwozdiak-Myers, 2009). Moreover, reflective teaching incorporates the development of problem solving and reflecting on events to improve decision-making and judgment.

Problem solving and reflecting on events is an important aspect in the teaching profession as Attard & Armour (2006, p.222) clearly states "Teaching as a profession

requires the teacher to go beyond the exercise of craft skills to diagnose problems, evaluate possible responses and adopt a chosen course of action". Furthermore, teachers should consistently research ways of how to teach learners how to think. This is in line with Dewey (1933) and Tomei (2009) who advocate that, the aim of education is to teach learners how to think, not what to think. This is further supported by Finlay (2008) who claims that the problems of the real world do not present themselves to practitioners on well-formed structures; they present themselves as messy, indeterminate situations.

Moreover, reflective teaching allows practitioners to avoid self-laceration (Finlay, 2008). They learn to stop blaming themselves and turn their attention to understanding the resistance (Finlay, 2008). The statement above directly relates to the education scenario in Namibia (particularly in the Zambezi Region) at present, where there seem to be a blame game between the different stakeholders in education. This study highlights reflective teaching as a contemporary approach for teachers′ professional development and drawing teacher preparation institutions attention toward this. The study has the potential to drive researchers toward conducting further studies on developing reflective practices in pre-service and in-service teachers. Reflective teaching is thought to be the right way to follow if teachers are to solve instructional problems in their classrooms. In addition, once reflectivity is fostered it is expected that learners' performance would inevitably improve as argued by Barnett & O'Mahoney (2006). The study highlights reflective teaching as a contemporary approach for teachers′ professional development and drawing teacher preparation

institutions attention toward this. Finally, the findings of this study will help close the gap in literature on the teachers' understanding and application of reflective teaching and learners' performance in the Zambezi region.

1.5 LIMITATIONS OF THE STUDY

Most teachers were not familiar with the concept and application of reflective teaching in the other tools of data collection. Giving them questionnaires for two days could have resulted in them consulting sources for the meaning of reflective teaching. Thereby depicting a misconception of their real understanding of the concept. The findings in this study are specifically limited to the Zambezi Region. The costs of undertaking a national study on the same subject were prohibitive, this reduced the scope of the coverage of the study to one region only. Because the study was only carried out in the Zambezi Region, the findings could not be generalised to other regions. Moreover, in as much as the researcher emphasised the essence of providing genuine responses to questions asked, the possibility that participants may not have provided genuinely authentic answers remains. Some of the information collected in this study was of a self-report nature, which could be prone to some inaccuracy as a result of less than accurate recall, lack of information, or discomfort with self-disclosure. The researcher maintained objectivity in order to reduce the effect of the researcher's silent voice in the presentation, analysis and synthesis of data.

1.6 DELIMITATIONS OF THE STUDY

At the point of undertaking this study, there were only ten senior secondary schools in the Zambezi Region, namely: Caprivi Senior Secondary School, Ngweze Senior Secondary School, Sanjo Senior Secondary School, Mayuni Senior Secondary School, Sikosinyana Secondary School, Simataa Senior Secondary School, St. Kizito College, Mafwila Senior Secondary School, Sangwali Secondary School and Sesheke Senior Secondary School. These were the schools upon which the study was focused as they formed part of the schools that fit the description of the research title. A sample of 5 purposefully selected schools from these ten schools was selected and twenty participants were drawn from these five school.

1.7 DEFINITION OF TERMS

Anticipatory reflection – reflection that occurs before action commerce (Farrell, 2004).

Cognitive Constructivism – a theory which emphasises that individual knowledge construction is stimulated by internal cognitive conflict as learners strive to resolve mental disequilibrium (Piaget, 1977).

Community of inquiry – any group of individuals involved in a process of empirical or conceptual inquiry into problematic situation (Akdeniz et al., 2016).

Community of practice – people who share concerns or passion for something they do and learn how to do it better as they interact regularly (Wenger, 1998).

Critical reflection - a reasoning process to make meaning of an experience (Farrell, 2004).

Efficacy – Ability to produce desired results (Babaei & Abednia, 2016).

Metacognition – Thinking about thing, higher order thinking (Philip & Dwayne, 2010).

Reflection in action – reflection that occurs whilst you are involved in the situation, often in a patient interaction (Bolton, 2010).

Reflection on action – is retrospective contemplation of practice in order to uncover the knowledge used in a particular situation by analysing and interpreting the information recalled (Bolton, 2010).

Reflective teaching – looking back at what you do in the classroom, thinking about why you do it, and if it works (Bailey, 2012).

Social constructivism – a theory that views the origin of knowledge construction as being the social interaction of people, interaction that involves sharing, comparing and debating among learners and mentors (Leeds-Hurwitz, 2009).

Zone of proximal development – the difference between what a learner can do without help and what a learner can do with the help of a teacher (Vygosky, 1962.

1.8 LAYOUT OF THE STUDY

This dissertation is divided into five chapters. The present chapter provides an overview of the rationale and professional landscape that have guided the direction and purpose of this study.

Chapter 2: Review of Literature

This chapter identifies key characteristics attributed to reflective teaching by

scholars, teacher educators and researchers in the field of teacher education by examining the teachers' understanding and application of reflective teaching and how it influences learners' academic performance. The chapter also presents three theoretical frameworks which underpins the work of this study. In addition, this chapter covers content on the traditions of reflective teaching, the types of reflections, models, levels, methods of reflective teaching and the value attached to reflective teaching.

Chapter 3: Research methodology

This chapter details methodological approaches to research that informed the design of this study and is organised in terms of: research design; population; sample and sampling procedures; research instruments; triangulation of data; data collection procedure; data analysis and research ethics.

Chapter 4: Presentation and discussion of results

This chapter presents the study's findings and is organised in relation to dimensions of reflective teaching in which teachers' understanding and application of reflective teaching was explored and evidence gathered to answer to the objectives of this study. This chapter further discusses the main results of the study and considers how they relate to previous research and theoretical literature of reflective teaching.

Chapter 5: Conclusion and recommendations

This chapter concludes the findings of this study by looking at the implications for teachers, school principals, teacher training institutions, directorate of education and its allies. This chapter further provides recommendations for the development of reflective teaching for teachers in the Zambezi Region. Areas that warrant further research studies are identified and recommended.

1.9 SUMMARY

Learners' academic performance in the Zambezi Region of Namibia has been observed to decline consecutively in the years 2010 to 2016. Though there are other factors known to influence the academic performance of learners, this study is grounded on reflective teaching as one of the factors that may have an influence on the academic performance of learners. Reflective teaching should not be viewed by teachers as a threat or a stumbling block in the day to day learning / teaching activities.

This chapter provided an overview of this study in terms of the following subtitles: Orientation of the study; statement of the problem; research objectives; significance of the study, limitations of the study, delimitations of the study and the definition of terms. The next chapter presents a review of related literature.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

Though there is limited literature on reflective teaching and learners' performance in Namibia. This chapter unveils the examined literature on reflective teaching and learners' performance both locally and abroad. Literature on classic theories cited in this study may appear dated, but such theories still form the basis and remain relevant to this study. However, contemporary literature has been included in order to hone the classic theoretical literature on reflective teaching and learners' performance. Firstly, the chapter presents literature on the definition of reflective teaching, secondly it covers the theoretical framework for reflective teaching, thirdly, the chapter presents the conceptual teachers' understanding of reflective teaching, fourthly it shares the value of reflective teaching on learners' performance, fifthly it presents the common kinds of reflection in teaching and other types of reflection, sixthly it covers the teaching dynamics, seventhly it presents the traditions of reflective teaching, eighthly, it shares models of reflective teaching, pen-ultimately, the chapter presents the levels of reflective teaching and ultimately the methods of reflective teaching.

2.2 DEFINITION OF REFLECTIVE TEACHING

The concept of reflective teaching stems from reflective practice, a concept that was born out of the work of John Dewey (1859-1952), an American who took the notion of reflection from philosophy and introduced it into the fields of psychology and

pedagogy. According to Zwozdiak-Myers (2009), Dewey's ideas provided a basis for the concept of reflective practice which gained influence with the arrival of Schon's idea in 1983. One of Schön's (1983) most important and enduring contributions was to identify two types of reflection: reflection-on-action and reflection-in-action. In both types of reflection, professionals aim to connect with their feelings and attend to relevant theory. Reflective teaching means looking back at what you do in the classroom and giving it a meaning by attaching the *why* question to what you go through (Loughran, 2006; Bailey, 2012 & Spalding, 2020). Bailey (2012) further asserts that in the classroom setting, reflective teaching would then mean gathering data on learning and teaching, organising data, analysing it, presenting it and making informed decisions that lead to better learning and teaching. They seek to build new understandings to shape their action in the unfolding situation.

Bailey (2012) defines reflective teaching as the idea that professionals carefully evaluate their own work, seeking to understand their motives and rationales as well as their practice, and then try to improve upon their work. She also states that reflective teaching procedures can take many forms, including saving and making notations on our lesson plans, videotaping or audiotaping our lessons, keeping a teaching journal, writing a blog about our teaching and so on. Reflective teaching is further an organised process of collecting, recording and analysing a teacher's thoughts and observations, as well as those of their learners, and then going on to making changes. It's not a once

and done approach to continuous professional development (CPD), but a recurring process that needs to occur frequently if it is to have an impact (Spalding, 2020).

It is imperative for professional teachers to try to evaluate how successful an activity in terms of learners' engagement and learning results (Harmer, 2007b). Moreover, some reflection is simply a matter of thinking about what is happening in our lessons as we take the metro home from work, but there are a number of more systematic ways of doing this, like keeping journals and recording ourselves (Harmer, 2007a). The teacher who is critical in their thinking about what happens in classroom lessons and about alternative means of achieving goals or aims is a reflective teacher (Soisangwarn & Wongwanich, 2014).

Similarly, Farrel (2016) mentions that the advocacy of reflective teaching in teacher professional development is based on the belief that teachers can improve their own teaching by intentionally and methodically reflecting on their teaching experiences. Farrel (2016) argues that what teachers think they do, and what they actually do is not always the same as insights and realism are not always the same. He adds that teachers have many means of collecting such evidence about their practice such as surveys, questionnaires, classroom observations with or without peer discussion with other teacher groups face to face and/ or using technology (e.g. blogs, forums, or chats) so that they can better inform themselves about their and other practices.

Furthermore, Farrel (2016) asserts that one of some ways to advance pedagogical competence to be a professional teacher is by having reflective skill. He defines

reflective skill as teacher's skill to diagnose the strengths and weaknesses of teaching process he/ she had conducted. Soisangwarn and Wongwanich (2014) also mentioned that a teacher who regularly considers their own practices is more likely to develop and improve their professional learning.

2.3 THEORETICAL FRAMEWORK

This study is primarily grounded in three theories that ropes the link between reflective teaching and learners' performance: namely the social constructivism theory, cognitive constructivism theory and the metacognition theory. These theories view learning and teaching as a constructed phenomenon (Akdeniz, Bacanli & Baysen, 2016). These theories share focus in viewing teaching as a process of facilitating learning (Akdeniz et al., 2016). By combining elements from the three theories, this study aimed at providing a holistic and transparent description of the dynamics in the classroom.

According to Akdeniz et al. (2016) behaviorist, cognitive and constructivist ideas and principles overlap in many fields. It is difficult to classify these theories in this context. Some theories can be involved in more than one class in different ways. The conventional acquisition-oriented perspectives to learning and teaching have been recently challenged by the approaches in which emphasis is placed on collective meaning-making and socially shared classroom practices (Leeds-Hurwitz, 2009 & Kovalainen, 2013). According to these approaches, the joint negotiations of the

different views, opinions and interpretations into a shared understanding is seen as giving learners opportunities to extend their level of participation in the socially situated activity in question and, correspondingly, to broaden the learner's ways of knowing and thinking (Wells, 1999).

2.3.1 Social constructivism theory

Social constructivism theory also known as dialectical constructivism (Brown, Collins, & Duguid, 1989; Rogoff, 1990; Leeds-Hurwitz, 2009) views the origin of knowledge construction as being the social interaction of people, interactions that involve sharing, comparing and debating among learners and mentors. Through a highly interactive process, the social milieu of learning is accorded centre stage and learners both refine their own meanings and help others find meaning. In this way knowledge is mutually built. This view is a direct reflection of Vygotsky's (1978) sociocultural theory of learning, which accentuates the supportive guidance of mentors as they enable the apprentice learner to achieve successively more complex skills, understanding, and ultimately independent competence. The fundamental nature of social constructivism is collaborative social interaction in contrast to individual investigation of cognitive constructivism. Through the cognitive give and take of social interactions, one constructs personal knowledge (Vygotsky, 1978). In addition, the context in which learning occurs is inseparable from emergent thought. This latter view known as contextualism in psychology becomes a central tenet of constructivism when expressed as situated cognition. Social constructivism captures the most general extant

perspective on constructivism with its emphasis on the importance of social exchanges for cognitive growth and the impact of culture and historical context on learning. Leeds-Hurwitz (2009) further states that social constructivism was added to the constructivism theory by Vygotsky. Social constructivism is a theory of knowledge in sociology and communication that views knowledge understanding of the world as a social construct. This theory assumes that understanding, significance, and meaning are developed in coordination with other human beings. It can therefore be argued that Vygotsky's theory stresses that social interactions are critical and that knowledge is constructed via the interactions with the environment and other people. This is in line with Leeds-Hurwitz's (2009) assumption on reflective teaching that, learning collaboratively amongst teachers and learners is tantamount to successful learning and teaching. In reflective teaching, this implies that the teacher (the specialist in the subject area) helps the learner acquire particular competencies through scaffolding.

Since teaching has a direct impact on the kind of learning taking place in the classroom, the structuring of a learning environment is crucial to maintaining an exciting and satisfying learning (Namibia. Ministry of Education and Culture, 1993). The aforementioned statement indicates that through reflecting on the technical aspects of teaching, teachers are able to conduct critical observations on their lessons and reflect on them to identify problems encountered. Therefore, learners' academic performance may be improved as a result of effective instructional strategies (Luiya & Schafer, 2013). Social Constructivism informed this study in that, reflective teachers are

expected to reflect on the quality of social interactions that occurs in the classroom as a basis for an enhanced social learning environment.

2.3.2 Cognitive constructivism theory

Endogenous constructivism or cognitive constructivism (Cobb, 1994; Moshman, 1982) focus on internal, individual constructions of knowledge. This perspective, which is derived from Piagetian theory (Piaget 1977, 1970), emphasizes individual knowledge construction stimulated by internal cognitive conflict as learners strive to resolve mental disequilibrium. Essentially, learners must negotiate the meaning of experiences and phenomena that are discrepant from their existing schema. Learners may be said to author their own knowledge, advancing their cognitive structures by revising and creating new understandings out of existing ones. This is accomplished through individual or socially mediated discovery-oriented learning activities.

Reflection is the examination of the underlying assumptions and the understanding of the interaction of dispositions, practice, and professional knowledge. It is therefore important that teachers understand reflective teaching pedagogy as a sensible attempt to think before, during, and after the instruction to enhance the learners' academic achievement (Luiya & Schafer, 2013). Reflective teachers ought to reflect on the methods and learning aids that are used in the classroom and determine the degree to which they help learners construct subject knowledge.

2.3.3 The metacognition theory

The theory of metacognition relates to the principles of reflective teaching in that, it is cognition about cognition, thinking about thinking, knowing about knowing, becoming aware of awareness and higher order thinking (Philip & Dwayne, 2010). John Flavell originally coined the term metacognition in the late 1970s to mean "cognition about cognitive phenomena," or more simply "thinking about thinking" (Flavell, 1979, p. 906). Subsequent development and use of the term have remained relatively faithful to this original meaning. For example, researchers working in the field of cognitive psychology have offered the following definitions: "The knowledge and control learners have over their own thinking and learning activities" (Cross & Paris, 1988, p. 131). Hennessey (1999, p. 3) concurs and defined metacognition as "awareness of one's own thinking, awareness of the content of one's conceptions, an active monitoring of one's cognitive processes, an attempt to regulate one's cognitive processes in relationship to further learning, and an application of a set of heuristics as an effective device for helping people organize their methods of attack on problems in general". Similarly, Kuhn & Dean (2004, p. 270) defined metacognition in terms of "awareness and management of one's own thought". While Martinez (2006, p. 696) views it in terms of "monitoring and control of thought".

As Kuhn and Dean (2004) explain, metacognition is what enables a learner who has been taught a particular strategy in a particular problem context to retrieve and deploy that strategy in a similar but new context. The authors note that in cognitive psychology, metacognition is often defined as a form of executive control involving

monitoring and self-regulation, a point echoed by other researchers (McLeod, 1997; Schneider & Lockl, 2002). Further, Schraw (1998) describes metacognition as a multidimensional set of general, rather than domain-specific, skills. These skills are empirically distinct from general intelligence, and may even help to compensate for deficits in general intelligence and/or prior knowledge on a subject during problem solving.

Metacognitive knowledge includes knowledge about oneself as a teacher/learner and the factors that might impact performance, knowledge about strategies, and knowledge about when and why to use strategies. According to Lai (2011) metacognitive regulation is the monitoring of one's cognition and includes planning activities, awareness of comprehension and task performance, and evaluation of the efficacy of monitoring processes and strategies. Metacognition also improves with appropriate instruction, with empirical evidence supporting the notion that learners can be taught to reflect on their own thinking. Lai states that assessment of metacognition is challenging for a number of reasons: (a) metacognition is a complex construct; (b) it is not directly observable; (c) it may be confounded with both verbal ability and working memory capacity; and (d) existing measures tend to be narrow in focus and decontextualized from in-school learning.

In her research report on metacognition, Lai (2011) further postulates that educational psychologists have long promoted the importance of metacognition for regulating and supporting learner learning. Lai (2011) states that, the partnership for 21st century

skills have identified self-directed learning as one of the life and career skills necessary to prepare learners for post-secondary education and the workforce. However, educators may not be familiar with methods for teaching and assessing metacognition, particularly among elementary-aged learners.

2.3.3.1 Constituent Element of metacognition

Metacognition has two constituent parts: knowledge about cognition and monitoring of cognition (Lai, 2011). Several frameworks have been developed for categorizing types of knowledge about cognition.

Table 2.1: Typology of Metacognitive Components

Metacognitive Component	Type	Terminology	Citation
Cognitive knowledge	Knowledge about oneself as a learner and factors affecting cognition	Person and task Knowledge	Flavell (1979)
		Self-appraisal	Paris & Winograd (1990)
		Epistemological understanding	Kuhn & Dean (2004)
		Declarative knowledge	Cross & Paris (1988) Schraw et al. (2006) Schraw & Moshman (1995)
			Cross & Paris (1988) Kuhn & Dean (2004)
	Awareness and management of cognition, including knowledge about Strategies	Procedural knowledge	Schraw et al. (2006)
		Strategy Knowledge	Flavell (1979)
	Knowledge about why and when to use a given strategy	Conditional knowledge	Schraw et al. (2006)
	Identification and selection of appropriate strategies and allocation of resources	Planning	Cross & Paris (1988) Paris & Winograd (1990) Schraw et al., (2006) Schraw & Moshman (1995) Whitebread et al. (2009)

Cognitive regulation	Attending to and being aware of comprehension and task performance	Monitoring or regulating	Cross & Paris (1988); Paris & Winograd (1990); Schraw et al. (2006); Schraw & Moshman (1995) and Whitebread et al. (2009)
		Cognitive Experiences	Flavell (1979)
	Assessing the processes and products of one's learning, and revisiting and revising learning Goals	Evaluating	Cross & Paris (1988); Paris & Winograd (1990); Schraw et al. (2006); Schraw & Moshman (1995) and Whitebread et al. (2009)

Table 2.1 organizes typology metacognitive components from several frameworks to facilitate comparisons among them. For example, Flavell (1979) defines cognitive knowledge as knowledge about one's own cognitive strengths and limitations, including the factors (both internal and external) that may interact to affect cognition. He classifies such knowledge into three types: (1) "person" knowledge, which includes anything one believes about the nature of human beings as cognitive processors; (2) "task" knowledge, which includes knowledge about the demands of different tasks; and (3) "strategy" knowledge, which is knowledge about the types of strategies likely to be most useful (Flavell, 1979). According to Lai (2011), subsequent metacognition researchers have offered a slightly different framework for categorising cognitive knowledge. For example, several researchers have used the concepts of declarative and procedural knowledge to distinguish cognitive knowledge types (Schraw & Moshman, 1995; Cross & Paris, 1988; Kuhn, 2000; Schraw, Crippen & Hartley, 2006).

Kuhn and Dean (2004) characterize declarative cognitive knowledge broadly as epistemological understanding, or the teacher's understanding of thinking and

knowing in general. Schraw, Crippen & Hartly (2006) portray declarative cognitive knowledge as knowledge about oneself as a learner and what factors might influence one's performance. Paris and Winograd (1990) discuss the process of self-appraisal as reflection about personal knowledge to answer the question, "Do I know this?" Finally, Cross and Paris (1988) define declarative cognitive knowledge specifically within the context of reading as awareness of the factors that might affect reading ability.

On the other hand, procedural knowledge involves awareness and management of cognition, including knowledge about strategies (Cross & Paris, 1988; Kuhn & Dean, 2004; Schraw et al., 2006). Schraw et al. (2006) also distinguish conditional cognitive knowledge, which is knowledge of why and when to use a given strategy. The authors point out that cognitive knowledge is "late developing," in the sense that learners often exhibit deficits in cognitive knowledge. In addition, although the ability to explicitly articulate cognitive knowledge tends to improve with age, many adults struggle to explain what they know about their thinking. This latter result suggests that cognitive knowledge may not need to be explicit in order for people to access and use it. The other component of metacognition is monitoring of one's cognition, which many researchers have argued includes activities of planning, monitoring or regulating, and evaluating (Cross & Paris, 1988; Paris & Winograd, 1990; Schraw & Moshman, 1995; Schraw et al., 2006; Whitebread, Coltman, Pasternak, Sangster, Grau, Bingham, Almeqdad & Demetriou, 2009). Planning involves identification and selection of appropriate strategies and allocation of resources, and can include goal setting, activating background knowledge, and budgeting time. Monitoring or regulating involves attending to and being aware of comprehension and task performance and can

include self-testing. Finally, evaluation is defined as “appraising the products and regulatory processes of one’s learning,” and includes revisiting and revising one’s goals (Schraw et al., 2006, p. 114).

The theoretical framework in study informed the research design adopted (Mixed methods case study design). Collecting critical information on the teachers understanding and application of reflective was made possible by adopting the Mixed methods case study design. A mixed method case study design was ideal for collecting data on how teachers endeavoured to reflect on the social interactions in the class, the construction of individual knowledge by the leaners, the critical thinking and reasoning of Grade12 learners in the Zambezi Region.

2.4 TEACHERS’ CONCEPTUAL UNDERSTANDING OF REFLECTIVE TEACHING

Literature review from national and international researchers such as Swartz, (1998); Soisangwarn & Wongwanich (2014) Yanuarti and Treagust (2015) and Palding (2020) seems to suggest that teachers are not conversant with the concept of and the application of reflective teaching. A study that was done by (Ferwana, 2006) at Ohio State University concluded that teachers lacked understanding, skills and knowledge in reflective teaching. In another study that was done in Indonesia by Yanuarti and Treagust (2015) which aimed to help teachers understand reflection as it relates to the teacher standards, to provide examples on how to engage in reflection, and to develop reflection habits to improve the quality of education in Indonesian schools. It was

found out that teachers did not have thorough understanding reflective teaching due to their lack of knowledge of it. Three of the teacher participants assumed that reflective teaching is the reflective activities done before closing the lesson. Their understanding of reflective teaching was limited to the activities done as they summed up the lesson. In the interviews that the researcher held with participants, some participants simply denied doing reflective teaching while those who claimed to be familiar with reflective teaching reduced it to the activities done as they summed up the lesson.

From these findings, the researcher assumed that teachers' perceptions are limited to reflection before closing a lesson and took account from the word reflection, to look back, conclude or review of learners' understanding. Teachers also put reflection as an aim or conclusion of doing professional development activities, leading to a better application of thought (Dewey, 1933). They did not recognize that they already conduct reflection in and on action and do it to make their teaching make better sense to their learners. Implicit in each teachers' transcript of interviews was that most teachers likely conducted reflection for action by using the desired outcomes taken from the past experience as guidance to make better actions in their teaching.

Hudaya (2017) declares that to be a worthy and professional teacher, one of the qualifications is that a teacher ought to be able to reflect on his/ her own teaching practice. Hudaya, further proposes that teachers need to be given opportunities to engage in self-reflection and evaluation. He also mentions that many things can be

done to design a context for good teaching, but it is teachers themselves who initially determine the success of a program.

2.5 THE VALUE OF REFLECTIVE TEACHING ON THE PERFORMANCE OF LEARNERS

Spalding (2020) argues that reflective teaching is arguably one of the most important sources of personal professional development and improvement. Effective teachers are first to admit that no matter how good a lesson is; their practice can always be improved. Teacher reflection is significant because it's a practise that helps teachers to collect, record, and scrutinize everything that happened in the lesson. It permits teachers to transfer from just experiencing, into understanding. If they do not query themselves around what their experiences mean and think actively about them, research has revealed that they won't make any changes that can improve learners' performance. When teachers gather evidence regarding activities in their classrooms and take the time to scrutinise it from a distance, they can identify more than just what worked and what did not. They will be able to look at the fundamental principles and beliefs that define the way that they work. This kind of self-awareness is a powerful ally for a teacher, especially when so much of what and how they teach can change in the moment. The value of reflective teaching has been demonstrated in the work of the researchers such as (Swartz, 1998; Ferwana, 2006; Soisangwarn & Wongwanich, 2014; Yanuarti and Treagust, 2015 and Palding. 2020) who stressed the need for reflective teaching as a tool for teachers' professional growth and development.

Bailey (2012) suggests that though there are challenges to practicing reflective teaching, there is more to gain than to lose if teachers apply reflective teaching. Some advantages of practicing reflective teaching are: make teachers more aware what they actually do, promote collegial sharing if the data collected in professional contexts involving other teachers, like team-teaching, from the insight teachers get through reflection, they can actually improve their teaching, getting insight and improving teachers' practice may help experienced teachers overcome burnout, affirm teachers' current practice (or part of it), and help teachers make connection between theory and practice. In addition, if teachers share their reflections, they can attain different perspectives about their works (Farrel, 2016). Furthermore, reflective practices seek to help novice teachers become more aware of decision-making processes to help them determine the effect their decision have in the context in which they are implemented (Babaei and Abednia, 2016). Also, by having reflective habit, a teacher will recognize all of his/ her parts of teaching practice he/she had done (Suherdi, 2012).

Additionally, Richards (2002) mentions the usefulness of reviewing teachers' performance regularly from another point of view: to reward teachers for good performance, to help identity needs for further training, to reinforce the need for continuous staff development, to help improve teaching, to provide basis for contract renewal and promotion, and to demonstrate an interest in teachers' performance and development. Therefore, being a reflective teacher can give many advantages both for the teacher and the learners.

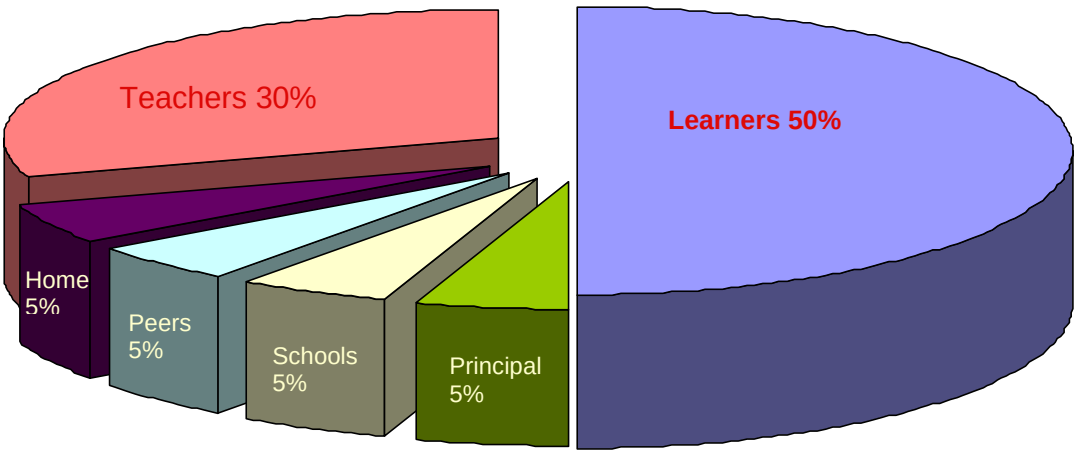
Meanwhile, there are also disadvantages of practicing reflective teaching according to Bailey (2012). First, it is time consuming. Teachers who have heavy workload will not find this activity is interesting since it takes more time that what teachers usually spend. For instance, in making teacher's journal, a teacher should spend more time in their work hour to make it as it has to be done regularly; and in doing peer observation, teachers should find the appropriate time for them. Once teachers get into a teaching routine, it is very difficult to make time to have a classroom observation and reflections. Second, teachers can discover uncomfortable information about their own work when they practice reflective teaching. Sometimes, when teachers find the weaknesses of their teaching and learning activities, it can be hard for them to accept it and change their learning style since it has been being their habits. Nevertheless, the process of reflection is not easy. Yet, because it offers more advantages than disadvantages, teachers education program are ought to be more devoted to developing reflective teaching in their student teacher (Bailey (2012).

A research by Bababei & Abednia (2016) found that there was a positive relationship between some components of teachers' self-efficacy and reflective teaching, especially metacognitive reflection suggests incorporating a focus on (metacognitive) reflection into second language teacher education and professional development helps improve teachers' pedagogical competencies and efficacy beliefs. In addition, Robichaux & Guarino (2012) found that by getting into reflective habit, the pre-service teachers are developing habits of professional growth and improvement. Meanwhile,

Farrel's (2016) study indicated that the novice teacher reflection group helped them to better understand the many shocks they experienced in their classes. From the researches mentioned before, it can be said that teachers' reflection can be measured and they have positive effect on teachers teaching practice both for in-service and pre-service teachers.

According to Palding (2020) teachers (through reflective teaching) accounts for about 30% of the variance in student achievement, second to learners or learners themselves whose variance to personal achievement is at 50%. It is what teachers know, do, and care about which is very powerful in this learning equation.

Figure 2.1. The major source of variance in learner's achievement (adopted from John Hattie in Palding, 2020)



Palding (2020) further argues that reflective teaching has a big influence on the achievement of learners as explained here: Firstly, professional growth; most

importantly, reflective practice is the key to improvement. If teachers don't think about, analyse and evaluate their professional practice they cannot improve. Also once teachers start to take ownership of their CPD in this way, their confidence grows. Secondly, keeping up-to-date and innovative; Just as you wouldn't want to be operated on by a surgeon who wasn't familiar with the latest techniques, we probably won't want to be taught by someone who doesn't know their subject or the best ways of teaching and learning. Reflective practice allows teachers to create and experiment with new ideas and approaches to gain maximum success. Thirdly, understanding learners; Reflective practice encourages teachers to understand their learners and their abilities and needs. Reflection helps teachers to put themselves in their learners' shoes, which is something many skilled teachers do. Stephen Brookfield believes that: 'Of all the pedagogic tasks teachers face, getting inside learners' heads is one of the trickiest. It is also the most crucial' (Brookfield, 2017). Fourthly, developing reflective learners; Reflective teachers are more likely to develop reflective learners. If teachers practice reflection they can more effectively encourage learners to reflect on, analyse, evaluate and improve their own learning. These are key skills in developing them to become independent learners. And lastly, Humility: When we reflect we must be honest. At least honest with ourselves about our choices, our success, our mistakes, and our growth. Meaning that self-reflection acts as a constant reminder to teachers to stay humble and continue working hard to achieve results.

Reflecting on performance and acting on reflection as McKay (2008) and White (2015) notes, is a professional imperative. In the education field, Grushka, Hinde-McLeod and Reynolds (2005) distinguished between *reflection for action*, *reflection in action* and *reflection on action*. Reflective learners are more likely to identify and overcome their weakness, thereby improving performance in school work. Self-emancipation is a big indicator that the teacher has put in place a new system, activity, perspective, understanding or approach that frees the educator from past practices. The goal is most often to discover emancipation via critical thinking and action (White, 2015; Holmes, Cockburn-Wootten, Motion, Zorn, & Roper, 2005). Furthermore, the need to reflect on self as a means of self-development is widely endorsed in schools of education globally. "Reflective knowledge has to do with normative states in social, economic and political realms. It concerns a vision of what ought to be" Coghlan (2015).

Giovannelli (2003) investigated the relationship between reflective disposition toward teaching and effective teaching on a sample of 55 teachers with the use of two scales: the first measured teachers′ inclination toward reflection while the second measured effective teaching practices. The findings showed a statistically significant correlation between inclination toward reflection and effective teaching, especially when it came to teaching behavior, classroom organization, and teacher expectations. Additionally, the value of reflective teaching is reflected in the work of Akbari, Kiany, Imani and Karimi (2008); Belvis, Pineda, Armengol, & Moreno (2013) and Rayan (2014) whose studies indicated that reflective teachers are more likely to help improve the academic performance of the learners compared to non-reflective teachers.

2.6 THE COMMON KINDS OF REFLECTION: REFLECTION *IN* AND REFLECTION *ON* ACTION

According to Schön (1983) in professional development there are two common kinds of reflections: *reflection-in- action* and *reflection-on-action*. The first kind of reflection is that one people do simultaneously with their actions, at the same time we are performing the action, and the second one is the reflection people do after their action. Most articles and books about reflection refer to this second type.

Reflection-in-action is a cognitive habit of observing how we think in the process of the action and of adapting our thoughts to the requirements of the change we are trying to achieve (Schön, 1983). It is the management at real time of the approach we are using for analysing the situation, the assumptions we are taking for granted, the main characteristics of our mental model in respect to the problem we are addressing.

Donald Schön refers to reflection-in-action when explaining how the professional does an action (makes a move) and that action (that move) generates an effect in the situation, and this effect is a feedback for the professional to reaffirm, modify or reframe his approach and continue his "conversation with the situation" through a new move. If the professional acts this way, what is happening is indeed a double change: external and internal. At the same time the professional is changing the situation he is changing his ideas. By the end of the process the professional has invented or discovered new ways of thinking about that kind of situation. He has new mental

model for the situation and a whole set of new opinions about phenomena that manifested in the course of his action. His cognitive capacities have evolved.

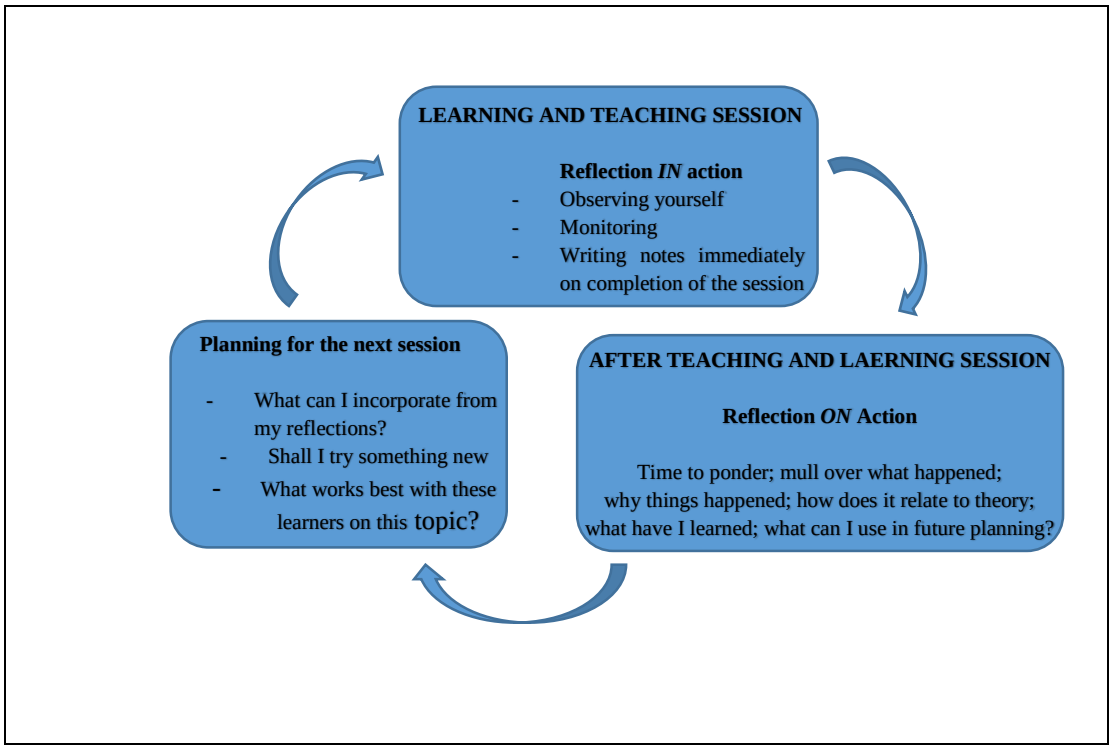
Reflection-on-action, the reflection we can do once the action has finished, is an activity of reconstruction of an experience, based on what we can remember about it (Schön, 1983). It is an effort of stepping back into the experience, exploring our memory, retrieving what we remember for expressing and organizing those fragmented elements with the purpose of understanding what has happened and draw lessons from the experience.

Bolton (2010) states that reflective teaching is a process of learning and developing through examining our own practice, and opening this to wider scrutiny by others and studying texts from other spheres. Bolton believes that knowledge is stored in stories and moments, in those fragments it can be retrieved from our memory, and by reviewing the fragments, elements that were not seen in the course of the action can be discovered.

Donald Schön refered to Reflective Practitioners as professionals who have developed their capacity of reflection-in-action and reflection on action, of being aware of the conversation they are having with the situations when they are trying to make a change, the capacity of seeing the external (physical and social) reality and his internal cognitive reality.

Reflection-on-action is also a way of getting awareness of our cognitive habits and of acquiring new ones, a way of changing how we are approaching the situations, for being capable of reframing those approaches during the process of the action, increasing both our cognitive flexibility and our effectiveness when addressing complex problems, at real time and in the future (Schön, 1983). He further states that it can also be very useful for understanding how other people are framing the situations and the rationale behind that framing, making us much more effective in creating a common ground for solving conflicts and working together.

Figure 2.2: Reflection *IN* action and reflection *ON* action for reflective teachers: Adapted from Schön (1983) and Grushka, Hinde-McLeod and Reynolds (2005)



Schön (1983) denotes that when a teacher is facilitating the process of learning, it is very important to observe oneself and monitor the progress of both learning and teaching taking place (reflection in action). Moreover, he argues that this awareness allows the teacher to make changes as situations demands, to be able to think on your feet. When the session is complete, the teacher can analyse and evaluate their experience of the learning and teaching process. This post action (reflection on action) informs you of the subsequent planning and preparation leading to the cycle of continuing improvement (Schön, 1983).

2.7 OTHER TYPES OF REFLECTION

As mentioned earlier, there are several definitions of reflection and reflective practice in the field of education. Some of those definitions did not take social influence into consideration, and others included the influence of the social political context of the teaching process as well as the schools and communities in which teaching occurs. Also, some educators say that teachers should reflect only in their classroom whereas other educators say that teachers should reflect in and outside the classroom. So it would be acceptable to find many types of reflection depending on points of view of different educators.

Farrell (2004) concentrates on the actions of teachers towards their classrooms, so he puts some types of reflection as follows:

2.7.1 Anticipatory Reflection

Allows a teacher to plan, decide a course of action and anticipate future consequences of the actions.

2.7.2 Active or Interactive Reflection

Allows a teacher to make immediate decisions during class as events unfold.

2.7.3 Recollective Reflection

Allows a teacher to make sense of past experiences and give new, deeper insight into the meaning of those experiences.

2.7.4 Descriptive Reflection

Involves describing a situation or problem.

2.7.5 Comparative Reflection

Involves thinking regarding the situation from different perspectives. Teachers try to solve a problem while also questioning their values and beliefs.

2.7.6 Critical Reflection

Involves teachers looking at all the different perspectives of a situation or problem and at all of the players involved: teachers, learners, the school and the community.

2.7.7 Reflection for Action

It is a proactive thinking in order to guide future action. This type is different from the previous types of reflection in that it is proactive in nature. It is the desired outcome

of both previous types of reflection. “It guides teachers to future actions. Teachers can prepare for the future by using knowledge from what happened during class and what they reflected on after class” (Farrell, 2004 p. 28).

2.7.8 Action Research

Investigating in detail one topic related to one’s classroom teaching. Action research and reflective teaching practice are closely connected. Action research is one answer to the problematic reality that teachers’ voices are absent from the research literature on teaching. Teachers should be professional thinkers who can pose and solve problems according to their educational practice. They can do that by entering into a reflective cycle.

2.8 THE TEACHING DYNAMICS

The role of the teacher in guiding the participation processes during collective meaning-making has also been of interest to several researchers. In conventional, recitation-based classrooms, the practice of teaching has mainly consisted of lecturing, explaining and questioning already existing, factual knowledge (Tharp & Gallimore, 1988; Akdeniz et al., 2016). However, in contemporary classrooms based on collective inquiry, the role of the teacher is seen more as a sensitive coach who supports learners’ active participation in shared meaning-making. Teachers should be able to reflect on how they coach their learners to keep them motivated during the collective inquiry process. It is therefore important for teachers to understand and be able to reflect on the models of instruction that help them to guide learners in the process of learning. In

the following sub-sections, some of the most well-known models of instruction such as scaffolding, learning in contextually embedded activities, Dialogic teaching and the metaphor of community of inquiry. These models of teaching have been developed in order to describe the process by which teachers can guide learners' participation during learning in order to improve learners' academic achievement.

2.8.1 The concept of scaffolding

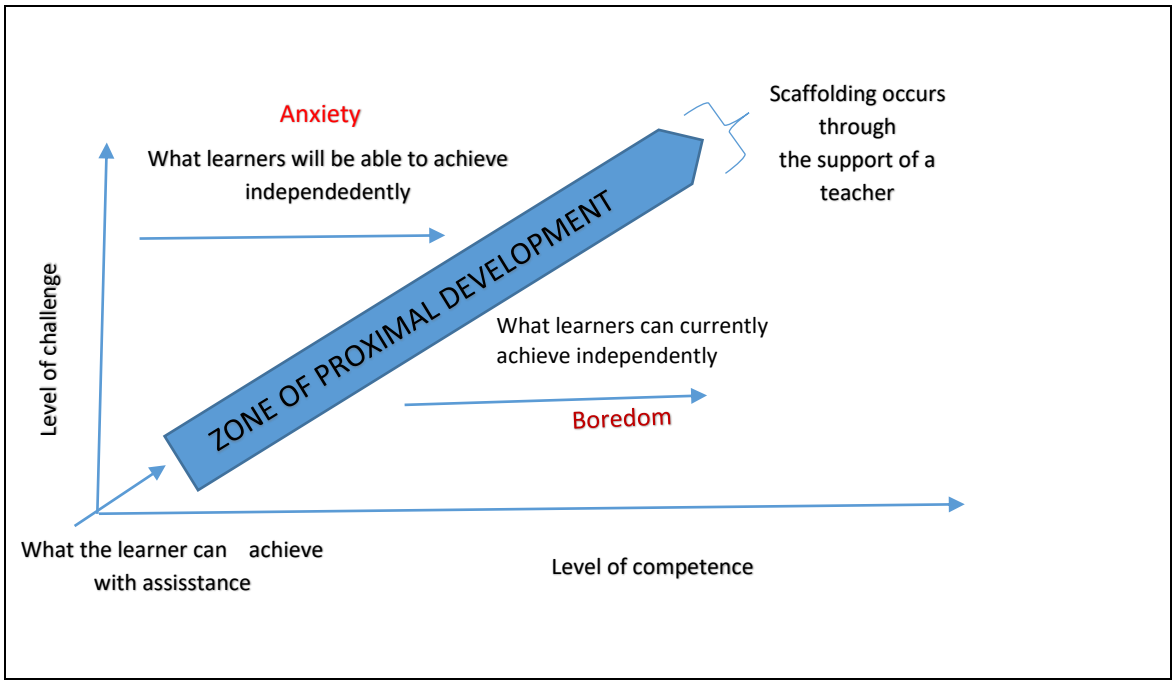
In the disciplines of psychology and education, one of the most recognised metaphors for the process by which adults (or more knowledgeable peers) guide learning and development is the notion of scaffolding *(*Leeds-Hurwitz, 2009; Kovalainen, 2013). According to Kovalainen (2013) the origins of the metaphor (scaffolding) can be traced back to the work of Wood, Brunner & Ross (1976) who used it as an analytic device in investigating the functional role of the support provided by parents to their young learner during joint problem-solving situations. According to Wood et al. (1976, p.90), "scaffolding is a form of temporary adult assistance that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts". Scaffolding is therefore a crucial aspect of reflective teaching as it will expose the weakness or strength of the teachers' assistance to the learners.

During the process of scaffolding, the adult's role is important in controlling those elements of the task that are initially beyond the learner's capacity, thus permitting him to concentrate upon and complete only those elements that are within his range of competence (Wood et al. (1976, p. 90). It can therefore be argued that a reflective

teacher should be able to scaffold the process of learning and the subsequent understanding of a learner so that eventually, the learners get to master basic skills and competencies in a particular subject area. This is in line with Leeds-Hurwitz (2009) and Kovalainen (2013) who claim that via the adult's calibrated assistance, scaffolding interactions are assumed to result in a better understanding on the part of the child. A prerequisite for successful scaffolding is that a learner has some prior understanding of what is to be accomplished during the scaffolding interaction. Even though the scaffolding metaphor was initially used in a very pragmatic and a theoretical manner, later on it was linked with Vygotsky's (1962, 1978) developmental theory, especially with the notion of the zone of proximal development. Cazden (1979) was one of the first researchers who extended the notion of scaffolding from dyadic parent-child interactions to an analysis of teacher-learner interactions in classroom contexts.

The results of Cazden's (1979) research study indicated that teachers used question-answer sequences during social interaction as scaffolds to support their learners' proficiency over the implicit participation structures of classroom discourse. However, it was not until the mid-1980s that research on classroom interaction that applied the scaffolding metaphor began to appear more widely. This clearly shows that the teachers guidance of learners could greatly improve learners' academic performance.

Figure 2.3. Vygosky (1962)'s zone of proximal development. Adapted from: https://www.pinterest.com/pin/522065781774993381/



One of the most well-known applications of the scaffolding metaphor in classroom interaction is the instructional procedure called *reciprocal teaching* that was designed to teach learners cognitive strategies that could result in improved reading comprehension (Brown & Palincsar, 1989; Palincsar, 1986; Palincsar & Brown, 1984). During joint small group discussions, teacher and learners share the responsibility in conducting a set of concrete strategies related to text comprehension, namely, questioning, clarifying, summarizing and predicting. In the early phases of the joint discussion, the teacher undertakes the primary responsibility for carrying out the strategies via explicit modelling and highly structured feedback. Gradually, however, the learners are encouraged to take a greater responsibility in executing the strategies

(Brown & Campione, 1994). In the flow of the joint discussion, the teacher guides the negotiation by providing assistance to the varying needs of the learners. When learners gain more experience in participating and leading the discussion, the repeating sequence structure is gradually faded (Brown & Campione, 1994). Through this process, learners can adopt more and more complicated argument structures (Brown & Palincsar, 1989).

The potentials of reciprocal teaching have been widely explored in classroom learning and teaching across various classroom contexts (Rosenshine & Meister, 1994). It is also included in *guided discovery in a community of learners*, which is a pedagogical model designed to enhance socially shared expertise in classroom learning communities (Brown & Campione, 1994).

Another application of the scaffolding metaphor is an instructional approach called *procedural writing* that aims at helping learners adopt more sophisticated writing strategies (Scardamalia & Bereiter, 1985). Similar to reciprocal teaching, this approach is designed to improve learners' complex problem-solving skills via explicit modelling of expert processes. As learners' skills in complex problem solving improve, scaffolding is gradually reduced. The explicit procedural supports, called *procedural facilitations*, is a set of prompts that are based on a detailed analysis of the activities of expert writers. The prompts are designed to simplify complex information processing and to suggest specific lines of inquiry to follow. Through a specific, think-

aloud technique called *co-investigation*, learners are also encouraged to reflect on their process of inquiry (Scardamalia & Bereiter, 1985).

As many contemporary research studies on classroom interaction have adopted the idea that all human actions, including learning, have to be understood in the sociocultural context of the situations where they naturally occur, a number of concerns about the notion of scaffolding have begun to emerge. In her short 21 Review, Stone (1998) has listed some criticisms concerning the notion of scaffolding raised by various researchers. One of the criticisms voiced about the scaffolding metaphor has been that it disregards the social and cultural factors shaping the form and quality of interaction (Stone, 1998). In line with this argument, Rogoff (1990) claims that scaffolding focuses exclusively on adults as the agents for building up new learning and understandings, even though peers can be valuable sources of enhancing new learning. Secondly, the scaffolding metaphor has been criticised for conceptualising adult-child interactions as too other-driven or biased in nature (Stone, 1998). According to this argument, the teacher is conceptualised as having the main responsibility of guiding the lines of inquiry and the learner is seen to merely observe or to react on teacher's actions. Related to this, Rogoff (1990) argues that the scaffolding metaphor does not pay attention to the age-related differences in a learner's ability to benefit from scaffolding. A third criticism voiced about the notion of scaffolding is that it presumes an idealized teacher-learner relationship. However, teacher-learner interactions during scaffolding might not be as affect-neutral as presupposed (Stone, 1998). Fourthly, the scaffolding metaphor has been claimed to

encourage researchers to emphasise quantitative rather than qualitative changes in learners' knowledge (Stone, 1998). Consequently, there is a need for close, micro level investigations of the specific mechanisms by which qualitative changes in learning can take place during scaffolding interactions. Due to the critical claims presented above, many explicit alternatives or refinements of the notion of scaffolding have been offered in the field of developmental and educational psychology.

2.8.2 Instructional models emphasising learning in contextually embedded activities

One instructional model emphasising the participatory nature of learning and teaching in sociocultural activities of the learning community is called *teaching as assisted performance* (Tharp & Gallimore, 1988). According to this model of instruction, the teacher's role is defined as that of a sensitive coach or expert partner who supports the joint inquiry by providing structural assistance. It is therefore important for a teacher to consider reflecting on the support they provide to learners in a joint inquiry. The learners' role is to provide the content of the discussion by developing ideas or presenting their point of view.

Tharp and Gallimore (1988) argue that instruction in contemporary classrooms should give space for learners' active participation and inventive role in transforming their understandings. The theoretical premises of teaching as assisted performance are linked with Vygotsky's developmental theory, especially the notion of Zone of Proximal Development (ZPD). According to Tharp and Gallimore (1988), teaching

consists in assisting performance through ZPD. Teaching can be said to occur when assistance is offered at points in the ZPD at which performance requires assistance. The assistance provided by the teacher is grounded in on-going interactions and it may vary in both quantity and quality during different phases of the joint inquiry (Tharp & Gallimore, 1988).

Another perspective emphasizing the contextually embedded nature of learning is a model of instruction called *transformation of participation* (Rogoff 1994; Rogoff & Toma, 1997). According to Rogoff (1994, 2003; Rogoff & Toma, 1997), human development, including learning, should be understood as a cultural process. Rogoff (2003, p. 11) argue that "humans develop through their changing participation in the sociocultural activities of their communities, which also change". In the transformation of participation model of instruction, learning and instruction are viewed as a process of building on ideas with others as a shared endeavor. Through this process, participants transform the roles that they play in the sociocultural activities of the learning community. Learners might engage in a variety of participatory roles during the process of inquiry, i.e. leading shared negotiations, developing ideas together or following closely the lines of inquiry during joint discussion (Rogoff & Toma, 1997; Kovalainen & Kumpulainen, 2005). In comparison to the notion of scaffolding, this instructional model also includes adult assistance in learners' learning but places more emphasis on learners' active efforts in transforming their understandings. It is not only the teacher who actively develops ideas and guides the lines of inquiry; rather, learners and teachers participate actively together in shared

cultural activities aiming at mutual understanding. Consequently, learners are viewed as resources for each other's inquiries (Rogoff, 2003). This clearly signifies the key role of reflective teaching in changing the dynamics of learning and teaching in the classroom.

2.8.3 Dialogic teaching and the metaphor of community of inquiry

In recent years, there has been an increasing interest in developing and implementing dialogic approaches to learning and teaching in contemporary classrooms (Alexander, 2006; Mercer & Littleton, 2007; Mercer, Dawes & Staarman, 2009; Littleton & Howe, 2010). Dialogic teaching has begun to appear as a concept of growing interest and importance in the discussion related to learning and teaching (Lyle, 2008). The concept of dialogic teaching is used by Alexander (2010) to describe how teachers and learners work jointly in co-constructing knowledge by exploring shared ideas and presenting arguments and counter-arguments to test evidence. As alluded to in the first two approaches (2.6.1 and 2.6.2) to guided learning. A teacher's reflection should never bypass the aspect of questioning the status of the collaboration between the teacher and learners in the process of knowledge construction. According to Alexander (2010), dialogic classrooms could be described as collective, reciprocal and supportive in nature. Teachers and learners work together as a group or a class. The role of the learners is to ask questions, present their own points of view and comment on ideas and thoughts shared in the discussion. The learning environment is safe for presenting ideas freely and without fear of being embarrassed by others. The role of the teacher is to listen carefully to on-going negotiations in order to integrate the presented ideas

with the curriculum agenda and domain-specific discourses. Thus, dialogic teacher interactions aim at providing a cumulative, continuing, contextual and purposeful frame for supporting learners' participation in socially shared meaning-making activities (Alexander, 2006; Lyle, 2008).

The essential features of dialogic classrooms described by Alexander (2010) share similar features with the metaphor of community of inquiry that has been elaborated in a variety of pedagogical programs and models developed to enhance social constructions of learning and teaching in participatory classroom contexts. The theoretical premises of the community of inquiry metaphor are greatly influenced by the work of John Dewey (1902, 1916, 1963). His views on progressive education, discovery learning and democratic classroom practices have been applied and elaborated by a variety of researchers emphasizing the role of social interaction and reflective inquiry in mediating the development of learners' thinking and learning. The community of inquiry offers an ideal method for promoting collaborative learning and for motivating learners to attentively listen to each other (Fisher, 2013). Learning and teaching in a community of inquiry is based on voluntary communication and shared understandings of meaning.

A community of inquiry is achieved when any group of people engage mutually in a cooperative search for shared understanding. Furthermore, each member benefits from the ideas of others and feels valued by the whole community (Fisher, 1998.) The community of inquiry metaphor, shaped by the work of Dewey and the traditional

Socratic philosophy, has been applied in developing a pedagogical program called *Philosophy for Learner* (Lipman, 1991, 1993; Lipman, Sharp & Oscanyan, 1980; Splitter & Sharp, 1995). In this pedagogical program, learners' learning and thinking is assisted through-philosophical discussion by converting the classroom into a community of inquiry (Lipman et al.,1980). Special emphasis is placed on the development of learners' critical, creative and caring thinking (Lipman, 1991, 1993). In the community of inquiry, learners have an active role in the learning process by building up their own understanding under the guidance of the teacher (Fisher, 2013). Teacher interactions aim at challenging learners to think for themselves and to think more deeply by explaining, analysing and justifying the ideas presented in joint negotiations. In addition, the theoretical underpinning of the community of inquiry metaphor have been strongly influenced by the developmental theory of Vygotsky and the sociocultural perspectives on learning. For example, Wenger's theoretical notion of *community of practice* (1998) associates the community metaphor with three dimensions of practice that define the coherence of the community, namely mutual engagement, a joint enterprise and a shared repertoire (Wenger, 1998).

Several research studies indicate that mutual engagement is an essential requirement for productive discussions during communal inquiry (Brown & Palincsar, 1989; Rogoff & Toma, 1997). Participants may differ in their views and perspectives but engage in mutual interactions trying to understand each other's points of view as a shared endeavor (Rogoff & Toma, 1997; Wenger, 1998). Over some time, striving towards a shared endeavor creates a repertoire of resources for negotiating meaning in

that specific community (Wenger, 1998). According to Wenger (1998, p. 83) this - repertoire might include the "routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions or concepts that the community has produced or adopted in the course of its existence, and which have become part of its practice".

In this dissertation, the community metaphor is used to refer to a broad range of approaches to learning and instruction that are community-oriented. These include the approaches introduced above, such as Lipman's *Philosophy for Learner*, Wenger's *Community of practice* and other community-oriented programs based on sociocultural and sociolinguistic perspectives (Brown & Campione, 1994; Elbers & Streefland, 2000; Rogoff & Toma, 1997). Although the various approaches have slight differences in their conceptualizations of the metaphor, in this dissertation they are treated in a broad sense as being similar and unified in describing the context for communal learning in general.

2.9 TRADITIONS OF REFLECTIVE TEACHING

According to Zeichner and Liston (1996, p.51) "there is diversity in the understanding and interpretation of reflective teaching". Five different traditions reflecting teachers' understanding of reflective teaching have been identified as follows by Zeichner & Liston, (1996); Tabachnick & Zeichner, (1991): The academic tradition; the social efficiency tradition; the developmentalist tradition; the social reconstructionist tradition and the generic tradition. It should be understood that an individual teacher's

approach to reflective teaching will most probably not fit snugly or exclusively within any one of these five orientations (Zeichner & Liston, 1996).

2.9.1 The academic tradition

The academic tradition of reflective teaching stress reflections on subject matter and the representation and translation of subject matter knowledge to promote learner understanding (Zeichner & Liston, 1996). Here the teacher is more concerned about the content of what is taught. The advocates of this tradition argued that, all that teachers needed to do to acquire expertise was to take a lot of subject matter courses in their preparation programs. Critics of this tradition such as Lee Shulman of Stanford University and a group of researchers on teacher learning at Michigan State University have rightfully demonstrated that simply acquiring content knowledge as it is taught in most universities, is not adequate preparation for being able to teach.

2.9.2 The social efficiency tradition

The social efficiency tradition of reflective teaching emphasises faith in the scientific study of teaching to provide a basis for teaching expertise (Zeichner & Liston, 1996). Those who advocate for this orientation state that, teachers should focus their reflection on how well their own practice match what research says they should be doing. The assumption here is that research on teaching has generated a body of knowledge that can provide guidance to teachers. Sharon Feiman-Nemser (1990) identified two different strands within the social efficiency tradition: a technical strand that attempts to get teachers to closely follow what research says they should be doing;

and a deliberative strand in which the findings of research are used as one amongst many sources by teachers in solving problems.

2.9.3 The developmentalist tradition

The developmentalist tradition of reflective teaching puts emphasis on reflections about learners, their cultural and linguistic background, thinking and understanding, their interests, and their developmental readiness for particular tasks (Zeichner & Liston, 1996). The distinguishing characteristic of this tradition is the assumption that the natural development of learners provides the basis for determining what should be taught to learners and how it should be taught (Zeichner & Liston, 1996). The developmental tradition of reflective teaching has become increasingly popular in recent years with the growing influence of cognitive psychology in education.

2.9.4 The social reconstructionist

The social constructionist tradition of reflective teaching is viewed as a political act that either contributes toward or hinders the realisation of a more just and humane society (Kemmies 1985). In this tradition, the teacher focuses both on his practice and on the social conditions in which these practices are situated. It recognises that instruction is embedded within instructional, cultural, and political contexts and that these contexts both affect what we do and are affected by what we do (Zeichner & Liston, 1996).

Zeichner & Liston (1996) further states that the social constructionist tradition is democratic and emancipatory. The focus of the teacher is on the issues that help them examine the social and political consequences of their teaching. It is further

chatacterised by being a social practice. Here the emphasis is on creating communities of learning where teachers can support and sustain each other's growth.

2.9.5 The generic tradition

The generic tradition of reflective teaching encourages teachers to reflect on their teaching in general. This tradition of reflective teaching is guided by the belief that teachers' actions are necessarily better just because they are more deliberate and intentional (Zeichner & Liston, 1996). "Teacher educators have argued that teachers need to become more reflective about their work, without at all addressing the issues of content, quality and context of teacher's reflections" (Zeichner & Liston, 1996, p.62).

According to Zeichner & Liston (1996) the critiques of the generic tradition of reflective teaching have argued that, this kind of encouragement to teachers to reflect without identifying the things that teachers should reflect about or the quality of the reflection they should aim for, seems to lack both substance and direction.

Zeichner (1996) further states that none of the above traditions alone is sufficient as a moral basis for teaching. Good teaching needs to attend to all of the elements that are highlighted by the various traditions.

Literature on the different traditions of reflective teaching informed some questions included in the tools used to collect data in this study. The responses of the teachers to

questions relating to the definition and application of reflective teaching linked to some of the traditions identified in the literature of this study.

2.10 MODELS OF REFLECTIVE TEACHING

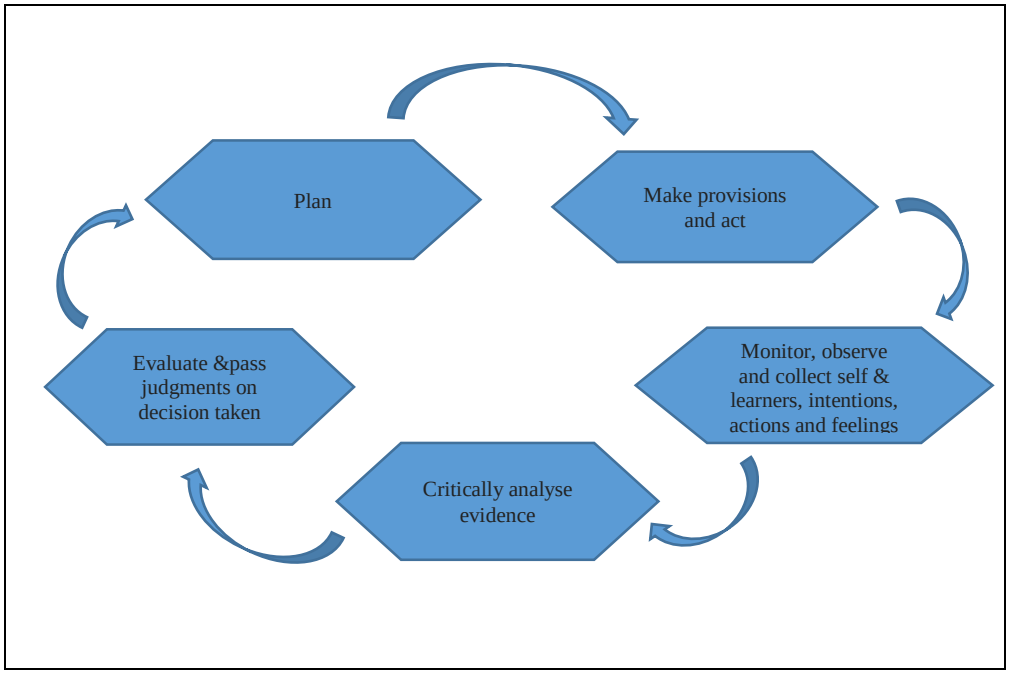
A model is something used as an example to follow or imitate (Henderson, 2001). Reflective teaching is an inquiry approach that emphasizes an ethic of care, a constructivist approach to teaching, and creative problem solving (Henderson, 2001). A reflective teaching model can therefore be defined as an example of an inquiry approach that emphasises ethics of care, constructivist teaching and creative problem solving that teachers may follow or imitate in teaching.

In this study the following models of reflective teaching were expounded: Lawrence Stenhouse (1975)'s model of reflective practice, Kolb (1984)'s learning cycle model, Gibbs (1988)'s reflective cycle model, Syrjala (1996)'s collaborative model of reflective practice and Mathos, Tullier, and Nevalga (2010)'s model of reflective teaching. These models were relevant to this study because they informed the questions that were included in the tools that were used to collect findings of this study. Though other models are discussed in this study, the focul model of this study is the "Lawrence Stenhouse (1975) model of reflective teaching. This model directly relates to the core values of reflective teaching as it advocates for teachers to be researchers of their own practice.

2.10.1 Lawrence Stenhouse (1975)'s model of reflective teaching

This model provides a dynamic basis for teacher actions. Teachers should act as researchers of their own practice and should develop the curriculum through practical enquiry (Stenhouse, 1975). Teachers are principally expected to plan, to make provisions and to act. Reflective teachers also need to monitor, observe and collect data on their own and on the learners' intentions, actions and feelings. This evidence needs to be critically analysed and evaluated so that it can be shared, judgments made and decisions taken (Stenhouse, 1975; Kolb, 1984 & Dewey, 1933).

Figure 2.4 Lawrence Stenhouse (1975)'s model of reflective teaching (Adapted)



Stenhouse states that, reflective practice is a dynamic process which is intended to lead through successive cycles, or through a spiraling process towards higher-quality

teaching. This model is in line with the notion of reflective teaching, as described by Dewey, and provides an essential clarification of the procedures for reflective practice.

2.10.2 Kolb's learning cycle model: adapted from Kolb (n.d) (http://skillsforlearning.leedsbeckett.ac.uk/preview/content/models/02.shtml)

Kolb's learning cycle model looks at reflective teaching under the following four stages:

Stage 1: Experience - Concrete experiences

Life is full of experiences we can learn from. Whether at home or at work or out and about, there are countless opportunities for us to 'kick-start' the learning cycle. In this context teachers need to reflect on their teaching, irrespective of the teaching experience.

Stage 2: Reflect - Reflective observation

Reflection involves thinking about what we have done and experienced. Some people are naturally good at this. Others train themselves to be more deliberate about reviewing their experiences and recording them.

Stage 3: Conceptualise - Abstract conceptualization

When we pass from thinking about our experiences to interpreting them we enter into the realm of what Kolb termed 'conceptualization'. To conceptualize is to generate a hypothesis about the meaning of our experiences.

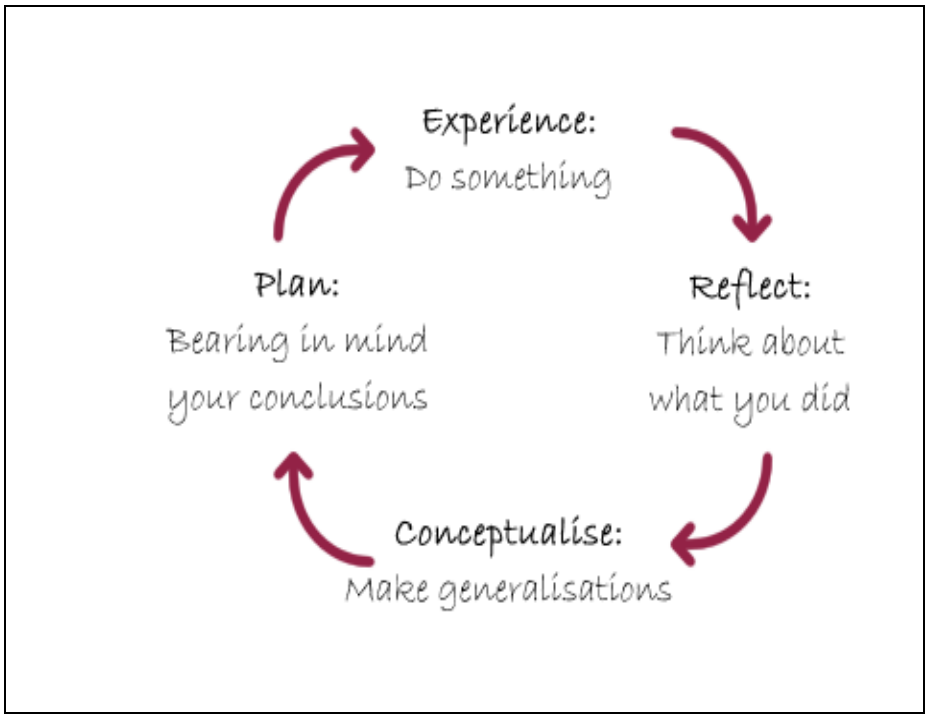
Stage 4: Plan - Active experimentation

In the active experimentation stage of the learning cycle we effectively 'test' the hypotheses we have adopted. Our new experiences will either support or challenge

these hypotheses. To learn from our experiences, it is not sufficient just to have them. This will only take us into Stage 1 of the cycle. Rather, any experience has the potential to yield learning, but only if we pass through all Kolb's stages by reflecting on our experiences, interpreting them and testing our interpretations.

Figure 2.5 Kolb's learning cycle

(http://skillsforlearning.leedsbeckett.ac.uk/preview/content/models/02.shtml)

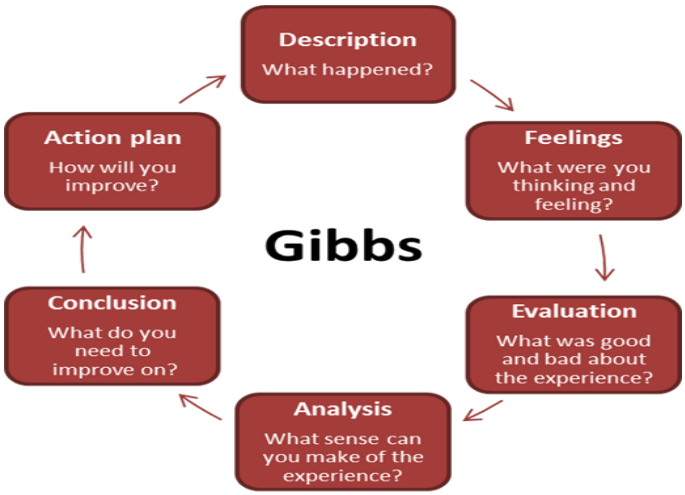


Summing up, learning from our experiences involves the key element of reflection. Obviously, most people don't theorize about their learning in this way, but in their learning they follow Kolb's cycle without knowing it.

2.10.3 Gibbs (1988)'s reflective cycle model

Gibbs' model is an effective tool to help the teacher reflect after the experience, and is a useful model if the teacher is new to reflection as it is broken down into the following clearly defined sections:

Figure 2.6: Gibbs reflective cycle: adapted from Gibbs (1988)



i. Description

In this section, the teacher should clearly outline the experience. This needs to be a factual account of what happened in the classroom. It should not be analytical at this stage.

ii. Feelings

This section encourages the teacher to explore any thoughts or feelings they had at the time of the event. Here the teacher should explain feelings and give examples which directly reference the teaching experience. It is important that the teacher is honest

with how they feel, even if these feelings might be negative. Only once the feelings have been identified can the teacher implement strategies to overcome these barriers.

iii. Evaluation

The evaluation section gives the opportunity for the teacher to discuss what went well and analyse practice. It is also important to consider areas needed for development and things that did not work out as initially planned. This evaluation should consider both the teacher's learning and the learners' learning.

iv. Analysis

This section is where the teacher makes sense of the experience. They consider what might have helped the learning or hindered it. It is in this stage that the teacher refers to any relevant literature or research to help make sense of the experience. For example, if you felt the instructions you gave were not clear, you could consult educational research on how to communicate effectively.

v. Conclusion

At this stage, the teacher draws all the ideas together. They should now understand what they need to improve on and have some ideas on how to do this, based on their wider research.

vi. Action plan

During this final stage, the teacher sums up all previous elements of this cycle. They create a step-by-step plan for the new learning experience. The teacher identifies what they will keep, what they will develop and what they will do differently. The action plan might also outline the next steps needed to overcome any barriers, for example enrolling on a course or observing another colleague. In Gibbs' model the first three

sections are concerned with what happened. The final three sections relate to making sense of the experience and how you, as the teacher, can improve on the situation.

2.10.4 Syrjala (1996)'s collaborative model of reflective teaching

Under the collaborative model of reflective teaching, two or more colleagues are expected to observe each other's way of teaching with the ultimate purpose of identifying and improving weaknesses in their teaching. This allows two or more teachers to critically analyse their teaching with the purpose of improving efficacy (Syrjala, 1996). Syrjala (1996) further contends that the reflective teacher simply analyses lessons in order to increase teacher control over variables that affect learning.

This is further supported by Brookfield (2017) who contends that, to see practice from the perspective of a colleague, a colleague observes the practitioner and provides critical feedback and engages in critical conversations with the practitioner. This shows that reflective teaching is much like action research in that the teacher selects a problem to study, collects the necessary data and analyses their data to improve their performance by directly studying their work.

2.10.5 Mathos, Tullier, and Nevalga (2010)'s model of reflective teaching

As Dewey (1933) observed, we do not learn from experience so much as we learn from reflecting on experience. It is reflection that connects theory to practice and generates the breakthrough moments that bring learning to the next level. The deepest learning occurs with reflections that are part of a reflective classroom environment, rather than

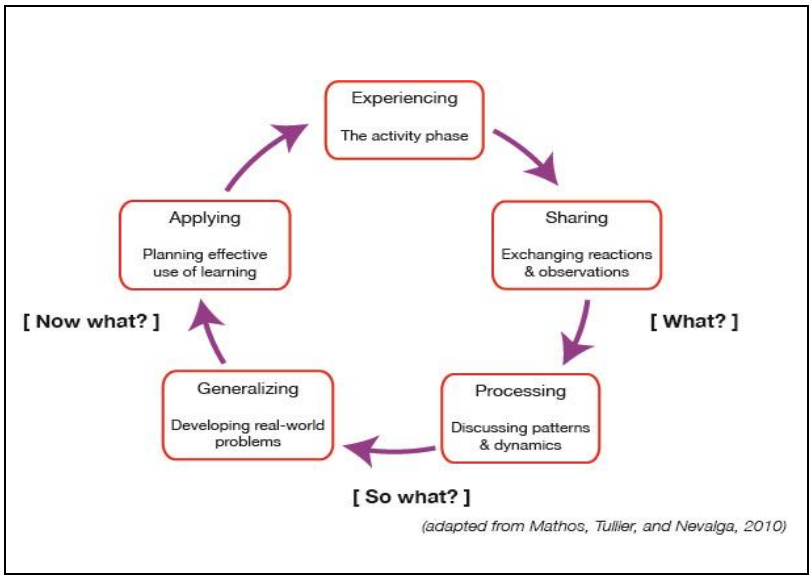
just a reflective component that has little relation or effect on the other components of a class.

In their recitations, Stenhouse (1975); Kolb (n.d); Gibbs (1988); Syrjala (1996); Mathos, Tullier & Nevalg (2010) harmonise that reflection comes in many forms, including writing, telling (presentations and discussions), responding (to peers or materials relating to issues being reflected upon), and doing (culminating projects). The various forms of reflection used in a course should provide opportunities throughout the semester for learners to think about three key questions: What? So what? and Now what? It is critical that learners have structured opportunities to address all three stages of thought. It is only at the Now what? stage that experiences can be converted into learning and growth, but learners typically need a teacher's guidance to reach this stage.

2.10.6 Teaching as assisted performance model (Tharp & Gallimore, 1988)

According to this model of instruction, the teacher's role is defined as that of a sensitive coach or expert partner who supports the joint inquiry by providing structural assistance (Tharp & Gallimore, 1988). The learners' role is to provide the content of the discussion by developing ideas or presenting their point of view. Tharp & Gallimore (1988) argue that instruction in contemporary classrooms should give space for learners' active participation and inventive role in transforming their understandings.

Figure 2.7: A model of reflective teaching (adapted from Mathos, Tullelier and Nevalga, 2010)



Literature on the different models of reflective teaching informed some questions included in the tools used to collect data in this study. The responses of the teachers to questions relating to the models that informed the teachers' application of reflective teaching linked to some of the models identified in the literature of this study.

2.11 LEVELS OF REFLECTION

Once teachers have chosen a particular type of reflection, the next step or question to ask is: To what extent do or should I reflect? Farrell (2004) asserts that educators split reflective practice into three hierarchical levels as follows:

Level 1: Action in the classroom. When teachers plan at this level, they are concerned only with what they do in their classrooms. Level 2: Involves analysing the reasons for the actions taken. It is also called reflection at contextual level, what teachers focus on the theory behind their classroom practices. They can then look into alternative practices they might prefer to use depending on their learners' needs. Level 3: Encourages teachers to justify the work they do and reflect within the broader context of society.

Farrell (2004) further states that other educators mentioned the same levels, but gave them different names, such as:

2.11.1 Level 1: Technical rationality

At this level, teachers focus on their personal behaviour and skills within the classrooms. The teacher considers only the technical application of educational knowledge and basic curriculum principles for the purpose of attaining the desired objectives. Here the teacher ignores the effects of the community, school, classroom and the entire society on learning. This level is called the empirical paradigm and is considered to be the lower level of reflection. At the Technical Level, reflection focuses on what you are doing. It may address the quality of practice independent of its effects, though often what prompts reflection about practice is the effect, or lack of effect on learners. For example, "I thought that those adaptations I made for my learners in the math class for today's lesson were exactly what they needed…I

wonder why they didn't work very well" Retrieved from:
(htt://orgonstate.edu/instruct/ed555/zone1/reflect.htm).

2.11.2 Level 2: Reflection at contextual or practical plan level

When teachers focus on the theory behind their classroom practices, they can then look into alternative practices they might prefer to use, depending on the needs of their learners. At this level, the teacher becomes concerned with clarifying assumptions and predispositions underlying competing pedagogical goals while assessing the educational consequences towards which teaching action leads. In this level, the teachers analyse the lesson to see how the objectives of the lesson are met.

Reflection at the practical level concentrates on the relationship between some situations and the actions of the teacher and others. That is, cause and effect relationships that include the teacher and learners, but also include the broader classroom, programme, and school or community context. For example, "My response to learner X`s behaviour was effective yesterday. I know that today's behaviour had the same underlying cause, but I did not respond well today. I wonder what else was going on that made the difference? Retrieved from:
(htt://orgonstate.edu/instruct/ed555/zone1/reflect.htm).

2.11.3 Level 3: Critical or dialectical reflection level

This level refers to a situation when teachers focus on the moral, ethical and social issues associated with their practice. It may be possible for teachers to reflect on different levels at the same time, depending on the topic of reflection. Some new teachers may find themselves reflecting at Level 1 (the level of action, technical

rationality) because they may not have enough experience to reflect at Level 2 (contextual level) or Level 3 (Critical level).

At critical or dialectical reflection level, the educators are concerned with the worth of knowledge and social circumstances useful to learners without distortions or personal bias. Critical reflection is viewed as a non-defensive stance in remaining open-minded to moral and ethical considerations to educational processes. At the Critical Level, reflection goes deeper and broader, outside the individual, and may focus on such things as commitment to social justice. These levels are developmental, and not everyone will progress through the levels to reach critical reflection. At the critical level of reflection, the following reflective questions adapted from: (http://orgonstate.edu/instruct/ed555/zone1/reflect.htm) need to be addressed in order to aid the teacher about self-evaluation:

i) What were the essential strengths of the lesson? In the collaborative model of reflective practice, it is especially necessary for the colleague who is observing the other colleague's lesson presentation in order to establish the strength of the presentation and to ensure effective teaching.

ii) What, if anything, would you change about the lesson? This question is crucial in the process of reflective practice; the practitioner always wants to find out better ways of presenting the task such that is easier for everyone to comprehend.

ii) Do you think the lesson was successful? Why? The success of the lesson is measured by the extent to which the desired objectives of the lesson are attained. If the objectives of the lesson are partially achieved, the teacher needs to be critically

analytical in the diagnosis of the potential variables that may have hampered the total attainment of the desired lesson objectives.

iv) Which conditions were important to the outcome? During the diagnosis of the variables that may have hindered the total attainment of the lesson objectives, the teacher should also determine the condition that would have been necessary to accomplish the lesson objectives successfully.

v) What, if any, unanticipated learning outcomes resulted from the lesson? The teacher should be well prepared to deal with misconceptions, be vigilant about unanticipated outcomes in order to have more control towards the achievement of the desired objectives.

vi) Can you think of another way you might have taught this lesson? A reflective teacher should always think about different ways of teaching the lesson in order to appeal to a wide variety of abilities of learners.

vii) Can you think of other pedagogical approaches to teaching this lesson that might improve the learning process? The main idea is to improve learning and teaching. The teacher should consistently upgrade pedagogies in order to teach effectively.

viii) Do you think the content covered was important to learners? Why? The content delivered in every lesson should be of significant importance to learners. If the lesson taught holds no significant value in the learner's life, the learner may be reluctant to learn.

ix) What moral or ethical concerns occurred as a result of the lesson? Learning should address the three main domains of learning; the psychomotor, the cognitive and the affective domain. Morals and ethical concerns fall under the affective domain.

Reflective teachers should creatively find and incorporate morals and ethics in their lessons. Level Three (critical reflection) is said to be the highest level of reflection. The questions above need to be considered by the person engaging in reflective teaching at the critical level in order to aid effective self-evaluation.

Literature on the different levels of applying reflective teaching informed some information included in the tools used to collect data in this study. The observation of teachers' lesson presentation was linked to the levels of reflecting teaching provided in the literature of this study.

2.12 METHODS OF REFLECTIVE TEACHING

The rational for including the methods of reflective teaching in study was primarily to compare the methods of reflective teaching that are being applied in the Zambezi Region compared to the internationally renowned methods of reflective teaching. These methods further informed some questions included in the data collection tools used in this study. Zwozdiak-Myers (2009) recommended the following as methods of engaging in reflective teaching: reflective journaling, peer mentoring, video/audio recording of lessons, teachers' portfolio. Additionally, action research and reflective supervision are central methods of reflective teaching as suggested by Coghlan (2015) and Parlakian (2001) respectively.

2.12.1 Reflective Journaling

A teaching journal is a form of diary of teaching experiences that aids personal teaching reflections (Zwozdiak-Myers, 2009). A teacher needs to keep record of experiences as they transpired. It has to be done consistently if the information will be of any worth. It is an activity whereby the teacher takes note of the situation he/she is undergoing. Generally, a reflective journal requires a teacher to map the progress and changes in thinking about a subject or a topic, or about the learning journey in which he/she is engaged (Royal Melbourne Institute of Technology, 2009). The teacher needs to make regular entries in a journal (over a period of time), which would then have to be submitted and assessed. Moreover, the teacher needs to use the reflections built up over a period of time as the basis of an essay or a report on self-professional growth (Royal Melbourne Institute of Technology, 2009).

Table 2.2: Adapted: Events and experiences to consider when writing a journal (Royal Melbourne Institute of Technology, 2009)

Events and experience	Interpretation and evaluation of the events from own perspective
What did I do/hear/see?	Interpret and evaluate the events from your perspective.
What do I think about it now?	Explain your experience; reveal your new insights.
How does it relate to other things that I know?	Connections with other learning, your hypotheses, and your conclusions.
What questions do I have?	Reflect on how this information will be useful to you.
Have I changed how I think about the situation?	Introspection on self-thoughts regarding the situation.
Where do I go from here?	Looking into the future on the basis of the judgement regarding the situation.

The content of the table above is in line with Darling-Hammond & Bransford (2005) who stated that journal keeping is one of the methods used to promote teachers' development of reflective teaching. Darling-Hammond & Bransford (2005) further argued that writing engages you in a deeper level of awareness and response to teaching than you would obtain by merely discussing teaching in terms of teaching procedures and lesson plans.

2.12.2 Peer Mentoring

Peer mentoring takes form in which a teacher observes a mentor's practice or the mentor observes the teacher's practice and a record is kept for feedback purposes. In his narration of peer mentoring, Bell (2002) states that peer observation is a form of peer review within teaching; a partnership in which colleagues observe each other's practice, provide feedback and engage in a discussion aimed to promote reflection. In turn, peer review may cover a wide range of activities such as reviewing learning and teaching materials, review of a course outline, scheme of work etc. The review process is concluded with appropriate developmental feedback provided. Other objectives include the identification of strengths and developmental needs, and the formulation of an action plan for further improvement (Hammersley-Fletcher and Orsmond, 2005). Depending on the wishes of the person being observed, feedback may focus on general performance or more specifically on learning and teaching strategies, assessment or the achievement of learning outcomes (Hatzipanagos and Lygo-Baker, 2006).

A further observation can be used to assess whether intended improvements have been

achieved. The process has potential benefit for both parties, since observers may incorporate observed good practice into their own teaching (Bell, 2002).

2.12.3 Video/Audio Recording of lessons

Recording of lessons through either audio or video devices or even by use of paper and pencil is a vital process for reflective teachers. For instance, teachers can use a tape recorder to keep record of the types of questions learners pose during a lesson. These recorded experiences become the focus of what to reflect upon. Teacher education researchers suggest video/audio-cases can give teacher educators a tool with which to challenge teachers' assumptions and help them to critically examine their beliefs and values about learning and teaching (Bailey, 2000; Boling, 2007). By examining our foundational beliefs through conversation with our peers in the context of what video/audio-case studies can provide, teachers learn, as Paul (1993) suggests, not just *what* to think but also *how* and *why* to think. Abell, Brain and Anderson (1998, p.505) found that "video/audio-cases helped uncover inconsistencies in teachers' thinking and concluded that case studies caused teachers to question previously held assumptions and theories". Such findings support Younker's (2002) writing on the value of funded experience in a group setting to inspire reflective thinking. Similarly, Boling (2007) indicated that viewing and discussing video/audio-cases encouraged teachers to reflect on their prior experiences and examine their assumptions and beliefs. By viewing instances of teaching that differed from their own personal experiences, teachers began to consider alternative points of view and problematize previously unquestioned beliefs.

2.12.4 Learners' feedback

Feedback from learners can be obtained through ordinary questioning. It may be advanced by giving them questionnaires or interviewing them. Their responses become data gathered on their perspectives towards the quality of learning and teaching in the classroom. In the study guide titled ''Assessment and Evaluation'' Wolfaardt (2014) argues that learners' perceptions of learning experience in class is sometimes the most direct way to weigh the effectiveness of teaching methods. What learners perceive and experience in the class directly determines how effectively they are learning. Collecting learners' perception of teaching should be carried out several times in the term, to allow opportunities to correct poor practices rather than leaving till the end of the term (Wolfaardt, 2014). Two common modes of collecting information about learners' perceptions towards teaching are questionnaires and interviews, though at times teachers may use cards to collect learners' views on the quality of learning and teaching.

2.12.5 Teachers' Portfolio

Portfolios provide documented evidence of teaching from a variety of sources, not just learners' ratings and provide context for that evidence (Vanderbilt University, n.d). The process of selecting and organizing material for a portfolio can help one reflect on and improve one's teaching. Portfolios are a step toward a more public, professional view of teaching as a scholarly activity. Portfolios can offer a look at development over time, helping one see teaching as an ongoing process of inquiry, experimentation, and reflection. Teaching portfolios capture evidence of one's entire teaching career, in

contrast to what are called course portfolios that capture evidence related to a single course.

2.12.6 Action Research

Action research is viewed as some sort of reflective process of progressive problem solving. It is a systematic, reflective study of a teacher's actions and the effects of these actions in a school or classroom context Coghlan (2015). An idea that is most popular to the various interpretations of action research is that, research strategies of social science can be used to solve social practice. In his definition of action research Fullan (2007), for instance defined action research as "the study of social situation with a view to improve the quality within it" (p.69). In their contribution to the definition of action research, Burns (2015); Hong and Lawrence (2011) and Coghlan (2015) stated that, action research is a form of self-reflective inquiry undertaken by participants in social situations in order to improve rationality and justice of their own social, educational practice, their understanding of these practices and the situation in which practices are carried out. Hong and Lawrence (2011) and Coghlan (2015) further points out that action research can be carried out individually, by groups of teachers, or by teachers in collaboration with academic researchers. It can therefore be concluded that action research includes data collection and data analysis on learning and teaching in the classroom for the purpose of advancing quality learning and teaching. Furthermore, action research can be viewed as a tool of curriculum development consisting of continuous feedback that targets specific problems in particular school settings (National Institute for Educational Development [NIED], 2005).

2.12.7 Reflective supervision

This approach expands on the idea that supervision is a context for learning and professional development (Parlakian, 2001). Reflection in a supervisory relationship requires a foundation of honesty and trust. Parlakian (2001) further states that the goal of reflective supervision is to create an environment in which people do their best thinking one characterized by safety, calmness, and support. Generally, supervisees (teachers) meet with supervisors (principal or head of department) on a regular basis, providing material (like notes from class visits, videos, verbal reports, etc.) that will help stimulate a dialogue about the work. As a team, supervisor and supervisee explore the range of emotions (positive and negative) related to learning and teaching which the supervisee is managing. As a team, they work to understand and identify appropriate next steps.

Reflective supervision is not therapy, it is focused on experiences, thoughts, and feelings directly connected with the work (Parlakian, 2001*)*. Reflective supervision is characterized by active listening and thoughtful questioning by both parties. The role of the supervisor (principal or head of department) is to help the supervisee (teacher) to answer his/her own questions and to provide the support and knowledge necessary to guide decision-making. In addition, the supervisor provides an empathetic, nonjudgmental ear to the supervisee. Working through complex emotions in a “safe place” allows the supervisee to manage the stress s/he experiences on the job. It also allows the staff to experience the very sort of relationship that s/he is expected to provide for learners in the classroom (Parlakian, 2001).

Supervisors can also support staff's professional development by using supervisory meetings as an opportunity to scaffold, or support the acquisition of new knowledge. One way of doing this, is to encourage supervisees to analyze their own work and its implications. Reflection is important because it empowers staff to assess their own performance *(*Parlakian, 2001). Awareness of one's strengths, as well as one's weaknesses and vulnerabilities, allows individuals to make mid-course corrections in work performance that feel natural, unforced, and generated from within.

Literature on the different methods of applying reflective teaching informed some questions included in the tools used to collect data in this study. The responses of the teachers to questions relating to the methods of applying reflective teaching and the observation of lessons yielded findings that were compared to the methods identified in the literature of this study.

2.13 SUMMARY

This chapter presented literature reviewed nationally and internationally on reflective teaching and the academic performance of learners. There seems to be limited literature in Namibia on the potential effect of reflective teaching on the academic performance of learners. Though literature indicates that teachers have a positive attitude towards reflective teaching. Literature further revealed the need to equip teachers with skills and knowledge required to effectively engage in reflective teaching in order to enhance learning and the academic performance of learners. The chapter

covered the following sub-titles; definition of reflective teaching, theoretical framework of the study, teachers' conceptual understanding of reflective teaching, the value of reflective teaching on the performance of learners, guided participation through teaching, models of reflective teaching, levels of reflections, methods of reflective teaching and finally the value of reflective teaching. The next chapter covers content on the research methodology (case study) used in this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter describes the methodology and procedures that were followed in the undertaking of this study. The following are the sub-components of this chapter that are discussed: research design, population, sample and sampling procedure, research instruments which includes; Reflective Teaching Closed and Open Ended Questionnaires (RTCOEQ), Reflective Teaching Lesson Observation Checklist (RTLOC) and Reflective Teaching Interview Schedule (RTIS), data collection procedures, data presentation and analysis and finally, the chapter concludes with the presentation of ethical considerations.

3.2 RESEARCH DESIGN

This study followed a mixed methods case study design. A mixed methods case study design is a type of mixed methods study in which the qualitative and quantitative data collection, results and interpretations are used to provide in-depth evidence for a case(s) or develop cases for comparative analysis (Creswell & Clark, 2018). Creswell & Clark (2018) further state that a mixed methods case study is especially suited for learning more about a little known or poorly understood situation. This design was most suited to this study as there was little known on the grade 12 teachers' understanding of reflective teaching and learners' performance in the Zambezi Region. This is in line with Creswell and Clark (2018) who argued that the choice of mixed

methods case study design is based on the researcher needing to use both qualitative and quantitative information to best describe a case or to compare cases. Furthermore, Creswell (2014) states that the end goal of a mixed methods case study design is to generate and describe a case or multiple cases, the philosophical assumption tends to be an involving, constructivist approach. This philosophy holds the view that many perspectives are available and that they need to emerge during the research process to fully describe the complexity of a case.

Though there are a variable number of factors that may influence learners' performance, in this study the researcher narrowed down the study to the grade 12 teachers' understanding of reflective teaching and how this understanding and practice impacted learners' performance. This, as Creswell (2014) indicates, is the advantage of the mixed method case study design as it allows the researcher collect diversely rich qualitative and quantitative data focused on a specific and interesting case(s).

3.3 POPULATION

In this study, the target population was all senior secondary school (Grade11-12) teachers in the Zambezi Educational Region. Grade 11 is included here because usually, the same grade 12 teachers teach both grade 11 and 12 learners. There are one hundred and thirty (130) senior secondary school teachers (Grade11-12) in the Zambezi Region. There are ten senior secondary schools in the Zambezi Region (MEoAC,2017).

3.4 SAMPLE AND SAMPLING PROCEDURE

3.4.1 Sample

A sample of purposively selected five senior secondary schools out of ten were considered for this study. From each of the five senior secondary schools, a sample of three teachers, one teacher from each of the fields of study offered at each of the participating school (Natural Sciences, Social Sciences and Commerce) was further purposively selected. The sample of teachers consisted of subject heads and ordinary teachers. A decision was made that the principals of the participating schools should constitute the sample. The principals were included in the sample as they are the school heads and they would therefore be expected to reinforce reflective teaching at their respective schools. The total sample of this study therefore comprised of fifteen (15) teachers from five senior secondary schools and five (5) principals of these selected schools. Therefore, the total sample of this study was twenty (20) participants.

3.4.2 Sampling procedure

Purposive sampling was adopted in selecting five schools out of the ten senior secondary schools in the Zambezi Region for this study. Purposive sampling is a sampling method that helps to select those individuals or objects that will yield the most information about the topic under investigation (Maree, 2013 and Creswell & Clark, 2018). Though there were slight differences in the performance of individual schools in the Zambezi Region, with Senior Secondary School A and Senior Secondary School B performing better than other schools over the years, Senior Secondary School C falling within the intermediate performance category while

Senior Secondary School D and E are classed under the lower performance category. The selected schools were categorized in the three levels as indicated above, using extracts from the NSSCO regional rankings (Ministry of Education, Arts & Culture, 2010 - 2016) on the performance of secondary schools in the Zambezi Region. The performance of the ten (10) senior secondary schools in the Zambezi Region remained relatively the same over the years. Purposeful sampling was most suited here in order to include a sample that bared a fair representation of the senior secondary schools in the Zambezi Region on the basis of the grade 12 annual performance.

Stratified purposive sampling was applied in selecting the fifteen teachers to participate in this study. Stratified purposive sampling means selecting participants according to pre-determined criteria relevant to a particular research question (Maree, 2013). The researcher wanted to have a sample that represent the three different fields of studies (Natural Sciences, Commence and Social Studies) offered at senior secondary schools in the Zambezi Region. From the natural science field, the researcher chose to work with either Physical Science or Biology teachers, while from the social science field, the researcher opted to work with Geography teachers, in the Commerce field the researcher worked with either Entrepreneurship or Business studies teachers. This implies that at each of the five schools, three teachers (one teacher from each of the fields of study where all three fields were offered) were purposively selected for this study. It is important to note that, though all fields of Study were considered, the focus was not necessarily on the subjects taught, but rather how principals reinforced reflective teaching at school, how teachers from all fields of

studies in the Zambezi Region applied and understood the concept of reflective teaching and how it potentially influenced learners' performance in the NSSCO national examination.

3. 5 RESEARCH INSTRUMENTS

The instruments that were used to identify teachers' reflective teaching skills in this study were adapted to the needs of the study. The tools are as follow: Reflective Teaching Closed and Open - ended Questionnaire (RTCOEQ) Appendix A for teachers, Reflective Teaching Lesson Observation Checklist (RTLOC) Appendix B for teacher and the Reflective Teaching Interview Schedule (RTIS) Appendix C for teachers and principals (see appendices). The acronyms used here were generated from the names of the tools as listed above by the researcher.

3.5.1 Reflective Teaching Closed and Open - ended Questionnaire (RTCOEQ): Appendix A

The RTCOEQ (Appendix A in the paragraph above) was predominantly made up of Open - ended questions with a few closed ended questions. A few Closed - ended questions were included in order to guide the responses and to collect a certain type of data that would otherwise prove difficult to collect by means of Open - ended questions. Open - ended questions required teachers to communicate their thinking, thereby providing the researcher with valuable information that can inform the study (Mirzaeia, Phangb & Kashefic, 2013). Open - ended questions allow participants to answer the questions in their own words in explaining the meaning of reflective thinking and the reflective thinking skills that they use in their classroom (Davies and

Beaumont, 2007; Mirzaeia et al., 2013). Open - ended questions cannot be answered with a simple “yes” or “no” response and thus they encourage the interviewee to provide more information (Davies and Beaumont, 2007). The RTCOEQ were administered to the teachers only in order to collect data on how the concept of reflective teaching was understood, applied and the value attached to it.

3.5.2 Reflective Teaching Lesson Observation Checklist (RTLOC): Appendix B

The RTLOC was used to assess the application of reflective teaching as teachers engaged in the teaching process. The RTLOC consisted of attributes anticipated to be observed in the classroom of a reflective teacher. A reflective teacher would for instance introduce the learning outcomes of a lesson in the introductory phase of the lesson presentation, give some tasks that engage learners during the development phase of the lesson and finally do a recap at the reinforcement phase of the lesson. For each of the participating teachers, a single lesson presentation was observed. At the end of each lesson, a post lesson discussion was held. In the post lesson discussion, teachers were asked simple reflective question as observed in Appendix B. A single lesson observation for each teacher was deemed enough as lesson observation was only one of the two other tools used to gauge the practice and understanding of teachers on reflective teaching and how it possibly influenced learners’ performance in the NSSCO annual examination in the Zambezi Region.

3.5.3 The Reflective Teaching Interview Schedule (RTIS): Appendix C

The RTIS was used to clarify and iron out inconsistencies in the RTOEQ responses in relation to the RTLOC observed practice / application of reflective teaching in the

classroom for the 15 teachers. Data collected through Appendix A indicated that teachers had knowledge about reflective teaching. However, data collected through Appendix B proved the opposite, as less reflective teaching attributes were observed during the lesson presentation. Interviews were held individually in order to avoid personal biasness that is likely to emerge in a group interview set up in the quest to group conformity. Moreover, the RTIS was also administered to the school principals (as school heads) to determine how reflective teaching was being reinforced at the selected schools of the case study. Directly interviewing principals and teachers revealed their thoughts on some unanticipated aspects, which generated lots of useful information.

3.6 TRIANGULATION OF DATA

Collecting data by the use of two or more tools requires triangulation for validation of data through cross verification from two or more sources. In order to ensure validity and reliability of the data collected, the researcher asked questions which are similar in intent but different in structure and format. The researcher used the three tools to gather data under the main themes of the study in order to discover commonalities and differences within the collected data.

3.7 DATA COLLECTION PROCEDURE

The researcher handed out the Reflective Teaching Closed and Open - ended Questionnaire (RTCOEQ) Appendix A, to the teachers in advance. The researcher collected the completed RTCOEQ after two days for analysis. While collecting the

completed questionnaires, the researcher negotiated time for a lesson observation visit with the participants in order to facilitate teachers' readiness and ensure that the time selected suited the participant's schedule. Thereafter, lesson observation using the Reflective Teaching Lesson Observation Checklist (RTLOC) Appendix B, was used to observe reflective teaching in a single lesson presentation for each of the teachers. Finally, the Reflective Interview Schedule (RTIS) Appendix C, was used to collect data on variables that remained unclear and contradictory from the data collected through the RTCOEQ and the RTLOC (It should be noted that school principals only took part in the interviews and they were equally interviewed individually).

3.8 DATA PRESENTATION AND ANALYSIS

In this study, data was presented by means of verbatim responses, tables, charts and graphs. Data collected was predominantly qualitative, with a fewer cases of quantitative data collected to support the qualitative data collected. Common trends in the data collected were analysed by adapting the steps developed by Creswell and Clark (2018) in data analysis for mixed methods design. These data analysis steps proposed by Creswell were adapted and linked to the objectives of this study as follow:

a) Obtain results by quantitatively analysing the quantitative data and qualitatively analysing the qualitative data.

b) With the quantitative and qualitative results identified, look for common concepts across the sets of findings (this is why it is important to gather data on the same or similar concept during quantitative and qualitative data collection).

c) Organisation of details about the case. The specific views of teachers on reflective teaching and learners' academic performance was arranged orderly (pros and cons) and grouped accordingly. This made it easy to induce themes and possible theories from the data collected.

d) Categorisation of data in line with the objectives of the study. The researcher then categorised the gathered responses into the three main categories (research objectives), namely: teachers' understanding and practice of reflective teaching in the Zambezi Region, the value attached to applying reflective teaching in the sample schools of the Zambezi Region and finally, how principals assess reflective teaching and its influence on learners' performance.

e) Interpretation of single instances. Specific responses that deviated from the common responses were examined for the specific meaning they might have in relation to the understanding of grade 12 teachers in the sample schools on reflective teaching and learners' performance.

f) Identification of patterns. The understanding of teachers on reflective teaching and learners' performance was scrutinized for underlying themes and other patterns that characterised their understanding on reflective teaching and learners' performance more broadly than a single piece of information can reveal.

g) Analysed data according to gender, teaching experience, training received and to see if a pattern emerged around these issues.

h) Synthesis and generalisation. The overall portrait of the understanding of grade 12 teachers in Zambezi Region on reflective teaching and learners' performance was constructed. Conclusion were drawn from the output of the triangulated data analysis from the three tools that were used to gather data. Triangulation of data was done in order to ensure validity and reliability of findings of the study.

3.9 RESEARCH ETHICS

Firstly, the ethical clearance certificate was obtained from the University of Namibia Research Ethics Committee (UREC) to carry on with the study (Appendix D). Secondly, permission or authorisation to enter the research site (schools in the Zambezi Region) was obtained from the Permanent Secretary of the Ministry of Education, Arts and Culture (Appendix E). Thereafter, permission was obtained from the Director of Education in the Zambezi Region and the principals at the respective schools to obtain access into the schools. Thirdly, all participants were given consent letters (Appendix F) to sign after thorough explanation of the purpose of the study, their freedom to participate and their right to withdraw from the study at any point they wish to. Lastly, the schools and participants were granted anonymity by using false names that could not provide any clues that may be used to trace their identity. After capturing, analysing and interpreting data in a soft copy format, the researcher saved it in a computer with a security code only known to the researcher. Soft copies will be permanently deleted from the computer after a period of four to five years after the dissertation is assessed. The collected hard copies of data were securely kept in a safe

whose key is solely kept by the researcher only. This data will be kept for the duration of four to five years after the dissertation is assessed, thereafter hard copies will be completely destroyed by burning it.

3.10 SUMMARY

This chapter presented the mixed methods case study research design adopted in this study. The population of the study was the ten senior secondary schools in the Zambezi Region. A sample of five schools were purposely selected for this study. Three types of research instruments were used to gather finding of this study. Data collection procedures included handing out the RTCOEQ to teachers two days in advance, there after the completed RTCOEQ were collected. At the time of collecting the RTCOEQ, an agreement with the participating teachers on the time for the lesson observation was reached. The chapter further covered information on the data presentation and analysis as well as the ethical considerations observed in this study. The next chapter discusses the findings of this study which were unveiled by means of triangulated analysis and discussion of the data collected in each of the research tools used to collect data in this study.

CHAPTER 4: PRESENTATION AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

This chapter presents discussed results of the collected data in response to the research objectives of the study. The presentation of data commences with a reminder of the objectives of the study to the reader. Thereafter the chapter presents and discusses the data collected through the different tools, namely; RTCOEQ (Appendix A), RTLOC (Appendix B) and RTIS (Appendix C) in the given order. Through the discussion of the results, the relationship between the theoretical framework used in this study and the collected data is brought to light. A teacher's guide on reflective teaching was designed as a product that responds to the needs of the teachers in reflective teaching identified in study.

Since three different tools were used to collect data, triangulation was used to enhance the credibility of the findings as data was looked at from three different perspectives, namely: RTCOEQ, RTLOC and RTIS. In order to ensure lucidity, the presentation and discussion of the collected data followed the objectives of the study:

i) To elicit teachers' responses on their understanding of reflective teaching in the Zambezi Region.
ii) To establish the value attached by teachers to applying reflective teaching in Zambezi Region.
iii) To determine how principals assessed the application of reflective teaching and its influence on learners' performance in the Zambezi Region.

iv) To produce a tool that responds to the needs of teachers identifies through objectives: 1.3.1, 1.3.2 and 1.3.3. (A teachers' guide on reflective teaching).

4.2 TEACHERS' GENERAL INFORMATION

The teaching experiences of the teachers from whom the data of this study was gathered ranged from one year of teaching experience to more than ten years of teaching experience. It is important to note that only teachers filled in the RTCOEQ, principals were exempted from filling in the RTCOEQ. Principals were exempted from filling in the RTCOEQ because the nature of the questions included in the RTCOEQ did not require answers from the school heads. However, a separate section on the interview schedule was reserved for principals only, in order to source relevant information required from them. The gender ratio for the total sample, was 11 males to 4 females. The summary of academic qualifications and the fields of specialisation for the participating teachers is as displayed in Table 4.1.

Table 4.1. A summary of academic qualifications for participants of the study

Qualification	**Number of teachers**		**Field of study**	**Number of teachers**
BETD	1		***Social Studies***	4
BETD + MASTEP	3		***Natural Sciences***	7
HE	1		***Commerce***	4
B.E.d	6			
Bed. Hon	3			
Non Educational Qualification	1			

From Table 4.1, it can be concluded that the highest number of teachers who participated in this study were holders of the bachelor's degree in education. Furthermore, data revealed that the Natural Sciences field of study is commonly offered at all five schools from which teachers were sampled for this study. However, it was observed that only one of the five schools offered all three options for the fields of specialisation in table 4.1. The other four schools either offered a combination of either Natural Sciences and Commerce or Natural Sciences and Social Studies. Two of the four schools offered a combination of Natural Sciences and Commerce while the other two offered a combination of Natural Science and Social Sciences.

4.3 TEACHERS' UNDERSTANDING AND APPLICATION OF REFLECTIVE TEACHING IN THE ZAMBEZI REGION.

In the endeavour to build meaning of the understanding and application of reflective teaching by the teachers in the Zambezi Region, relevant information collected through the three different tools is presented and discussed here.

4.3.1 Teachers' orientation to learners (from appendix A)

In order to determine the teachers' position to learners in relation to reflective teaching, teachers were asked to tick in the appropriate box for each of the statements in table 4.2. The options are SD, D, U, A and SA (See the key below to understand the acronyms). It should be noted that some options (on the RTCOEQ) were omitted by teachers hence, there are cases where the total of responses do not add to fifteen.

Table 4.2. Teachers' orientation to learners in the classroom

SD = Strongly disagree, **D** = Disagree, **U** = Undecided, **A** = Agree, **SA** = Strongly agree.

In my class I ensure that:	**SD**	**D**	**U**	**A**	**SA**
Objectives of the lesson are made known to the learners.	1			4	8
Learners are motivated to achieve the stated lesson objectives.				7	6
I identify strategies to achieve the lesson objectives.				6	6
I encourage active participation of learners in the lesson.			1	5	6
I revise objectives when necessary.				7	6
I monitor the progress of learners towards achieving lesson objectives.				8	4
I ask probing questions when learners are engaged with a challenging task.			1	6	6
I provide constructive feedback to the learners.				5	7
I use learners' feedback to improve teaching.	1			7	4
I reflect on interaction in the class.		1		6	4
I recognise learners' effort to learn.				8	4

As can be seen in Table 4.2, teachers' responses depicted a very good teacher to learner orientation in relation to reflective teaching. On average, data in Table 4.2 shows that 12 out of 15 teachers indicated good orientation towards the various attributes used in the table to point out teachers' disposition to reflective teaching. It is however important to note that some of the attributed reflected in Table 4.2 as being applied in the classes of the visited teachers, were rather not observed in some classes when the researcher conducted class visits. One of such attributes was the statement of the learning objectives. Certain teachers simply continued sharing the content of the day's lesson without introducing the lesson objectives of the topic. The absence of the lesson objectives renders the lesson directionless, a situation that complicates the possibility of undertaking effective reflection of the lesson.

4.3.2 Approach to teaching

In order to determine the teachers' orientation to teaching, teachers were asked to tick in the appropriate box for each of the statements below. The options are **SD, D, U, A** and SA (See the key below to understand the abbreviations).

Table 4.3 Shows teachers' approaches to teaching through the options shown in the table

Key: SD = Strongly disagree **D =** Disagree **U =** Undecided,
A = Agree **SA =** Strongly agree

In my class I teach learners how to:

	SD	**D**	**U**	**A**	**SA**
Set their own learning goals.		1	1	5	5
Identify strategies to achieve their goals.		1	2	5	4
Revise their goals when necessary.		1	1	7	3
Be motivated to learn.			1	7	4
Articulate what is expected of them.		1		6	5
Monitor their progress toward achieving their goals.		1	1	7	3
Adjust their actions on their own to achieve the goals.		2		8	2
Modify or adjust strategies that are unsuccessful.			3	6	4
Use feedback from peers to improve their work.		1	2	5	4
Revise version of their work to improve them.	1		1	6	4
Reflect on their process of achieving their goal.		1	2	5	4
Evaluate their own work.		1		7	4
Attribute their success to their effort.			1	8	3
Work well with fellow learners.		1		8	3

As can be seen in Table 4.3, there was a consistent single teacher who disagreed with each of the statements that the majority teachers claimed to be implementing in their classes. One particular example that can be picked from the table is a statement that states that: "In my class I teach learners how to set their own learning goals". Out of the 12 teachers who responded to this question, one teacher disagreed with the

statement that he / she teaches learners to set their own learning goals. This characterises lack of reflectivity as Attard and Armour (2006) stated that reflective teachers tend to teach their learners to become reflective learners.

4.3.3 The meaning of reflective teaching

In order to establish the teachers' understanding of reflective teaching, selected questions were presented to the teachers in order to elicit responses that would indicate whether teachers understood the meaning of reflective teaching or not.

Question 1 (from Appendix A): *Could you share your understanding of reflective teaching***.**

From the responses received**,** most teachers claimed familiarity with the concept of reflective teaching. However, one of the participating teachers did not respond to the question as can be observed in Table 4.4.

The table 4.4 summarises the distribution of teachers' responses to question 1 above:

Table 4.4 The distribution of teachers' responses to question 1 (Appendix A)

The distribution of teachers responses to question 1 above.		**Percentage**
Number of teachers who shared their understanding of reflective teaching.	10	67%
Number of teachers who indicated that they had no idea about reflective teaching.	4	23%
Number of teachers who did not attempt the question.	1	10%

As can be observed in Table 4.4 above, data collected indicated that ten out of fifteen (67%) teachers from the selected schools indicated that they understood the meaning of reflective teaching, four out of fifteen (23%) teachers indicated that they did not understand the meaning of reflective teaching while one out of fifteen (10%) teachers indicated uncertainty on whether they understood the meaning of the concept or not. It can be deduced from the data in table 4.4 that five out of fifteen (33%) teachers from the selected schools (Zambezi Region) lack the understanding of reflective teaching.

Below are the selected verbatim responses of teachers to the question "Could you share your understanding of reflective teaching''.

Teacher 1: *A systematic approach in teaching where a practitioner (teacher) looks back at his work or practice with the aim of improving his/her own practice.*

Teacher 2: *Reflective teaching refers to a review which is carried out after presenting a lesson to evaluate or identify the weakness and strength of a lesson.*

Teacher 3: *A process where the teacher looks into the methods he/she has used and how they can be modified (improved) to achieve the intended outcomes*.

Teacher 4: *Reflective teaching is when a teacher thinks over the lesson, analysing how something was taught and how the practice might be improved*.

Teacher 5: *I feel it is a process of evaluating one's teaching per lesson to find*

out whether the basic competencies have been taught as planned.

Teacher 6: *To check back on how well teaching went on. Did learners understand or not.*

Teacher 7: *Visualising your ended lesson to establish the strength and weakness of the lesson taught.*

Teacher 8: *This gives feedback to the teacher as to what really happened in the class.*

Teacher 10: *Doing reflection of each lesson taught and identify the strength and weakness of the lesson, see weather objectives were met.*

Teacher 11: *It is when a teacher makes a follow up to see what he/she taught was understood by learners, this can be done by asking questions to learners, giving homework or test. A process of self-observation and self-evaluation.*

Teacher 9, 12, 13, & 15 *indicated that they were not familiar with reflective teaching, while teacher 14, omitted the question.*

As can be observed from the list of verbatim responses of the teachers and in Table 4.4, ten out of fifteen teachers (67% of teachers) claimed to understand the meaning of reflective teaching. This implies that only 67% of the teachers who participated in the study had an idea of what reflective teaching is about. This equally meant that four

out of fifteen (23%) of teachers consulted were not familiar with the concept of reflective teaching. The verbatim responses of the teachers who claimed to understanding the meaning of reflective teaching confirmed familiarity of teachers with reflective teaching. Literature review indicated that reflective teaching means looking back at what one does in the classroom and giving it a meaning by attaching the why question to what you go through (Loughran, 2006; Bailey, 2012 & Spalding, 2020). Loughran (2006) further asserts that, in the classroom context, reflective teaching would therefore mean collecting data on learning and teaching, organising data, analysing it, presenting it and making informed decisions that lead to better learning and teaching. Looking at the verbatim responses of the teachers above, it can be observed that the teachers' responses align to the definition of reflective teaching as alluded to in the literature reviewed (Loughran, 2006; Bailey, 2012 & Spalding, 2020). The findings of the study further revealed that teachers conformed to the academic tradition of reflective teaching.

It is however important to note that the 23% of teachers who indicated that they were less familiar with reflective teaching, were being truthful to what really happen in their classes. This is mainly because upon visiting the classes of the participating teachers (especially those who indicated familiarity with reflective teaching), crucial attributes of reflective teaching such as stating the objectives of the lesson, reflection on action and the lack of knowledge on the methods applied in reflective teaching contradicted their claim of familiarity to reflective teaching.

From the responses of the 67% teachers who claimed familiarity with the concept of reflective teaching in the RTCOEQ, it was noted with interest that in their definition of reflective teaching, they all seemed to strike at the core purpose of reflective teaching. It was however, equally noted that all teachers who claimed familiarity with reflective teaching had a narrow view of what reflective teaching entails as can be seen in their provided definitions of reflective teaching. This scenario relates to the findings of study that was done in Indonesia by Yanuarti and Treagust (2015) who found that teachers' perceptions to reflective teaching were limited to reflection before closing a lesson and took account from the word reflection, to look back, conclude or review of learners' understanding. Teachers in the Zambezi region did not recognise that they already conduct reflection in and on action and do it to make their teaching make better sense to their learners. One particular definition given by one of the participating teachers which supports the statement above was, "*Reflective teaching refers to a review which is carried out after presenting a lesson to evaluate or identify the weakness and strength of a lesson"*. In general teachers looked at reflective teaching as some form of post-mortem that would naturally occur only at the death of a lesson. Teachers seemed to focus on the kind of reflection know as *reflection on action as* a reactive approach to teaching and were unaware of reflection *in action* which is a proactive approach to teaching as claimed by (Yanuarti and Treagust, 2015).

It implies that the 23% of teachers who indicated that they lacked understanding of reflective teaching did not look back at what transpired in their classes and seek alternative solutions to improve learning and teaching. Lack of reflective teaching is

one of the main reasons for the consistent poor performance of both teachers and learners in schools (Ferwana, 2006 and Palding, 2020). As stated in this discussion, more than 23% of teachers from the selected schools did not effectively apply reflective teaching in their classrooms due to lack of skills and knowledge in that area.

It was also worth determining whether or not, the 67% of teachers who indicated familiarity with reflective teaching really knew how to apply reflective teaching in their lessons or not. The RTLOC was mainly used to observe the application of reflective teaching during lesson presentation. As can be observed in Table 4.9, during the use of appendix B (RTLO it was observed that about 47% of the teachers did not demonstrate the critical aspects of reflective teaching such as; listening carefully to learners' questions, responding appropriately to learners' questions and asking learners to sum up the major learning objectives of the lesson. Lack of reflection in action was eminently experienced in the classes that were observed. This serves as evidence that though 67% of teachers (in appendix A: RTCOEQ) claimed familiarity with reflective teaching, they were not really conversant with its application in the classroom.

4.3.4 Method(s) used to apply reflective teaching by teachers in the Zambezi Region

Question 2.1 (from Appendix A): *Which of the following reflective teaching methods do you use in your classes if any?*

Table 4.5: Distribution of teachers' responses on the methods of reflective teaching used in the Zambezi Region.

Method of reflective teaching	**Total number of teachers**
Reflective Journaling	1
Recording of lessons	7
Peer mentoring	4
Learners' feedback	10
Teacher's portfolio	1
Action research	2
Reflective supervision	3
Others (specify)	1(attendance register)

In order to determine the methods of reflective teaching used by teachers in the sample schools of the Zambezi Region, teachers were provided with a variety of methods commonly used to apply reflective teaching to choose from and explain how they applied a particular chosen method. As can be observed in Table 4.5 above, the highest number of teachers chose learners' feedback as a method favourably used to engage in reflective teaching. The second highest chosen method of applying reflective teaching is recording of lessons. Reflective journaling and teachers' portfolio received the least favour as a method of applying reflective teaching in the Zambezi Region.

As can be observed in Table 4.5 the most frequently cited method of reflective teaching was learners' feedback. Ten out of fifteen teachers cited learners' feedback as a method adopted in their endeavour to apply reflective teaching. It is further important to note that when teachers explained how learners' feedback was used as a method of reflective teaching, they predominantly referred to learners' feedback as "*the observed learners' performance in the assessment activities*". In other words, the teacher would give a test or any other kind of assessment activity to learners, mark it and there after use the outcome as a basis for reflection. As Yanuarti and Treagust (2015) argued, this is a reactive form of reflection as more time could have passed before learners could actually receive corrections for the work they misinterpreted or misunderstood. Moreover, feedback from learners' assessment as a basis for reflection is effective only when it is coupled with other methods of reflective teaching as (Fatemipour, 2012) argued. This is mainly because feedback from assessment activities such as written tests or homework do not provide a whole scope of certain attributes of learning and teaching interactions in the classroom. This further revealed the discrepancies in the comprehension of reflective teaching in visited schools of the Zambezi Region.

The second highest method cited was recording of lessons, followed by reflective supervision. The least chosen method of reflective teaching were reflective journaling and teachers' portfolio as can be seen in Table 4.5. When teachers were asked to explain how recording of lessons was used as a method for reflective teaching, they alluded to reflective journaling which is keeping records of all lessons taught with reflections done after each lesson.

In contrast to the perception given by teachers on recording lessons, Bailey (2000) and Boiling (2007) referred to recording of lessons as a method by which the teacher uses either, audio, video or written notes to capture classroom interaction during a lesson presentation. Abell, Brain and Anderson (1998) in their study, found that video / audio helped to uncover inconsistencies in teachers' thinking and concluded that case studies caused teachers to question previously held assumptions and theories. In the visited schools of the Zambezi Region, there was no evidence of recording of lessons either by video or audio. That means teachers have never had a perfect opportunity to relook their body language, tone control, classroom interaction and positioning in class. Without a video or audio recording of what transpires in the classroom, teachers may remain doubtful of observations made by their colleagues and hence this could hinder comprehensive progressive reflective teaching.

Question 2.2 (from RTCOEQ): *Please explain how you used the methods of reflective teaching opted for in question 3:*

In order to develop a good overview of teachers' understanding of the methods of reflective teaching, teachers were asked to explain how they used the chosen method see table 4.6.

Table 4.6: Teachers explanations of the methods of reflective teaching used in the Zambezi Region.

Method of reflective teaching	**How the method is used**
Reflective Journaling	
Recording of lessons	Keeping record of lesson plans in the preparation file, all learners' assessment tasks are recorded: *(Teacher 2, 4 and 5).* Reflecting on the lesson plan after teaching, check on the learners' progress: *(Teacher 10).* Give feedback after assessment, task, investigation, continuously monitor progress: *(Teacher 11).* Recording lessons, count lessons learners attended. Action research- identify a problem to learners and dwell on that problem: *(Teacher 1 and 3).* The lesson in which objectives were not met is noted and then repeated. Though the teacher ticked recording of lessons, peer monitoring, learners' feedback and reflective supervision, it can be seen from the explanation of how the method is that the teacher lacks understanding on how to use the methods selected.
Peer mentoring	When an expert teacher provides guidance to a novice teacher on issues of learning and teaching such as teaching methodology, classroom management as well as assessing learning: *(Teacher 2).*

Learners' feedback	After assessment the learners' performance will reflect the degree of their understanding: *(Teacher 3,4,6 and 7).* If a lesson did not successfully roll out, then based on reflection, I re-plan it and improve on the weakness: *(Teacher 1).* Question and answer method to be applied on the previous lesson to find out if learners mastered the previous lesson: (*Teacher 2 and 8).* Peer monitoring: through peer feedback/marking. learners get assistance from their peer. Learners feedback, the homework or class room assignment feedback summarises topic learned. I give work (written) to learners after the lesson and mark the learners' work and give feedback. (*Teacher 10 and 13).* By asking learners some questions on the tropism shown on the diagrams of seedling on the 5th day in a plastic bag. *(Teacher 11).*
Teachers portfolio	
Action research	
Reflective supervision	The HOD or school principal comes for a class visit.
Others (specify)	

As can be observed from Table 4.6, some methods (though they were chosen as part of the methods used to engage in reflective teaching) were not given explanations on how they were used. This could be attributed to teachers' not being able to articulate the application of those methods in reflective teaching due to lack of adequate training in reflective teaching. It can further be observed that learners' feedback is the method that received 40%, the highest percentage of explanations on how it is being used as a method of reflective teaching.

Findings of this study show that learners' feedback is the method of reflective teaching that was most favoured by teachers when they engaged in reflective teaching. Teachers emphasised assessment results of the learners as the dominant form of feedback that was used to determine the need for changing the teaching learning dynamics of the classroom. Wolfaardt (2014) argued that sometimes learners' criticism is not valid, but it is for every teacher to decide that in all honesty. Though, some criticism may be incorrect, the teacher is now aware of that perception and should follow the implementation guidelines, which states that both positive and negative aspects must be discussed with learners, in that way issues can be cleared (Wolfaardt, 2014).

Here are some of the explanations on how learners' feedback was being used as a reflective teaching method; "*After assessment, the learners' performance will reflect the degree of their understanding*" by implication, the quoted statement implies the teacher simply determined the need for reflections primarily from the observed performance of learners. Reflective teaching ought to be wider than learners' feedback alone as (Spalding, 2020) argued. In this case, teachers' narrowed down learners' feedback to the scores obtained in the assessments provided. This form of learners' feedback does not address the concerns of learners sufficiently and totally overlooks the aspect of reflection *in* action as the teacher may only react after scoring the assessment tasks.

Teachers were further requested to briefly explain how chosen method(s) of reflective teaching were being applied: see Chapter 4, section 4.2.5, question 4. As can be

observed in Table 4.6, teachers only described how they applied the following methods of reflective teaching, namely; recording of lessons, learners' feedback, peer mentoring and reflective supervision.

4.3.4.1 Recording of lessons

The analysis of teachers' description of how they used this method of reflective teaching depicted that the teachers' did not have adequate understanding of how to use this method of applying reflective teaching. As teachers understood it, it only meant keeping records of written lesson plans with their reflections. According to Boling (2007) and Bailey (2012) recording of lessons can take the form of either pen and paper recording, audio or video recordings. It can therefore be concluded that recording of lesson plans is wider than "*simply keeping records of written lesson plans with their reflections*" as teachers indicated in the data collected. In a follow-up interview with teachers who indicated using recording of lessons as a method of reflective teaching, the researcher asked whether these teachers have ever used audio or video recordings of their lessons. These teachers indicated that they have never conducted an audio or video recording of their classroom sessions. A lesson report describes what actually happened in the class in a certain period from the teacher's point of view. It differs from lesson plan because the lesson plan mentions what teachers intends to do during a lesson (Ferwana, 2006). No lesson report was found in the teachers' lesson preparation files, a situation that once again cements the argument that though teachers opted for this method, they had no idea what it entailed. In all

three data collection tools used, lesson recording was observed to be reduced to simply keeping a record of lessons with their reflections.

This implies that teachers may have been missing on an opportunity to observe some aspects of lesson presentation such as voice projection, non-verbal communication behaviour or gestures (body language) and the teaching pace. These and many more other aspects of lesson presentation are more likely to be captured through audio or video recordings as a method of reflective teaching (Boling, 2007 and Spalding, 2020). Inadequate application of reflective teaching methods may not yield comprehensive data that may be needed to effect the necessary changes that would impact learners' performance positively.

4.3.4.2 Learners' Feedback

Learners' feedback was the highest preferred method of applying reflective teaching (see Table 4.5). Teachers generally described their application of this method by way of giving assessment tasks, marking the tasks and thereafter using the results as barometers of decision making on changing or maintaining the classroom status quo. Does this imply that teachers would not do any reflection during a lesson presentation? Lack of reflection *in* action was eminent for all those teachers who chose learners' feedback as the only method they used to engage in reflective teaching. It can be safely concluded that such tendencies of applying reflective teaching in the form of *reflection on action* may have contributed to the persistent decline in the performance of learners

in the Zambezi Region. This is mainly because, formal assessment tasks such as tests and projects are not regularly given in class. The rare occurrence of formal assessment tasks as the basis of doing reflection could only mean continued teaching / learning environments where no problems are identified and as such no remedial action is provided the earliest.

As Schön (1983); Grushka, Hinde-Mcleod and Raynolds (2005) pointed out, learning and teaching sessions must comprise of the following circles of reflection namely: reflection in action and reflection on action. The former implies observing and monitoring and reacting to the classroom dynamics as learning and teaching unfolds. The latter implies taking time to ponder on why things happened the way they did, lessons learned and strategizing for the next encounter.

4.3.4.3 Peer mentoring

Peer mentoring is one of the methods cited as being a preferred method where some teachers engaged in reflective teaching. For this method, teachers indicated that they mostly applied it under circumstances where they lacked experience or confidence on handling certain topics in their areas of specialisation. Teachers indicated that they would either seek advice or invite an expert teacher to sit in class as they teach in order to identify possible areas that may require guidance to improve the quality of learning and teaching in the classroom. It should be noted that the description, numbers and distribution of expert teachers may not be as objective as is assumed by most teachers.

Certainly, some of the subject content experts may not necessarily be experts in the field of reflective teaching, hence the need to explore the effectiveness of the guidance provided to peer teachers on the reflection of selected lessons presented. Moreover, peer mentoring is more about having discussion on the observed weakness and strength of the lesson presentation in order to ensure high quality of teaching and learning as Bell (2002) states that peer observation is a form of peer review within teaching; a partnership in which colleagues observe each other's practice, provide feedback and engage in a discussion aimed to promote reflection.

4.3.4.4 Reflective supervision

Reflective supervision was one of the least cited methods of engaging in reflective teaching at the visited schools in the Zambezi Region. When teachers were asked to explain how this method was applied, it was observed that teachers did not have a thorough understanding of how this method works, as they simply indicated that *"the HOD or school principal comes for a class visit once in a while".* There was no mention of discussions that ought to follow thereafter. This is in contrast with Parlakian (2001) who argued that reflective supervision ought to be a regular exercise that aim to create a supervisory relationship characterised by honesty and trust, where the supervisor (HOD) and supervisee (teacher) explore a range of emotions (positive and negative) relating to learning and teaching which the supervisee is managing.

Though reflective supervision is one of the methods of reflective teaching, researchers such as Ferwana (2006) fear that reflective supervision may not be an effective method of applying reflective teaching. Though supervisors and school principals have a great responsibility to improve the application of reflective teaching, they may not mention anything about reflective teaching during their class visits because most of them may not know what it entails or be aware of such a valuable approach to teaching. This may explain the observed lack of improvement in the NSSCO regional ranking of the Zambezi Region.

4.3.4.5 Teachers observed level of engaging in reflective teaching.

Table 4.7 summarises the numbers of teachers observed to engage in reflective teaching at a particular level.

Table 4.7 The levels of reflective teaching at which teacher in the Zambezi Region (sampled schools) were observed to engaged in reflective teaching

Level of reflective teaching	**Description**	**Total number of teachers**
Level 1: Technical rationality	At this level, teachers focus on their personal behaviour and skills within the classrooms. The teacher considers only the technical application of educational knowledge and basic curriculum principles for the purpose of attaining the desired objectives.	9

Level 2: Reflection at contextual or practical plan	When teachers focus on the theory behind their classroom practices. They can then look into alternative practices they might prefer to use, depending on the needs of their learners. Plus, the content of level 1 above.	4
Level 3: Critical or dialectical reflection	When teachers focus on the moral, ethical and social issues associated with their practice. Plus, the contents of level 1 and 2 above.	2

As can be observed in Table 4.7, 9 out of fifteen or 60% of teachers from the selected schools were observed to engaged in reflective teaching at the lowest level (Level 1) of reflective teaching, 4 out of fifteen or 27% were observed engage in reflective teaching at Level 2, which is the intermediate level of reflective teaching, while the lowest number of teachers, 2 out of fifteen or 13% were observed to engage in reflective teaching at Level 3, the highest level

There are three levels of reflective teaching as Farrell (2004) indicated. These levels are: Level 1 (technical rationality), Level 2 (contextual or practical plan) and Level 3 (critical or dialectical reflection). The highest level of reflective teaching being the critical or dialectical reflection, followed by the contextual or practical plan and the lowest being the technical rationality level.

As can be observed in Table 4.7 a bigger number of teachers, (60%) were observed to engaged in reflective teaching at Level 1, the technical rationality level of reflective teaching. The above percentage was equally confirmed from data collected through

the RTLOC, as 60% of teachers who were observed only focused on the technical application of educational knowledge and basic curriculum principles for the purpose of attaining the desired objectives (Farrell, 2004). Farrell (2004) asserts that reflective teaching at Level 1 is basically about action in the classroom. When teachers plan at the level of action, they are concerned only with what they do in their classrooms. They tend to focus on their behavior and skills within the classrooms. By implication, it can be inferred that 60% of teachers operating at the technical rationality level of reflective teaching in the Zambezi Region tend to merely focus on their behavior and skills within the classroom (reflection *in* action). It also means that these teachers do not consider analyzing the reasons for the actions taken, they do not contextualize their reflections. Teachers operating at Level 1 do not focus on the theories behind their classroom practices. They are less likely to look into alternative practices they might prefer to use depending on their learners' needs. Chances are that no change is expected from the learners' examination outputs in successive years, a situation that was observed in the Zambezi Region for the past six years.

At Level 2 of applying reflective teaching, Table 4.7 indicates that only 27% of the teachers from the selected schools engaged in reflective teaching at this level (practical plan or contextual level of reflective teaching). This was also confirmed by the observation data collected by means of the RTLOC. This level of reflective teaching is more advanced than Level 1 discussed above. At this level, the teacher becomes more concerned with clarifying assumptions and predispositions underlying competing pedagogical goals while assessing the educational consequences towards

which a teaching action leads (Farrell, 2004). Teachers engaging in reflective teaching at the practical plan level of reflective teaching are most likely to help learners score quality grades in national examinations. This is mainly because their scope of reflection in relation to learning and teaching is expanded. This explains the observed situation in the Zambezi Region where only a minimal number of learners score quality grades in some subjects but overall fail to qualify for tertiary institutions because the majority of their scores are non-quality scores or grades.

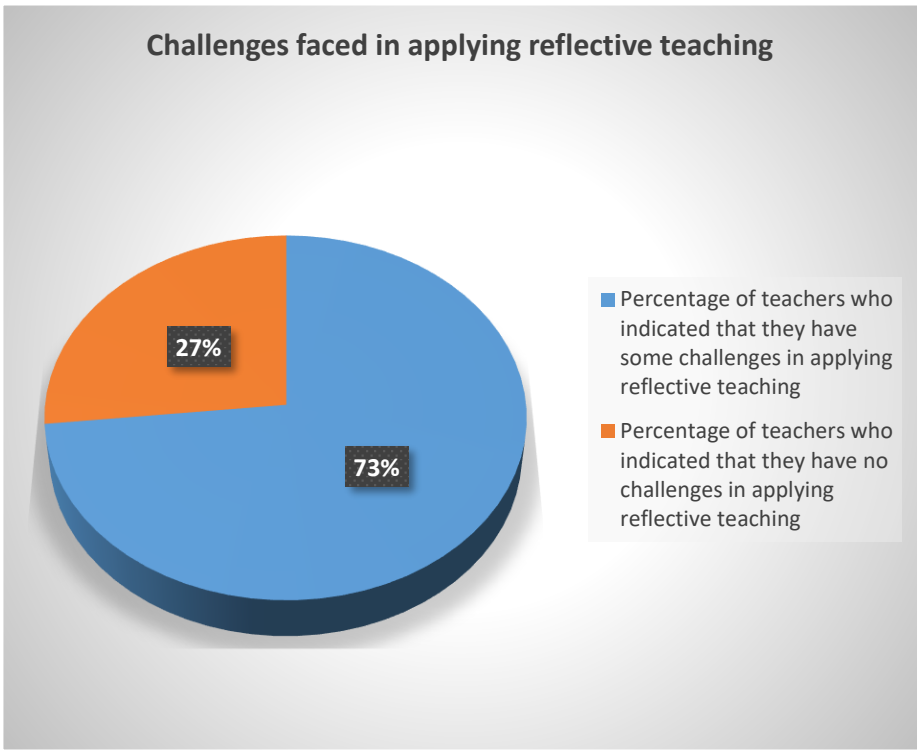
The highest level of reflective teaching is called the critical or dialectical reflection level. As can be seen in Table 4.7, only 2 teachers (13%) indicated that they engaged in reflective teaching at the dialectical or critical level of reflection, this finding relates to the data collected through RTLOC. This is the level where teachers ought to ask critical questions pertaining to the success of learning and teaching in the classroom and beyond. At this level of reflection, the teacher considers all aspects of the preceding levels of reflective teaching (Level 1 and 2) Furthermore, the teacher puts focus on the moral, ethical and social issues associated with their practice.

Question 3 (from RTCOEQ): *What are the challenges that are currently hindering you from effectively conducting reflective teaching?*

Teachers were asked to indicate if there are any challenges that are currently hindering them from effectively conducting reflective teaching. They were further encouraged to explain the challenges if any. Reflective teaching may help to improve learning and teaching that ought to translate to better performance in examinations. However,

applying reflective teaching successfully requires knowledge and skill on how to apply it. As Farrell (2004); Grushka, Hinde-Mcleod & Raynolds (2005) and Babei &Abedinia (2016) suggested, a thorough application of reflective teaching is thought to improve learners' performance in examination results.

Figure 4.1: A pie chart shows the percentages of teachers facing challenges in applying reflective teaching and those without challenges



Some of the challenges listed by teachers in their endeavour to apply reflective teaching included the following (verbatim):

Teacher 1: *Time is limited, I have too many learners to attend to.*

Teacher 2: *It is very difficult to reflect after teaching before marking the learners' work.*

Teacher 3 & 6: *Cited lack of resources as a hindrance to reflective teaching.*

Teacher 4. *In the Zambezi Region, teachers are given minimal number of tasks predetermined by the director, to be done if not you receive dehumanising criticism. Teachers run over basic competencies just to meet the number of tasks that are meaningless, sometimes student copy from each other*.

Teacher 5: *Action research, if the learner (learners' feedback) does not tell the truth*.

Teacher 7: *Large numbers of learners in the class make evaluation of individual leaners difficult and reflection on effectiveness of methods used.*

In the Zambezi Region, consistent poor performance of grade 12 learners in the national examination has been observed for the past seven years. The situation narrated in the Zambezi Region antagonises the application of reflective teaching. Indeed, as can be observed in Figure 4.1, about 73% percent of teachers cited facing challenges in their endeavours to apply reflective teaching. Though a few of the explanations given (such as lack of time to engage in reflections) may be seen as irrelevant to some, reflective teaching requires time and careful consideration of why teaching did not succeed as intended. Too many expectations loaded on teachers could be a restraining factor towards successful engagement in reflective teaching. In many instances teachers' time is structured by external authorities. The scheme of work is prescribed, the time for completion of topics per syllabi is prescribed, examination dates are non-

negotiable, so time becomes a factor. The majority of teachers cited challenges such as lack of knowledge and motivation to undertake reflective teaching. This could also be observed during class visits and in the definition of reflective teaching provided by the teachers during the interview. The definitions portrayed a narrow way of looking at reflective teaching as opposed to the expected actual application of the process.

Data presented in Table 4.5 clearly highlights the challenges faced by teachers in applying reflective teaching as 100% of teachers were unable to identify or relate to some of the methods of applying reflective teaching such as action research, teachers' portfolio and reflective journaling. It was further discovered through lesson observations, Table 4.9, that three out of fifteen or 20% of teachers did not consider stating the objectives of the lesson in the introductory phase of the lesson. It was equally observed that in the development phase of the lesson presentation, 50% of the teachers did not actively engage learners in the lesson through provision of stimulating questions and guided activities that would render active learners' participation in the learning process. Furthermore, the reinforcement phase of the lesson of all teachers was either non-existent or needed more emphasis. It was interesting to observe that in the citation of challenges faced by teachers in applying reflective teaching, none of the teachers cited lack of training in reflective teaching as a major challenge hindering teachers from effectively applying reflective teaching during lessons. This is contrary to what teachers said in question 7, where 50% of the teachers who responded to this question indicated that they were not well trained to carry out reflective teaching successfully.

Question 4 (from RTCOEQ): *In your own opinion, do you think teachers are well trained to apply reflective teaching in the classroom and beyond?*

Table 4.8. Two categories of teachers' responses on training to apply reflective teaching

Answer	Yes	No
Total number of teachers	6	6

Teachers were further requested to support their answer on either of the responses in Table 4.8. Below are the verbatim responses of teachers whose response was categorised as ***"NO"*** to question 4 above.

Teacher 1: *No training is offered to the teachers; every teacher plans their strategies without been given guidance.*

Teacher 3: *Teachers were not taught about this in details. Emphasis need to be put on this.*

Teacher 5: *Teachers are using the methodologies and strategies attained from tertiary but they are not being inducted to reflective teaching*.

Teacher 12: *No, because teachers do not know how to correctly carry out reflective teaching.*

Teacher 13: *It is just reflecting on the lesson preparation paper no training received.*

Teacher 15: *According to my observation, I don't think it is practiced as one's schedule seems to be tight in such a case they do not have time to reflect.*

Below are the verbatim responses of teachers whose response was categorised as ***"YES"*** to question 4 above.

Teacher 2: *Teachers provide a brief review of every lesson to check understanding of the learners*.

Teacher 4: *Teachers are well trained. However, some reflective methods need resources to be achieved. Another point is the education system focus more on administration part than learning and teaching. This reduces the chance of the educators to implement reflective teaching.*

Teacher 6: *Let me say a number of BETD teachers were extensively exposed to this topic in education theory and practice, we had done critical inquiry and action research, these practice are all acts of asking questions on one's practice and collecting information to solve it*.

Teacher 7: *Most of the teachers are professionals, they teach subjects where they were trained.*

Teacher 9: *Most teachers are specialists in their subject area*.

Teacher 10: *This is simply because they are aware of the different stages of a lesson and the importance of corrective feedback to learners*.

The verbatim responses of teachers on whether or not they received training to execute reflective teaching yielded mixed feelings, as 50% of the respondents claimed that they were well trained to carry out reflective teaching, while the other 50% disputed claims of proper training in reflective teaching. Data collected however revealed that teachers

were not well equipped with skills and knowledge to carry out reflective teaching successfully. This was evident in their lack of knowledge on the methods of reflective teaching and how to apply them. Data collected via the three tools (RTCOEQ, RTLOC & RTIS) used for data collection in this study yielded consistent results that portrayed inadequate understanding of reflective teaching by the teachers. A situation that verifies the possible impact that lack of reflective teaching has had on the observed poor performance of learners over the years in that region.

Table 4.9 summarises the observed attributes during the 15 lesson presentations. The key attempts to simplifies understanding of the table. The alphabets in bold: **A**, **B** & **C** of each attribute of a lesson denotes the observed strength of the teacher in a particular attribute as explained at the key. The other numbers under the bold numbers simply indicate the frequency of observation of an attribute in the lessons of the teachers observed.

Table 4.9 (Appendix B): The degree and number of teachers per reflective attribute of the RTLOC.

Key*: **A**=Not observed* *__B__=More emphasis recommended*

__C__=Accomplished very well

Reflective attribute	**A**	**B**	**C**
Organization			
Presented overview of lesson.	1	3	11

Paced lesson appropriately.	0	3	12
Presented topics in logical sequence.	0	8	7
Related today's lesson to previous/future lessons.	1	5	9
Summarized major points of the lesson.	4	6	5
Presentation			
Explained major/minor points with clarity.	0	5	10
Defined unfamiliar terms, concepts, and principles.	0	7	8
Used good examples to clarify points.	1	8	6
Showed all the steps in solutions to homework problems.	1	7	7
Varied explanations for complex or difficult material.	0	11	5
Emphasized important points.	0	3	12
Writes key terms on blackboard or overhead screen.	0	5	10
Integrates materials (examples, cases, simulations) from "real world".	0	10	5
Active, collaborative, and cooperative learning favored over passive learning.	10	4	1
Interaction			
Actively encouraged learners' questions.	1	9	5
Asked questions to monitor learners understanding.	2	9	4
Waited sufficient time for learners to answer questions.	1	4	11
Listened carefully to learners' questions.	7	3	5
Responded appropriately to learners' questions.	6	4	5
Restated questions and answers when necessary.	1	4	10
Demonstrates respect for diversity and requires similar respect in classroom.	0	2	13
Content Knowledge and Relevance			
Presented material at an appropriate level for learners.	1	3	11
Presented material appropriate to the purpose of the course.	0	1	14
Demonstrated command of the subject matter.	0	3	*12*
Reinforcement			
Asked learners to sum up the major learning objectives of the lesson.	5	6	4
Gave a task / homework.	6	0	9

As can be observed in Table 4.9, the five attributes of the lesson presentation that formed the focal point of observation on the RTLOC are: organisation, presentation, interactions, content knowledge and reinforcement. Most of the teachers (11 out of 15) demonstrated good organisation of the lesson presentation as they started off their lessons by previewing the expected learning outcomes of the lesson at the beginning of the lesson. About 12 out of 15 teachers paced their lessons well. However, there was a need for teachers to emphasise summarising the major learning objectives of the lesson at the end of the lesson presentation. Only 5 out of 15 observed teachers successfully summarised the major lesson objective during the observation.

Reflective teaching requires teachers to monitor the learning progress of learners. The fact that only 5 out of 15 teachers considered summarising the major learning objectives suggests that, 10 out of 15 teachers who were observed did not consider checking to see how learners grasped the major learning objectives of the lessons taught.

Under the presentation attribute of the RTLOC, 10 out of 15 teachers successfully emphasised explanations of key concepts of the topic taught, while 5 out of 15 teachers who were observed did not bother to define and explain key concepts during their lesson presentation. These are some of the areas where reflective teachers are expected to critically analyse how content was presented, what needs improvement in the presentation? Furthermore, there was an observed need for active engagement of learners during the lesson presentation through questioning. When teachers ask

question during the presentation of the lesson, it sparks the interest and concentration of learners that in return stimulates active engagement of learners with the topic at hand. About 10 out of 15 teachers did not actively engage learners in their lesson presentation. Despite the reasons such as “new content dictates that the teacher talks more” given by some teachers under the questionnaire, it can be acceptable that learners passively sit in class without taking ownership of their own learning by actively engaging in the process of learning. A need to integrate content to real life challenges was observed. 10 out of 15 teachers did not consider relating the content they taught to practical real life examples in the surrounding environment.

4.3.5 Discussion: Post lesson presentation (from RTLOC)

Below is a summary of the teachers’ responses based on the discussion held after the lesson presentation:

4.3.5.1 The observed major strength of the teachers

It was observed that teachers embraced cross-curricula integration in their lessons. They linked their topics to other subjects. It was further observed that teachers exhibited a good voice projection. Learners could hear the teachers’ instructions loud and clear. Integration of topics across the curriculum is very important in reflective teaching, as the school curriculum has both a horizontal and vertical alignment of content.

Another strength that was observed is that about 10 out of 15 or 65% of teachers involved learners in the lessons. In those classes where learners were actively participating, the teachers conducted assessment for learning / formative assessment which is the building block for all successes in learning and teaching. In general, the following were the observed good attributes of lesson presentation in some classes: good classroom monitoring and management of the classroom, good voice projection, good chalkboard use, clear and simple language used with confidence, subject knowledge, learner involvement, chalkboard skills, clarity of speech, good questioning techniques.

On the other hand, there were some classes visited in which the following negative attributes of lesson presentation were observed: lower level of learners' participation, lower levels of confidence by the teachers, poor classroom management and lack of - clarity in classroom instructions.

4.3.5.2 Suggestions for improving teaching skills or methodology.

After the lessons were observed, the teachers were asked to reflect over the lesson observed and suggest areas they could have handled differently given a second chance. Below are the verbatim and report of the responses of teachers:

Teacher 1: *Active participation of learners in a collaborative way. Let learners work together instead of competing against one another.*

Teacher 2: *Chalk board usage, the teacher need to use the board correctly. At least write the date and topic on the board. Use pictures to bring the message across easily.*

Teacher 3 & 4: Suggested that given a second chance, they could stimulate learners' participation through questioning throughout the lesson.

Teacher 5: *Movement around the class to facilitate time on task and unity of purpose (learning), keep learners focused, allow more time for learners to respond to questions.*

Teacher 6: *Encourage pairing or group work, it helps those who need a bit of help. Summarise every lesson.*

Teacher 9: *Allow learners to work out solutions and simply guide them, instead of-solving problems and simply allow them to copy. Ensure that learners -pay attention to the task by giving them work.*

Teacher 10: *Sustainable use of the chalkboard, stimulation of cooperative learning needs attention, use of smaller groups, not more than five learners in a -group.*

Teacher 14: *Encourage collaborative, pair work, give written activities for record keeping.*

Teacher 15: *The teacher needs to integrate discussions in the class. Encourage learners' participation through questioning during the entire lesson*

period.

In general, teachers' reflection on their lesson presentation seemed to converge to a common point, which is stimulating more active learners' participation through questioning. This ties up with the teachers' responses in RTIS, question 4 in which 8 out of 15 or 53% of teachers indicated that they spoke more than their learners did during the lesson presentation. It was observed that learners were less involved as the teacher did the most talking in the class.

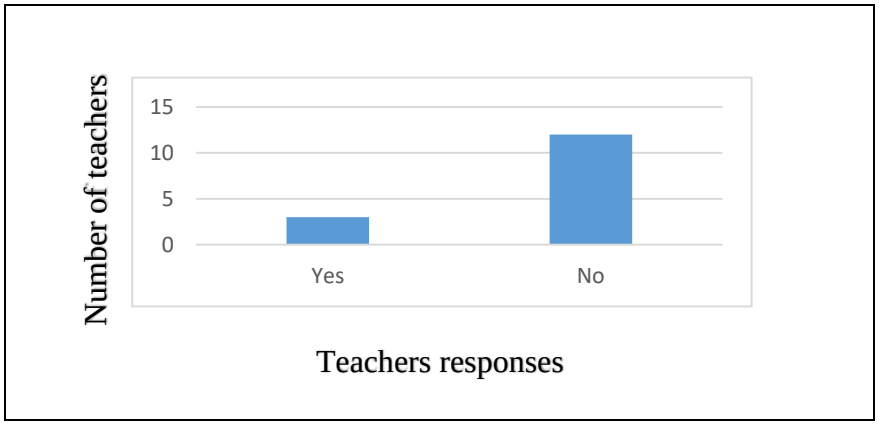
To note: *While visiting schools, 4 out of 15 teachers (during the interviews) asked the researcher "What is reflective teaching". This is a clear indication that teachers may not really be well vested with skills and knowledge in engaging in thorough reflective teaching.*

4.3.6 Observational skills

In order to determine how teachers, gathered information on learning and teaching in their classroom, a series of questions that would arouse teachers' responses were asked.

Question 1.1 (from Appendix C): *Have you ever done a video- and or audio-recording, writing, drawing, and photography of your classroom teaching? If yes, what benefits do you see from these practices or tools?*

Figure 4.2 A bar graph showing teacher responses to recording of classroom teaching



Below are some of the verbatim responses of teachers to the question: *Have you ever done a video- and or audio-recording, writing, drawing, and photograph of your classroom teaching? If yes, what benefits do you see from these practices or tools*?

Teacher 1: *I usually use a lesson plan for reflections but much better done after marking learners work.*

Teacher 2: *Video recording, it helps to see / visualise your weakness and learners' participation.*

Teacher 3: *Yes, Video, readily available and can be used for long. Helps you to reflect and improve teaching.*

Teacher 4: *Not really anything but the preparation file and class observation*.

Teacher 5: *No I have not used any, though it sounds very interesting.*

Teacher 6: *No tool used, due to lack of understanding on reflective teaching. I am of the impression that you visualise how the lesson went. You look at*

learner's responses and based on that you think about the methods for the next lesson.

Teacher 7: *Yes, a colleague to observe and help you to identify shortcomings in the lesson, e.g. terminology pronunciation, pace, tone, chalkboard skill. Inclusion of learners in class, gender issues*.

Teacher 9: *Lesson plan used to do reflections to see if what was planned was what took place. Simple observation as you teach gives a good view of how learners are following.*

Teacher 12, 13,14 & 15: *Responded that they have never done any video or audio recording of their lesson presentation.*

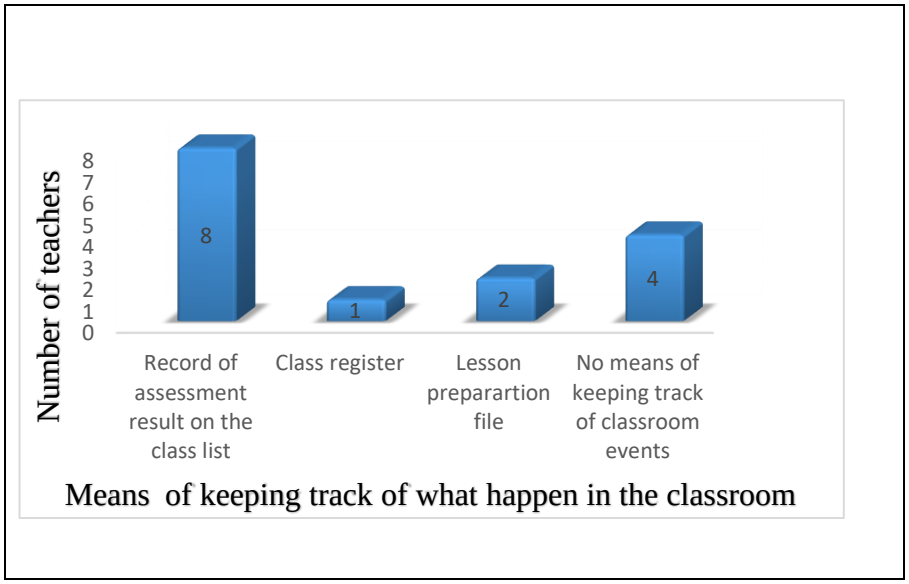
Findings of the study via (RTIS) one of the tools used for reflective teaching yielded results similar to that of RTCOEQ and RTLOC. As can be seen in the verbatim responses of teachers above, other tools considered to be ideal for conducting self-reflective teaching were not used by teachers in the sample schools. Teachers predominantly referred to lesson planning records and results of assessment activities as their regular form of record keeping for classroom activities. Lesson planning and records of assessment activities don't bear much information about the actual circumstances in the classroom. Effective reflective teaching is highly dependent on the actual circumstance transpiring in the classroom. Therefore, there is a need for teachers to use tools that would accurately capture classroom circumstance during lesson presentation in order to have authentic reflection of the lesson.

Question 1.3 (from RTIS): *How else do you keep track of what goes on in your class?*

The collected data revealed that in attempting to keep track of what transpires in their classrooms, most teachers kept records mainly by using class lists for recording assessment results, followed by class registers and lastly by way of lesson preparation files. It is equally important to note that a significant number of teachers indicated that they did not have any means of keeping track of what transpire in their classrooms. Keeping a record of scores of learners in the different assessment activities and class register records is important, but these records do not give an overview of factors that may have led the learners scoring the points observed in their assessment activities.

It is therefore important for teachers to consider using media that can give a good view of all classroom interaction to enable a fair reflection of the teaching / learning session that transpires in a class. Lack of appropriate records of classroom interactions is tantamount to poor or inaccurate reflective teaching. Using a video recorder during a lesson could provide a teacher with a real time view of the teacher's postures, voice projection and learners engagement during the review of a lesson presented. It could further expose whether or not a teacher engaged reflection *in* action which was less observed in most classes visited.

Figure 4.3 A bar graph shows means of keeping track of what happen in the classroom



Below are the selected verbatim responses provided when teachers were asked to indicate how they kept track of activities in their classes:

Teacher 1: C*lass lists (where records of performance of learners is kept).*

Teacher 2*: Through learners' work during teaching, a teacher can tell on who is not paying attention.*

Teacher 3: *I keep track through the registers and the preparation file.*

Teacher 4, 6, 8, 11 & 14: *Indicated that they had no tools for keeping track of classroom activities.*

Teacher 12: *Through recording test marks and encourage learners to do corrections for all work missed. A one to one discussion to encourage them to improve.*

Teacher 13: *Class list (where records of performance of learners is kept.*

Keeping accurate records of classroom interactions during learning and teaching session is the foundation of effective reflective teaching. Teacher ought to keep good records of all classroom activities in order to be able to carry out a thorough audit of learning and teaching interactions, especially for identification of deficiencies in teaching.

Looking at the verbatim responses of teacher, one can most certainly tell that more information necessary for quality reflections is lost if teachers only keep records of classroom learning and teaching through learners' work (assessment activities), class registers, class lists. All the records mentioned here have less to do with the much needed teaching / learning environment information upon which teachers need to base their analysis and evaluation for effective learning and teaching. Assessment of the quality learning and teaching would therefore require records that portrays an image or picture from which the teacher can decide to keep or explore alternative methods or teaching learning aids, gestures, voice projection and general class administration that would better the learning / teaching environment. This is in line with Ferwana (2006) who stated that, the reflective process depends completely on descriptive data collected by teachers about a certain problem the teacher focuses on. So, collected data are the core of the reflective process, as without data teachers can do nothing or find nothing to deal with.

Question 1.4 (from RTIS): *Have you ever assessed your teaching style to check relevancy to learners in your class? Explain how you did this.*

The analysis of the narratives of the teachers' responses to question 1.4 above indicated that 14 out of 15 or 93% of teachers who participated in the study assessed their teaching style. However, it was equally observed in the teachers' narrations of how they assessed their teaching style that they lacked expertise, skills and knowledge on implementing a successful reflective teaching exercise. It appeared that teachers were more familiar with *reflection on action* and too oblivious about *reflection in action*, as they would wait for assessment results as a measure of the quality of learning and teaching that transpired in their classrooms. In response to the question on whether or not teachers have ever assessed their teaching style, below are their verbatim responses:

Teacher 1: *Yes, done after an assessment, after seeing how learners performed.*

Teacher 2: *Yes, certain times when I think that learners know the content but they do not know, so I relate the lesson to the learners understanding.*

Teacher 3: *Yes, after group work, I give them flash cards and encourage learners to reflect on the lesson.*

Teacher 4: *Yes, I ask myself, does my methods reach out to the learners? Especially if objectives are not met, there exist a need to review the methodology.*

Teacher 5: *I simply follow the teacher's guide provided by the subject, it guides on how to handle the lesson and resources.*

Teacher 7: *Every time I present a task and see how learners perform. If not so good, I ask myself are my methods really working, do I know how to teach?* Sometimes I use code switching to the message home"

Teacher 8: *Yes, through methods in the system in form of formative assessment. e.g. topic tasks, tests, give you an indication of learners' progress. Summative assessment informs progress at the end of the day usually after a long period.*

Teacher 10: *Yes, through experience. I have realised that when I use my style of teaching it helps them to learn better. When I change it, it brings hick ups.*

Teacher 11: *Yes, I use a variety of methods e.g. group work, individual work, pairs for comparisons with peers. It helps learners to share ideas.*

Teacher 12: *Yes, because as a teacher you always try to use a method best understood by learners. Checking understanding is done through assessment.*

Teacher 14: *Yes, done after an assessment to see how learners perform.*

Teacher 15: *Not all. Once in a while, someone(HOD) assess my class and feedback is provided through lesson observation reports. Constructive criticism.*

There are multiples of intelligence in one classroom. A teacher who seeks to appeal to the diverse intelligences in his / her class ought to assess his / her teaching style and possibly vary pedagogical methodologies applied (Ferwana, 2006). Teachers who participated in this study seemingly recognised the rational for assessing and possibly

changing teaching methodologies, particularly when learners could not follow or grasp the content taught using a particular method. The majority, 14 out of 15 teachers indicated flexibility in assessing their teaching methods and adapting teaching to the preferred method of learning (preferred by learners).

It is however worth noting that though teachers theorised flexibility in assessing their teaching method during lesson presentation and possibly changing these methods (in the interview), no change of teaching method was altered during lesson observations for all 15 teachers despite the observed challenges observed in learners struggling to master content in some observed lessons. This situation depicts the gap that exist between theory and pragmatism of the learning and teaching dynamics at the observed schools. If teachers constantly assess the methodologies used in teaching, the teaching learning resources and media used, the content taught and the engagement of learners in the lesson, positive achievement of learners in national examination are inevitable (Hammersley-Fletcher & Osmond, 2005; Ferwana, 2006 and Mirzaei & Kashefic, 2013).

Question 1 (from Appendix C, section B: *In your understanding, what is reflective teaching*? The following were their verbatim responses:

It is important to note that of the 1 out of the 5 principals interviewed asked “What is reflective teaching?” a question that clearly shows that it is not only teachers who are not so familiar with reflective teaching but the principals too.

Principal 1: *Looking back at how we teach and correcting our mistakes.*

Principal 2: *Teaching where a teacher sits back and ask questions about the effectiveness of teaching, e.g. through assessment tasks and books.*

Principal 3: *You look on the aspect of progress made by learners, after grade 12 do learners go to the streets or do they go to UNAM? This can be used to measure the quality of our education. In class after a lesson, you can ask questions to see if competencies were achieved, if you ask questions and no answers are provided it means the lesson needs to be retaught*.

Principal 4: *Refers to the kind of teaching based on learners' background, like a recap.*

Principal 5: *Involves two or three things; to see whether learners mastered the content taught, to also check if what was taught is in line with the syllabi and finally to see if the teacher has subject content, methods used, assessment done for consolidation, to see how successful the lesson was. Done through forms compiled by the school. Discussions held to give feedback on success or failure of the lesson.*

Principals as heads of schools are expected to lead the school personnel in all professional activities at the school. As can be observed in the verbatim responses of the school principals, reflective teaching seems to be less understood even by the school principals. This is exemplified in one of the principal's response who defined reflective teaching as "it *refers to the kind of teaching based on learners' background,*

like a recap". When this principal was probed to clarify what that meant, the principal went on to say that it means teaching learners in relation to their achievement in their previous grade. As can also be observed in the verbatim responses of the other four principals, it is clear that principals also require skills and knowledge in reflective teaching in order to help facilitate improved performance of learners through effective application of reflective teaching. As Spalding (2020) stated, professional leadership is a key factor in bringing about change. Principals who tend to be proactive, participate and share leadership, and have real knowledge of what goes on in the classroom.

Question 4 (from Appendix A): *Do you think teachers are well trained to carry out reflective teaching successfully?*

A summary of data presented in Table 4.8 indicated that 50% of the 12 teachers who responded to the question indicated that they were not well trained to carry out reflective teaching. Teachers claimed lack off or insufficient training provided to them during teacher training programs. Teachers further stressed that tertiary training programmes for teachers emphasised pedagogy, andragogy and content above reflective teaching. They felt that placing equitable emphasis on reflective teaching would allow them to effectively carry out reflective teaching.

It was further observed that indeed teachers lacked adequate training on the understanding and application of reflective teaching. This was evident in the explanations on how teachers used methods they claimed to be following in applying

reflective teaching. It was also verified in that a number of teachers went on to teach the lesson without introducing the lesson objectives. Such is characteristic of some un-reflective teachers as (Palding, 2020) concluded. This further proves that lack of adequate training on the understanding and application of reflective teaching is a formidable factor contributing to the observed constant poor performance of learners in the Zambezi Region in national examinations. Reflective teaching is believed to be the teachers' tool to help improve classroom interaction and ultimately lead to better performance of learners as Bababei & Abednia (2016) and Spalding (2020) argued. Workers can hone their reflective skills in order to critically appraise what has been experienced via practice. This in turn enables them to improve ongoing practice, by using the information and knowledge they are gaining from experience (Helyer, 2015).

Question 6 (from Appendix A): *In your opinion, are there any differences between experienced and inexperienced teachers in terms of applying reflective teaching? Which of the two groups of teachers is better off and why?*

Table 4.10 The responses of teachers on whether or not there is a difference between experience and inexperienced teachers in applying reflective teaching.

Is there a difference between experience and inexperienced teachers?		
Response	Yes	No
Number of teachers	5	10

Verbatim responses from those who indicated that experienced teachers are better off:

Teacher 1: *They might have failed and have learned from their failure*.

Teacher 3: *Because these teachers have a lot of insight in the teaching profession.*

Teachers 4: *Obvious because research has proved that experience is a good teacher*.

Teacher 5: *They have tried numerous strategies in their teaching*.

Teacher 7: *Because they always make criticism of their teaching*.

Teacher 14: *They can practice reflective teaching as part of the strategies to improve the results*.

Verbatim responses of those who indicated that inexperienced teachers are better off:

Teacher 2: *They have some methodology on which they can reflect on*.

A summary of the responses of teachers who indicated that neither experienced nor inexperienced teachers are better off:

Data indicated a third category which was originally not catered for. There was a group of teachers who felt that there was no difference between experienced and inexperienced teachers in relation to reflective teaching. About 8 out of 15 teachers fell into this category.

Data revealed that 6 out 15 teachers who responded to question, 6 (Appendix A) felt that experienced teachers were more capable of effectively applying reflective teaching than the inexperienced ones. Only one (1) teacher felt that the inexperienced teachers were more effective at applying reflective teaching than the experienced teachers. The remaining 8 teachers felt that experience was not a factor in the effectiveness of a teacher to apply reflective teaching. In summary, observed trends aligned to the last group's response, in that there was no observed evidence to support the argument that the more teaching experience a teacher had, the more effective that teacher applied reflective teaching. This situation further strengthens the argument that lack of proper reflective teaching is one of the causes of poor performance of learners from the Zambezi Region in the NSSCO examinations.

4.4 THE VALUE ATTACHED BY TEACHERS TO APPLYING REFLECTIVE TEACHING IN ZAMBEZI REGION.

In order to establish the value attached to reflective teaching, teachers were asked questions that would yield responses that can be used to establish the value attached to reflective teaching and learners' academic performance.

4.4.1 The importance of reflective teaching

Question 5 (from RTCOEQ): *In your own views, how do you think reflective teaching could help improve grade 12 learners' performance in the NSCCO examinations?*

It is important to note that all teachers were in agreement that reflective teaching could help learners improve their performance in the NSSCO. There seems to be a universal agreement that reflective teaching has the potential to improve the performance of learners in the NSSCO examination. This mainly because the findings of the study revealed that 15 out of 15 teachers confirmed that reflective teaching has the potential to improve learners' performance.

When teachers were asked to explain why they thought reflective teaching was important to improve learners' performance, below were the selected verbatim explanations given by the teachers to question 8 above:

Teacher 1: *Sometimes learners fail not because they do not know but because they do not understand their teachers when teaching. So reflective teaching could really help.*

Teacher 2: *Both teachers and learners will know if there is progress in learning and teaching.*

Teacher 3*: Will help teachers to work on their weakness.*

Teacher 4: *Because it focuses on attaining all lesson objectives, if learners acquire all lesson objectives then it means learning is taking place and they will improve performance in exams.*

Teacher 5: *Because it may give an insight on how to effectively teach and improve the results.*

Teacher 6: *Confirms learners understanding of the subject*.

Teacher 7: *In every situation reflective mind helps to remedy any situation. Since reflective teaching has to do with approach, it can be used to rectify misunderstanding of the first approach if learners did not master the content of the first approach.*

Teacher 8*: Given that, teachers are now pressured into completing a series of tasks and home work. Currently there is no time for compensatory teaching due to the fear that time will be lost and won't catch up on dates.*

Teacher 9: *Only if teachers receive a good training, because this is one of the aspects which can help teaching for effective learning and teaching.*

Teacher 10: *Because both teachers and learners they could look at the strength and weakness observed during the class.*

Teacher 11: *Because it will give the teacher time to think effectively and improve areas of weakness.*

Teacher 12: *It provides continuous improvements on the most effective methods.*

Teacher 13: *It gives a holistic picture about the learning and teaching situation and points out weaknesses and strength*.

The verbatim explanations of teachers on why they thought reflective teaching was important to improve learners' performance clearly indicates that teachers had some sort of understanding about the potential role that effective reflective teaching play in improving learners' academic performance.

The value attached to applying reflective teaching in the sample schools (Zambezi Region) was interrogated by seeking teachers' understanding of the following sub-tittles: relationship between reflective teaching and learners' performance; how reflective teaching is encouraged at their schools; reflective teaching reinforcement at the case schools and teacher training in reflective teaching.

Question 2: *How does reflective teaching affect learners' performance?*

From the perspective of reflective teaching, understanding the meaning of reflective teaching alone may not be enough to account for the performance of learners in the NSSCO results. It is against this background that the study further investigated the value attached to the application of reflective teaching in the Zambezi Region. In an attempt to reveal value attached to applying reflective teaching by teachers in the Zambezi Region, the following questions were asked: Can reflective teaching improve learners' performance? The following are the selected verbatim responses of the teachers to the question 2 above.

Teacher 1: *As a teacher reflects it may give a teacher some new ideas on how to make the learners understand. When learners understand content, better performance is expected.*

Teacher 2: *This may include feedback on assessment. Feedback on assessment has a correctional value*.

Teacher 3: *It affects learners' performance in the sense that it may lead changing teaching methodologies to the benefit of learners.*

Teacher 4: *Reflective practice informs the teacher of her success and shortcoming. If the performance is poor, new teaching strategies are employed to improve results.*

Teacher 5: *If learners perform well in tests or examination, that is the indication that they grasped something from teaching*

Teacher 6: *When it is found out that the learners did not understand the lesson, give the room to the teacher to revise the lesson*.

Teacher 7: *When one reflects on a lesson by giving them work at the end and emphasis done some revision work before the lesson will help to know the learners' performance*.

Teacher 8: *Because by thinking over the lesson presented, it gives the teacher a chance to rectify mistakes done during the previous lesson*. *This action can lead to improved learners' performance.*

Teacher 9: *Reflecting on learners' achievement will induce the need to improve the methods used.*

Teacher 10: *Learners' performance gives a true picture about the lesson, whether the objectives were achieved or not*. *This can be realised through reflective teaching.*

The verbatim responses of teachers indicated that all teachers concurred that reflective teaching plays a major role in improving the academic performance of learners. As can be observed in the verbatim responses of the teachers, all teachers who participated in

this study recognised reflective teaching as a value adding process to quality learning and teaching for improved results.

The findings of this study revealed that 15 out of 15 teachers recognised reflective teaching as a vital exercise that leads to improved learners' academic performance. In summary, the teachers agreed that without reflection, no positive achievements are likely to be experienced in the learning and teaching process. One teacher stated: "*If no reflections are done, no change will come because change comes when problems are identified"*. It is however important to highlight that superficial reflective teaching may equally produce results similar to a situation where no reflective teaching is exercised at all. A worthwhile reflective teaching exercise requires a comprehensive and adhesive consideration of multiple attributes to efficient learning and teaching. This is in line with Lai (2011) who argued that reflective teaching includes consideration of knowledge about oneself as a teacher/learner and the factors that impact performance, knowledge about strategies and knowledge about when and why to use a particular strategy.

Though it was observed that all participant teachers acknowledged reflective teaching as a critical teacher's tool for improved classroom learning and teaching (see Figure 4.1), they were however not proficient with the types of reflection that exists. This implies that teachers would be limited in the execution of reflective teaching, a scenario that possibly explains the stagnation in poor performance of learners from the Zambezi Region in the national NSSCO examination for the last 6 / 7 years.

4.4.2 Relationship between reflective teaching and learner's performance

Using reflection can improve teaching, enhance the delivery of lessons, interventions in the classroom and finally improve learners' academic performance (Barnett & O'Mahoney, 2006; Finlay, 2008; Zwozdiak-Myers, 2009; Bolton, 2010 and Fatemipour, 2012). They further argued that through reflective teaching, teachers will be able to identify how to improve their professional activity in order to improve the quality of learners' learning.

The findings of this study collected from the teachers through RTCOES, RTLOC & RTIS (such as reflective teaching could help teachers to discover their weakness and seek remedy for such weaknesses), shared the same sentiments as the literature consulted on the potential of reflective teaching to improving learners' results. Teachers indicated that reflective teaching could point out the deficiencies of learning and teaching. Once the deficiencies are exposed, it would make it easier to seek remedial action. This is in line with Ferwana (2006) who argued that when teachers are able to identify mistakes (through reflective teaching) in learning and teaching, they stand a better chance to successfully guide the learners to better academic performance.

4.4.3 How reflective teaching is encouraged at the selected schools in the Zambezi Region

As can be seen in Table 4.16, section 4.4.5 data collected clearly revealed that reflective teaching is not actively encouraged in schools. This is deduced from the fact

that thirteen out of the fifteen teachers indicated that reflective teaching was not actively encouraged at their schools. The thirteen teachers who indicated that reflective teaching was not being actively encouraged, collectively seemed to suggest that there is no formal communication from school management stressing the need for reflective teaching. A follow up with the school principals on the availability of a policy relating to implementation of reflective teaching in schools proved futile. *"Though it appears in the lesson, nobody monitors whether it happens or not".* Teachers further indicated that those who engaged in reflective teaching did so out of goodwill. This is most likely to be the truth as lack of or lower levels of understanding of reflective teaching were observed.

As for those who indicated that reflective teaching was encouraged, only two out of fifteen had a section particularly reserved for reflections. It is a situation that further depicts the need for a broader understanding of reflective teaching at the case schools of the Zambezi Region. This is mainly because teachers thought reflective teaching only happens after lesson presentation i.e. reflection *on* action as Schön (1983) indicated. It is however important to note that reflection *in* action is more diagnostic and formative in nature. In its nature, it seeks to diagnose and solve the problem during the progression of the learning and teaching phase.

4.4.4 How reflective teaching is reinforced at the selected schools in the Zambezi Region

From the analysis of the collected data, it was concluded that the most prominent tools used to reinforce reflective teaching at the consulted schools is a lesson plan. Lesson planning forms had a section for reflections which constituted the predominant form of reinforcing reflective teaching. Though all principals indicated that they usually persuaded teachers to engage in reflective teaching, it was rather ironic to observe that some principals were equally uncertain about the concept and process of reflective teaching. It was observed that not all school principals were familiar with reflective teaching as one principal responded: *"Yes, encouraged in the sense that, right at the admission of learners we place them in the fields based on grade 10 results. It helps to place them in the right fields".* Quite clearly, there was no relationship between the principal's response to the question asked. It may not be expected that such a principal could by any chance encourage teachers to engage in reflective teaching as the response clearly shows his distance from knowing much about reflective teaching.

Question 7 (from RTCOEQ): *Briefly explain how you think classroom assessment can help you to improve your teaching.*

Most of the participant indicated that classroom assessment can help to improve their teaching because it is one of the strategies of getting feedback from learners about the learning and teaching progress.

They went on to explain (verbatim) as follow:

> Teacher 1, 2, 10 & 14: *indicated that classroom assessment helps to know the area that needs improvement*.

> Teacher 3,4 & 5: *Assessment gives us feedback on the level of achievement of our learners. We are also informed to proceed or reteach a certain topic.*
>
> Teacher 6: *Misconceptions are made known.*
>
> Teacher 7: *By using formative assessment because it will help you to reflect back on your teaching.*
>
> Teacher 8: *They still learn so, they are all areas to make sure they do well in their lesson presentation.*
>
> Teacher 9: *The assessment can help me because I will start to practice reflective teaching.*
>
> Teacher 11: *It can direct me as a teacher as to how I should reflect on my lessons.*

As can be observed in the teachers' verbatim responses, classroom assessment is considered very important in the teachers' endeavour to bring about positive change in teaching. The common argument for all respondents is that "*when assessment is administered it provides vital feedback to the teacher on the success of learning and teaching*". They indicated that assessment of learners gives them an overview of learners' content comprehension and ultimate academic performance. Truthful as this maybe, it is very important for teachers to ensure alignment of the standards of

assessment given in class to the national standards of assessment. Discrepancies in the standards of assessment may yield false hopes throughout the year and eventually produce poor results in the NSSCO examination. As indicated earlier, relying on assessment results for reflecting on lessons is not effect because it would mean that teachers take more time before reflecting on the quality of teaching and learning. This is mainly because tests and other forms of formal assessments are a seldom occurrence.

Question 8 (from RTIS): *How do you use the results obtained from the assessment activities in your teaching?* This question was included because assessment results naturally trigger reflection by teachers.

Teacher 1: *I use the results to show me whether learners understood my lesson and where to improve.*

Teacher 2: *I use them to improve my teaching and have a better approach to teaching.*

Teacher 3*: Consider more time into revising and improving the methods I used all the time.*

Teacher 4: *By applying reflective teaching to help me plan effectively and aid identify my areas of weakness.*

Teacher 5: *They will help to improve how I approach the lesson.*

Teacher 6: *You use results from assessment to evaluate your learning and teaching in that particular topic or lesson.*

Teacher 7: *Weigh up strength and weakness of my learners. Misconceptions are cleared. Draw up compensatory teaching plan"*

> Teacher 9*: Say for example if learners did not perform well in the test, this gives the information to the teacher to reflect on ended lessons that learners never mastered the objectives of the lesson.*
>
> Teacher 11: *Motivate learners to work towards a certain target*.
>
> Teacher 14: *The results help to know the weaknesses and areas of strength.*

Generally, teachers indicated that they relied on the assessment results for further actions in learning and teaching. Having to decide on what the teachers need to do in the classroom only after assessment activities are marked can have a negative effect on the quality of learning and teaching. This is mainly because, for as long as the activities remain unmarked the status quo of learning and teaching remain. This would equally imply that teachers who do not give assessment activities will totally be devoid of remedial action as they would have no basis for rethinking about the quality of learning and teaching taking place in their classrooms.

Such, is uncharacteristic of a reflective teacher as Zeichner and Liston (1996) and Spalding (2020) argued that being a reflective teacher means that you keep an open mind about content, methods, and procedures used in your classroom. You can constantly re-evaluate their worth in relation to the learners currently enrolled and to the circumstances. You not only ask why things are the way they are, but also how they can be made better. Results are only likely to change if teachers start engaging in effective reflective teaching.

Question 9 (from RTCOEQ): *When teachers were asked what they did when they identified their personal weaknesses in the teaching profession, they had the following to say (verbatim):*

Teacher 1,3 & 4: *indicated that they would work towards improving their weaknesses.*

Teacher 2: *Visit other schools and see how they do it.*

Teacher 5: *Be honest and work on your weaknesses.*

Teacher 6: *Find the source or contributor to such weakness*.

Teacher 7: *Try to find out other strategies to improve e.g. maybe ask your teacher friends to help you how to tackle the problem.*

Teacher 8: *You work on it by improving on it.*

Teacher 9: *I sit and think over and find a way to improve that part in some cases I can still seek assistance from colleagues*.

Teacher 10: *I am not shy to seek help from my peers*.

Teacher 11: *I work hard to correct them*.

Teacher 12: *I work out on action to address my weakness*.

As can be read in the verbatim responses of teachers, they all expressed willingness to engage correctional measures if they identified weaknesses in their teaching / learning activities. It is therefore very important that teachers should be well oriented in seeking to discover self-weakness in teaching in order to have a fair chance of taking a deliberate action in order to remedy or resolve the weakness. Reflective teaching is

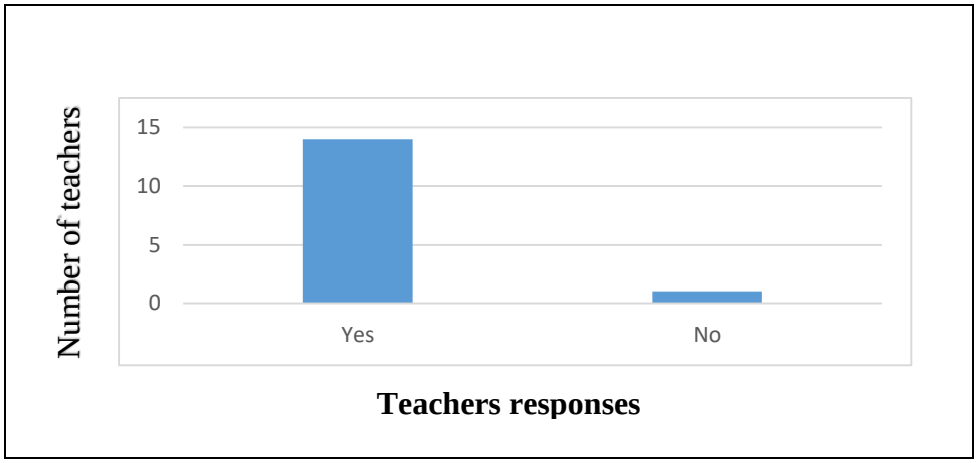
one of the recommended teachers' tools for introspection that aims to improve the quality of learning and teaching in the classroom.

As revealed by the findings collected through RTCOEQ, RTLOC & RTIS, teachers require training in the reflective teaching so that they can be able to effectively implement it in their daily teaching. Effective implementation of reflective teaching would lead to an improved teaching learning environment in which the teacher is confident to teach and the learner is eager to actively discover new skills and knowledge under the auspice of the reflective teacher. This is in line with Larrivee (2000, p.293) who argued that: "Unless teachers develop the practice of reflection, they stay trapped in unexamined judgments, interpretations, assumptions, and expectations". It can therefore be concluded that unless interventions are put in place to equip teachers with the skills and knowledge in reflective teaching, we are less likely to see a positive change in the academic performance of grade 11 / 12 learners from the Zambezi Region.

Question 2 (from RTIS): *Do you think it is important to record your classroom teaching? Explain.*

It is a requirement for each and every teacher to have a record of all teaching / learning activities that transpired in class. Even though this is a requirement for all teachers in Namibia, it was discovered that 1 out 15 or 7% of the observed teachers despised recording lesson plans as they thought it was not important for improved teaching.

Figure 4.4 A bar chart shows teaches responses to the question: Do you think it is important to record your classroom teaching?



As can be distinctively observed in Figure 4.4, fourteen out of fifteen or 93% of teachers were in agreement that recording classroom teaching is important. However, 1 out of 15 or 7% of the observed teachers antagonised the importance of recording classroom teaching. The explanations of those who agreed that lesson plan recording was important converged to the following: For a track record of activities covered; for good transition between a new teacher and a former teacher and for planning purposes.

Question 5: *What would you say is the effect of reflective teaching on the performance of learners?*

In general teachers recognised that reflective teaching bears the potential to improve classroom learning and teaching, which in turn amounts to betterment of assessment results.

Below are some of the teachers' verbatim responses to question 5 above:

Teacher 1: *It is very important to identify self-strength and weakness. Once the weaknesses are identified, they can be resolved and this could lead to improved learners' performance.*

Teacher 2: *There is a link, as you reflect you come up with new ways to teach. When learners understand, there will be positive impact on performance*.

Teacher 3: *Yes, reflective teaching will inform you about the progress in teaching and it will help you to know if you need to repeat a lesson or not and it will measure performance*.

Teacher 4: *Yes, reflection helps to identify the weaknesses of the presentation and improved presentation leads to improvement in learning and performance*.

Teacher 5: *Yes, it helps to improve learning through identification of those who mastered activities through participation in class*.

Teacher 6: *There is, through looking back at one's practice you see strength, that gives you a good chance to improve on weaknesses so that you can better learners' performance.*

Teacher 7 - 11: *Indicated that it has a positive effect on learners' performance. When a teacher picks up misconceptions after teaching, the teacher can remedy and help the learners, especially after assessment.*

> Teacher 12: *Reflective teaching has no effect at all.*
>
> Teacher 13: *It really helps to point out weaknesses and that helps to seek remedy.*
>
> Teacher 14 & 15: *Believed that learners do not perform well because of the absence of reflective teaching in most schools. I strongly believe it would positively improve learners' performance if applied correctly.*

Throughout the centuries many educators have argued that teachers need to be more reflective about their work. The argument is often made that schools and society are constantly changing and that teachers must be reflective in order to cope effectively with changing circumstances (Grant & Zeichner, 1984). These sentiments are shared by recent researchers such as Bailey (2012) and Spalding (2020) who consider reflective teaching as teachers' tool for professional growth and development. Grant and Zeichner (1984) further argued that by uncritically accepting what is customary and by engaging in fixed and patterned behaviours, teachers make it more unlikely that they will be able to change and grow as situations inevitably change. Furthermore, it is commonly accepted that no teacher education program, whatever its focus, can prepare teachers to work effectively in all kinds of classroom settings. Therefore, it becomes important for teachers to be reflective in order for them to intelligently apply the knowledge and skills gained in formal preparation for teaching to situations that may be very different from those experienced during your training (Grant & Zeichner, 1984).

As can be observed in the verbatim responses of teachers to question 5, 14 out of 15 teachers are in agreement that reflective teaching has the potential to improve classroom learning and teaching. Improved classroom quality of learning and teaching leads to improved performance of learners in examinations. Teacher 14 and 15 clearly stated "*Learners do not perform well because of the absence of reflective teaching in most schools. I strongly believe it would positively improve learners' performance if applied correctly".* This is in line with Grant and Zeichner (1984) who stated that the process of teaching is not only to teach learners the content and materials, but to also always be continuously learning from own experiences, and then to be able to reflectively change the way they normally do things. Furthermore, this is consistent with the findings of the studies undertaken by Robichaux & Guarino (2012) and Bababei & Abednia (2016) that concluded that reflective teaching is an imperative to improved learners' academic performance.

Question 1.5 (from RTIS): *In the assessment of your teaching (self-assessment), which one of the following attributes of teaching are assessed and explain why?*

Table 4.11 The number of teachers who assessed particular attributes of their teaching in the Zambezi Region

Attribute of teaching	**No. of Teachers**
Catch and focus	5
Statement of learning objectives	3
Teaching method (s)	3
Classroom management	8
Teaching / learning resources	5
Learners' engagement	7
Closure of the lesson	6

As can be observed in Table 4.11, teachers indicated that they assessed certain attributes of their lesson presentation for the improvement of learning and teaching. It is important to note that table 4.11 shows that classroom management was cited the most frequent (eight out of fifteen or 53%) as an attribute that received teachers' attention in the review of the lesson presentation. On the contrary, statement of lesson objectives and teaching methods received the least attention (three out of fifteen or 20% each) in the process of lesson presentation review.

Below are the selected verbatim teachers' reasons for focussing on a particular attribute of learning and teaching:

Catch and focus

Teacher 1: *I assess the activities used to start a lessons because it is important to catch the attention of learners from the word go.*

Teacher 2: *Catch and focus keeps all learners attentive in class from start. I use the Pose, Pause and Pounce (PPP) questioning technique. Using the PPP technique, learners do not have to raise their hands when the question is posed as the teacher holds the prerogative to pounce on any of the learners for the answer.*

Teacher 3: *It keeps learners focussed and indicates the important competencies*.

Teacher 5: *All learners need to be loved, they all should feel loved, through eye contact.*

Teacher 6: *To ensure that learners are attentive and to help with pre-knowledge.*

Statement of learning objectives

Teacher 1: *Statement of competencies always included for the lesson to focus on key competencies required.*

Teacher 2: *Guides learners' attention, that is what learners should master.*

Teacher 5: *So that learners are made aware of where they are expected to learn.*

Teaching method (s)

Teacher 1: *The methods drive to the understanding of learners. E.g. if there is no introduction, the method would humper learners understanding.*

Teacher: *Teaching methods, obtained from the subject guide.*

Teacher 3: *To link the topic to the right method.*

Classroom management

Teacher 2: *Classroom management, ensuring that all are on track by encouraging them through questions.*

Teacher 5: *To see whether your class is under control, no disruptive behaviour is condoned to avoid disturbance for the whole class.*

Teacher 6: *If the class is not well managed, no learning can take place.*

Teacher 7: *To ensure that all are involved.*

Teacher 10: *Provides the foundation for successful learning.*

Teacher15: *Helps to avoid disturbances in learning and teaching*.

Teaching / learning resources

Teacher 1: *Resources also used to explain thoroughly.*

Teacher 3: *To simplify the lesson for learners to understand.*

Teacher 4: *Gives you an approach, thinking level of learners learning challenges used to be reconciled with challenges observed in the class.*

Teacher 7: *Helps to bring reality to the class. The teacher needs to be innovative teach learners to think outside the box.*

Teacher 9: *Learning resources should be accessible to ensure that learners can get information even in the absence of the teacher.*

Learners' engagement

Teacher 1: *Learners need to be relatively involved, ask them to prepare teaching resources e.g. posters and participate in the lesson. Collection and presentation of collected data*.

Teacher 2: *The teacher engages learners in activities to ensure learning. If learners are not engaged, it means the methods need review.*

Teacher 4: *Because it is learners who should master competencies. So it is important to engage them through questions*.

Teacher 5: *Learners need to be engaged to determine misconceptions and address them.*

Teacher 7: *Important to avoid boredom, push learners to take part in learning. They are the focal point of learning.*

Teacher 8: *Important to see whether learners are with you in the lesson. It also helps you to know or realise the thinking ability of learners.*

Teacher 10: *Important to involve learners' in the lesson to see their pre-knowledge.*

It also helps a teacher to see if there is a need for remedial teaching.

Closure of the lesson

Teacher 1: *It ties all elements of the lesson to measure if objectives are met.*

Teacher 2: *To know the way forward, sometimes the lesson continues and closure is done after the lesson is complete.*

Teacher 5*: Gives a clue above the attainment of the objectives of the lesson.*

Teacher 6: *Give you immediate information on the level of focus of learners. Recap and summary or theme work / activity.*

Teacher 7: *So that it is known that the topic or lesson is over, the learners will also know if the lesson is continuing.*

Teacher 9: *Consolidation part. It gives you a good idea on whether the learners understood what was taught.*

> Teacher 15: *Am always no so worried about other parts of the lesson because I am satisfied with them.*

As can be observed in Table 4.11, a high number of teachers, eight out of fifteen focused on reviewing classroom management followed by a total of seven out of fifteen who indicated that they focussed on reviewing the engagement of learners during lessons. A high number of the teachers considered reviewing their classroom management during lessons because they believed that a poorly managed class promotes misbehaviour that can be directly linked to poor academic performance. Statement of the learning objectives was least cited by teachers for consideration under the review of the lesson presentation. Only three out of fifteen teachers thought reviewing the statement of the objectives of the lesson worthwhile. This relates to the data that was collected through Appendix C (the RTLOCL) which revealed that eleven out of fifteen or 75% of the classes observed, teachers did not introduce the expected learning outcomes of the lesson before they started sharing the content of the lesson. Ferwana (2006) and Mirzaeia, Phangb & Kashefic (2013) argued that a reflective teacher needs to state the objectives in the introductory part of the lesson in order to ensure that all learners are directed towards the desired learning outcomes. Furthermore, stating learning outcomes is the benchmark upon which the evaluation of success of a lesson is based.

4.4.4.1 Communication Skills

Question 2.1 (from RTIS): *How important is communication in teaching?*

Collected data revealed that all teachers viewed communication as an important and integral aspect of effective learning and teaching. Below are the selected verbatim narrations of teachers views on the importance of communication in teaching:

Teacher 1: *Very important, poor communication will lead to learners missing the point.*

Teacher 2: *Very, very important, it is the major tool to teaching. Without it, no learning and teaching occurs*.

Teacher 3: *Important because without it a teacher can't deliver, needed for effective learning and teaching*.

Teacher 4: *Very important, it is the only way you give instructions to learners and explain the content.*

Teacher 5: *Very important for learning to take place. Learners should be allowed to talk and teachers should guide.*

Teacher 6: *Very Important, it is the way teachers help learners to master content. It is a two-way process learner also communicate back to the teacher*.

Teacher 6: *Very important for instruction, democracy, e.g. if a child does not concentrate in class don't be hush, find out, it could be the lesson is boring. Emphasise democracy*.

Teacher 7: *It helps the relationship and openness. Poor communication makes learners scared of the teacher*.

Teacher 8: *Very important, it helps to translate content well to learners*.

Teacher 9: *Very important tool, it is the only way you can interpreted the syllabus*.

Teacher 10: *To engage learners, no way you can teach without good communication ability.*

Teacher 12: *Critical because it is through communication that information is passed from teachers to learners. It is a primary tool used in teaching. It is through communication that teachers deliver lessons and learners indicate where they lack understanding.*

Teacher 13: *Very important, poor communication will lead to learners missing the point"*

Teacher 15: *Very important because it is the only way a teacher can convey information to the learners. It is the only way to find out where learners are in learning. Do they understand or not?*

Communication tools in relation to reflective teaching can be developed in a variety of ways: through the keeping of a personal teaching journal or diary, or through a more formal professional portfolio, supported by a system of formal tutorials with a mentor (Dymoke and Harrison, 2008). Since critical reflection on teaching is an active and

conscious process (Schön, 1983, 1987, 1991), teachers can start by asking themselves a series of open questions about particular teaching episode or a critical incident within that episode, and jotting down their impressions using one of these ways of recording: What have I been doing? What am I doing? What has happened? What is happening? What led up to this? And why? As can be observed in the teachers' verbatim responses, communication is taken to basically focus on the clarity of tone during lesson presentation. Introspection is totally considered outside communication. The only communication tool that was observed during data collection was the lesson preparation file. Teachers were not familiar with other communication tools such as: teaching journals and professional portfolio in relation to reflective teaching as indicated by (Dymoke and Harisson, 2008). This further supports the argument that low unfavorable performance of learners in the Zambezi region is highly influenced by lack of reflective teaching:

Question 2.2 (from RTIS): *In your opinion, how could a teacher communicate successfully with his / her learners?*

Below are some of the verbatim responses of teachers to question 2 above;

> Teacher 2: *Room for a two-way communication, teacher explain, learners indicate whether they understood or not. Learner should be free to express themselves, alternatives to answer question allowed.*

Teacher 3: *Simple language, understood by learners, allowing learners to engage in the learning process through asking questions and answering. We learn by mistakes.*

Teacher 4: *Tone of voice dictates what happens in the class, high tone scares learners, calm tone facilitates successful communication in the classroom"*

Teacher 5: *Oral questioning, written class activity. When learners understand content (written or oral).*

Teacher 6: *Preparation, a teacher should prepare well, the teacher knows what to teach and learners receive the right content. It helps with teachers' confidence.*

Teacher 7: *It goes back to the element of democracy, be part of decision making.*

Teacher 9: *Based on how you give information, do they understand the instruction, do thy carry out instruction. That will help you to know that communication was successful. If not, it means communication was not successful.*

Teacher 9: *Should be a two ways process. Teachers communicates information and the learners respond e.g. task by the teacher, response from the learners and feedback from teachers on success of learning.*

Teacher 11: *Good listener, respond with respect without hurt.*

Teacher 13: *Conducive, one to one situation, group discussion and feedback. Give work and learners report.*

In summary, teachers' responses to question 2 above converged to the following narrations: a successful teacher communicator is need to be a good listener, use of simple language and a good alteration of the tone of voice. Communication is key to effective teaching. It is therefore important that teachers consider reflecting on how they communicate with their learners during the review of the lesson in order to effect effective communication.

Question 1.3 (from RTIS): *Do you think asking about the relevance of your teaching method to your learners can help improve your teaching methods?*

Below are selected verbatim responses of teachers to question 3 above:

Teacher 1: *Yes, it helps to see if your pace is appropriate and to see if you are reaching out to all learners.*

Teacher 3: *Relevant to some but not all. There are those that understand the reason for schooling. Some learners may ask you to use methods that do not involves them in the lesson which can be misguiding.*

Teacher 4: *It might help, however as a trained teacher you can use assessment results to determine the success of your teaching methods, flexibility, be kind to them not hush and not too lenient.*

Teacher 5: *Yes, because they are the recipients of content. Perhaps your methods do not reach out to them. You need to ask them at some point it is helpful.*

Teacher 6: *Yes, I see it as a way but we rarely do it. e.g. the learners could tell about lesson projections of methods.*

Teacher 7: *Yes, one time a learner told me; sir you speak too loud and fast. That helped me to lower down the tone and speak a bit slower.*

Teacher 8: *Yes, teachers are afraid of criticism but reality is important. Learners can give you an indication of what is missing in your teaching.*

Teacher 9: *Yes, it helps to identify your weaknesses and strength. At times giving them room maybe difficult to reverse the situation. e.g. when they are lazy to work they might recommend learner centred.*

Teacher 11: *Yes, it does. Because, learners are the first judges to see if the teacher is doing what is expected. They can tell who is a good teacher. They can boycott classes when you are late, they can tell you it is time for class. Give them room to help you improve in certain areas of weakness they can identify.*

Teacher 12: *Yes, important, they help you to know if your teaching is suitable for them, confirmation. Also trying to know how you can change to suit learners needs.*

> Teacher 14: *Yes, when you ask learners it gives a teacher a good chance to know if learners are following and help the teacher to change the method if the current method does not suit them.*

Question 2.3 (from RTIS) received mixed reactions from teachers, with most teachers conceding that asking learners for feedback on the relevance of a teaching method applied could help improve teaching, while some teachers felt that it depends on the type of learners. Hinting that some learners could be lazy and they would rather suggest that a teacher employ teacher centred methods in the classroom in order to free themselves from classroom interactions. Overall, learners' feedback is a vital aspect of reflective teaching as it provides insights into areas that teachers may need to consider for improvement. Ferwana (2006) states that this technique called "action meeting" was conducted by members of the class without the teacher being present in order to review the progress of their course, to record what they liked as well as what they would like more in the future. The information gathered from learners could positively improve the classroom environment (Parlakian, 2001 & Ferwana, 2006).

Question 2.4 (from RTIS): *Who does the most talking in your class, you or the learner?*

Table 4.12: Shows teachers' responses to the question: who talks the most in the class?

Who does the most talking in your class, you or the learner?	
The teacher	The learner
53%	47%

Below is the selected verbatim of teachers' responses to question 4 above:

Teacher 1: *The teacher does the most at the beginning because learners do not have basics.*

Teacher 2: *The teacher talks more. The content of the subject requires that the teacher puts more effort to bring up the level of learners, but there is room for them to talk.*

Teacher 3: *The teacher does most, but learners should be engaged too. Should not be passive recipient of learning."*

Teacher 4: *Learner, the teacher only guides and learners work in groups. As they share ideas they talk most and the teacher facilitates.*

Teacher 5: *Learners, (learner centred approach).*

Teacher 6: *In Grade 11 I talk more than the learners because I have to explain new concepts. In grade 12, learners do most of the talking because they have basic understanding of the subject concepts.*

Teacher 7: *Learners, the teacher only guides them on what needs to be done.*

Teacher 8: *Learners are the focal point of learning. The teacher should just facilitate learning.*

Teacher 9: *Teacher, due to lack of willingness to participation by learners. If learners are given more time to talk more time will be wasted*.

Teacher 10: *Learners, because history class requires debate, learners' opinions matter. Judgement needs to be reached based on facts on the ground.*

Teacher 11: *Depends on the nature of the topic. Some topics may require more teacher talk time but others may require more learner discussions*.

Teacher 13: *The teacher talks more, because the learners' knowledge is limited, so the teacher explains more to build on the learners limited knowledge.*

As can be observed in Table 4.12, teachers' responses revealed that during learning and teaching in the classroom, the teacher talks slightly more than learners do. This is despite the advocation for learner centred education in Namibia which calls for the learners to be more actively involved in the learning process while the teachers ought to play the facilitator's role. Philip (2010) advocated that teachers as facilitators of the learning process, ought to provide guidance and challenging but attainable activities that captures the attention of learners and ensure their active participation in the discovery of knowledge and skills.

4.4.4.2 Team work skills

Question 3.1 (from RTIS): *Do you work together with other teachers in your area of specialisation (collaborative teaching)? If yes, please explain.*

The analysis of the collected data indicated that thirteen out of fifteen or 87% of the teachers collaborated with their peers in different dimensions of teaching, learning and assessment. Those who indicated no compliance to collaborative teaching constituted 2 out of 15 or 13% and one of the reasons cited for those who did not collaborate with others was that fellow colleagues in the same area of specialisation were less competent. Below are some of the verbatim responses of participants to question 1 above:

> Teacher 2: *Yes, I collaborate with other teachers who mark final exam papers for tips on how learners' answers are marked.*
>
> Teacher 3: *Yes, but on rare occasions, on certain topics where I require guidance from others.*
>
> Teacher 6: *Yes, in the same department. Through departmental meetings cluster or circuit levels.*
>
> Teacher 7: *Yes, some topics from the syllabi requires help from other teachers.*
>
> Teacher 8: *Yes, new topics need teachers to help each other in different areas.*
>
> Teacher 9: *Yes, finding resources for specific competencies and themes. I usually call other school teachers and talk.*

Teacher 10: *Yes, share resources.*

Teacher 11: *Yes, especially for practical. Assist each other before class.*

Teacher 12*: I have not done it at this school, but done at the previous school. Only at departmental meetings.*

Teacher 14: *I doubt it much. Teachers have a tendency of absorbing information and resources from others but they do not contribute much.*

Teacher 15: *No, because there are no other competent teachers in this area at the school.*

According to Dymoke and Harrison (2008) teachers will find themselves working in a number of teams from the start of their teaching career: their subject or curriculum team, their pastoral team and cross-curricular groups working on particular issues such as personalized learning and aspects of assessment, and so on. Co-teaching, collaborative practitioner enquiry and action research are tools that prompt team working skill of teachers (Dymoke and Harrison, 2008). Effective reflective teaching equally provides teachers with a platform to reflect on the quality of their team work and requires them to ask critical questions about how efforts of team work can be improved. In summary, team work that is well coordinated and focused is most likely to improve the qualities of a teacher in the facilitation of learning.

Question 3.2 (from RTIS): *Do you think team work can support your teaching?*

The findings of this study indicated that 15 out of 15 or 100% of teacher acknowledged that team work can support their teaching. Below are some of their verbatim narrations in response to question 3.2 from RTIS:

Teacher 2: *Yes, for example tips on areas where learners usually perform poorly.*

Teacher 4: *Yes, two heads are better than one. Brings multiple perspectives on how to handle a topic.*

Teacher 5: *Yes, problematic learners or slow learners can be easily identified for the relevant intervention.*

Teacher 6 & 13: *Indicated that team work helps because it helps one to learn from others and share ideas. It helps to simplify difficult topics.*

Teacher 7 & 11: indicated that *team work is important as it provides one with an opportunity learn from others, share resources and methodology.*

Teacher 9: *It helps to observe from a colleague's other ways of doing things*.

Teacher 12: *It does, it helps you to learn from other colleagues how they present lessons, methods and how they handle slow and gifted learners.*

Teacher 15: *Yes, sharing information helps all teachers involved in one way or another.*

Teachers appreciated team work as one of the ways they could discover alternative ways of doing things and ultimately improve the teaching learning environment. Team work further provides benefits such as sharing resources, skills and knowledge which helps to fill the gaps in the teaching profession (Dymoke & Harrison, 2008 and Spalding, 2020).

Question 3.3 (from RTIS): *What benefits do you see for team work?*

This was one of the questions that received the lowest number of responses. It is however worth noting that teachers may have opted to skip this question as they felt that they had given their answers under question 2 already. Only four out of fifteen teachers responded to this question, representing 4 out of 15 or 26% of the respondents. Those who responded cited the benefits of team work as follow:

> Teacher 3: *Sharing tips on areas where learners usually perform poorly*.
>
> Teacher 5: *Gaining multiple perspectives to teaching*.
>
> Teacher 6: *Learning new things from others*.
>
> Teacher 9: *Sharing knowledge.*

From the verbatim responses of teachers, it can be concluded that most of the teachers were not familiar with the benefits of reflective teaching as indicated in the literature reviewed. This is mainly because most of the benefits unveiled under literature review were not mentioned by teachers who participated in the study.

Question 3.4 (from RTIS): *Do you have any co-teaching activities? If yes, please explain.*

Here are some of the verbatim responses of the teachers to question 4 above:

> Teacher 1: *It only happens at the end of the year when learners prepare for exams, sometimes the principal helps me to explain content.*
>
> Teacher 2: *Not yet done at the present school. Because procedures are a bit different from the previous school where I was doing it.*
>
> Teacher 4: *No such arrangement but necessary to help.*
>
> Teacher 5 & 8: *Indicated that they have not yet engaged in* co-teaching *at the current school, but have done so at their previous schools.*
>
> Teacher 6: *Not really done, but only done if someone is absent, I teach some topics for a colleague where he finds it difficult to teach.*
>
> Teacher 7: *Not.*
>
> Teacher 8: *Only at the former school. I am still a new teacher at the school.*
>
> Teacher 9: *Not at the moment.*
>
> Teacher 12: *Not yet, though on proposal. But at times I pitch up in a friend's class for some minutes.*

As can be observed from the verbatim responses of the teachers above, co-teaching is not a common practice in the Zambezi Region. This contradicts the teachers' responses

to question 1, where 13 out of 15 or 87% of teachers indicated that they were involved in collaborative teaching or team work. The contradiction implies that team work or collaborative teaching does not take form of co-teaching, but it occurs in other forms like sharing of resources and ideas. Only 7% or 1 out of 15 teachers indicated that they engaged in co-teaching. Collaborative teaching is important as it provides a basic opportunity for peer mentoring (Bell, 2002 and Hammersley-Fletcher & Orsmond, 2005).

From the data collected, it can be concluded that some of the reasons why there was an observed lack of collaborative teaching at the observed schools includes but may not be limited to the following: teacher training in reflective teaching, operational teaching structures and the absence of policies stressing the need for collaborative teaching.

Question 3.5 (from RTIS): *What are the benefits of co-teaching?*

Teacher 2: *You learn from each other and improve in some areas of teaching.*

Teacher 5: *Brings more ideas about how to handle a topic*.

Teacher 6: *Helps in topics where the teacher is not so competent. A colleague can help.*

Teacher 7: *Yes, you learn from others how they explain content and you also methodology.*

> Teacher 13: *Sharing knowledge.*

Co-teaching is part of team work. Teachers indicated that co-teaching is a beneficial exercise that needs to be implemented by teachers. The narratives above are verbatim of selected reasons given by teachers in support of co-teaching. Despite the recognition of the value that co-teaching brings to teaching, teachers did not seem to have the desire to actively initiate co-teaching. This is mainly because teachers were not well trained to execute co-teaching. Furthermore, it implies that teachers have not realised the potential impact of co-teaching in uplifting the learning / teaching environment.

4.4.4.3 Judgement skills

Question 4.1 (from RTIS): *Have you ever thought about evaluating your teaching methods? Please explain.*

Data collected revealed that 14 out of 15 teachers in Zambezi Region thought about evaluating their teaching methods. Data further revealed that 9 out of these 15 teachers' only thought about evaluating their teaching methods at the end of the year when results are released (especially when learners perform poorly). It was also recorded that 4 of the 15 teachers indicated that they thought about evaluating their teaching methods throughout the year, while 1 out of the 15 teachers indicated that he never thought about evaluating his teaching methods. Below are some of the verbatim responses of the teachers to question 1 above:

> Teacher 1: *Evaluation done at the end of the year, especially after results are out. Especially when results are poor.*

Teacher 3: *Only done at the end of the class or asking the management to do class visits for teachers' assessment.*

Teacher 4: *Yes, triggered by the response of learners. The way they respond to questions makes you ask question, am I really reaching out to them?*

Teacher 5: *Yes, when there is less responses from learners, I change to other methods that engages learners.*

Teacher 6: *Yes, at times I think stop and evaluate my methods due to questions I* get *from learners. I then change the method to. If learners are not knowledgeable about a topic, one might need to change the method.*

Teacher 7: *Yes, at times while teaching you realise that your method is not working or the level of understanding of learners is lower that you thought. When you realise that you were not at the same level, you change the approach.*

Teacher 8: *Yes, when you go to class and find that the situation is not what you expected. That is why I condemn lesson plans l/preparation. It does not work.*

In order to analyse a classroom, event or situation, teachers should try to be absolutely clear what that event or situation consists of. If teachers too are involved in that event or situation, then this view of the event needs to be impartial. Just describing what

happens during the event can be problematic as well. Teachers may rather need to skilfully, combine details of the event with their judgment, or with additional explanations and theories. As a judge, it is important to find the best idea and not wait for the perfect idea (Dymoke and Harrison, 2008).

Question 4.2 (from RTIS): *Have you ever asked yourself some questions about your teaching methods? If yes, what questions do you ask?*

Table 4.13 Summary of the responses of teacher on whether or not they questioned their own teaching methods

Teachers responses to question 2 above	
Yes	No
13	2

Generally, 14 out of the 15 teachers who participated in this study indicated that they asked themselves questions about their teaching methods. Only one teacher out of 15 teachers indicated that he never really considered asking himself questions about his teaching methods. Below are the selected verbatim responses from the teachers to question 2 above:

Teacher 1: *Yes, questions asked: is it okay for me to talk more than learners?*

Teacher 2: *Yes, e.g. does learner centred approach really work?*

Teacher 3: *Yes, why did learners respond in a way they did, why did the method fail, how can I improve the method?*

Teacher 5: *Yes, especially when learners do not demonstrate understanding. You ask yourself, if I used a different method maybe it could work, then you try something new and compare results*.

Teacher 6: *No, there is not enough time for asking such questions*.

Teacher 7: *Yes, for review of the appropriateness of the strategies used in class (reflection).*

Teacher 8: *Important, because it gives you some form of direction. If learners understood, you go on if not, you need to revise.*

Teacher 10: *Yes, helps to see or identify areas where learners' weakness / strength lies so that you can find ways to help learners e.g. compensatory teaching.*

Teacher 11: *Yes, give you a chance to look at your presentation later to see where you need to change. egg voice projection.*

Teacher 12*: Not really as an experience teacher you would know what happened in your class, you already know the problems.*

Teacher 13: *Yes, it helps you to see if you are progressing or not, e.g. record of assessment, attendance of learners in class. Which can help you to tell/ link the performance of learners.*

Teacher 14: *Yes, important because it helps a teacher to get a general overview of the lesson delivery or attainment of objectives. Very important to do analysis of your teaching.*

> Teacher 15: *Yes, for review of the appropriateness of the strategy used in the class (reflection). Important for reason of easy detection of mistakes and helps to improve for the next lesson.*

Data collected indicates that 87% of 15 teachers asked themselves questions about their teaching methods. Asking the right questions about teaching methods during and after the lesson presentation is characteristic of a reflective teacher. Critically asking questions about teaching methods leads to seeking alternative better methods of teaching content. Improved teaching methods improve learners' academic performance.

4.5 HOW PRINCIPALS ASSESS THE APPLICATION OF REFLECTIVE TEACHING (BY TEACHERS) AND ITS INFLUENCE ON LEARNERS' PERFORMANCE IN THE ZAMBEZI REGION

In order to determine how principals understood and assessed the application of reflective teaching and its influence on learners' performance, the following were some of the questions asked. Five school principals from the selected schools in in the Zambezi Region were equally asked to share their understanding of reflective teaching.

4.5.1 Encouraging teachers to engage in reflective teaching

Question 1: *Is reflective teaching encouraged at your school?*

In their responses to question 1 above, all principals indicated that they encouraged reflective teaching at their schools. It is however important to note that their explanation to how reflective teaching was being encouraged at their schools exposed a lack of understanding of the concept its self.

Below are the verbatim responses of the school principals:

Principal 1: *Yes, through preparation file if the teacher has not done it, you can determine that assessment was not done. They can only measure success through reflection. Time for remedial teaching to carter for slow learners. This can be done after identifying that ¾ of the learners got the lesson, but ¼ did not get the lesson. This requires remedial teaching to catch up.*

Principal 3: *It is encouraged, teachers should start with lesson plans, teachers should give activities, mark and reflect. If learners do not perform, repeat the lesson. Written work more encouraged as evidence.*

Principal 4: *Yes, encouraged in the sense that right at admission of learners we place them in the fields based on grade 10 results. It helps to place them in the right fields.*

Principal 5: *Encouraged through Examiners' reports from the Directorate for National Examination and Assessment (DNEA), where they report on teacher/learners mistakes. After studying such reports, it gives us a clue on where to improve*.

In general principals recognised the importance of reflective teaching. It was however observed that school principals too were not well trained in reflective teaching. This made it slightly difficult for them to reinforce its application at the observed schools. Principals indicated that they predominantly encouraged reflective teaching through lesson planning forms.

4.5.2 Assessing reflective teaching

Question 2: *How do you assess the application of reflective teaching and its influence on learners' performance at your school?*

Data collected revealed that principals mainly assessed the application of reflective teaching through reflective supervision or class visits as commonly known. All five principals indicated that they monitor the application of reflective teaching through class visits. Principals kept records of a schedule for class visits but did not have a detailed report records of comments shared during their visits to the classrooms. In question 3 below, the school principals were also asked to share their views on the potential impact of reflective teaching on the performance of learners at their school.

Question 3: *How do you think encouraging reflective teaching at your school would impact learners' performance?* Below are the verbatim responses of the principals who participated:

Principal 1: *It will avoid mistakes done previously, without reflective practice, no improvement. Reflection allows people to identify mistakes and change for better thereby improving results.*

Principal 2: *It can improve the performance of teachers' and learners' understanding.*

Principal 3: *It can improve results. Reflecting on assessment results and then mapping the way forward instead of just going forward.*

Principal 4: *It has a positive impact on performance. If no reflections are done, no change will come. Change comes when problems are identified. Reflection needed to indicate what worked well and what didn't work well. I think lack of reflection is the main reason why Zambezi is not performing. Reflective teaching would elevate the performance because it looks at everything.*

Principal 5: *Very important, each teacher needs to do it at the end of each lesson. It is the common practice in Namibia. In the class, the teacher should ask questions to measure the quality of learning. The lesson preparation forms provide space for lesson reflections after a lesson. e.g. if class work is given and majority gets 80% or more, the lesson was successful. If they get less, it means the lesson did not succeed. Would impact positively in the sense that you will know the ideal methods to use when teaching learners.*

Data collected indicated that all principals acknowledged and valued the role of reflective teaching in improving the performance of learners in the NSSCO.

Question 10 (from RTCOEQ): *Would you like a teachers' guide on reflective teaching?*

This question was asked to determine the need and desire of teachers to learn more about reflective teaching.

There was a strong need for a teacher's guide on reflective teaching as the findings of the study indicated that all teachers needed a teachers' guide on reflective teaching. The massive need for a guide on reflective teaching further consolidates the desire of teachers to rescue poor results of grade 12 learners observed over the years in the Zambezi Region and heir uncertainty on the current implementation of reflective teaching their classrooms.

4.3 SUMMARY

In this chapter the findings of this study, collected by the three tools were presented, analysed and discussed to derive meaning from the collected data. Data collected from both tools seem to converge towards the conclusion that teachers in the selected schools of the Zambezi Region had high regards for reflective teaching as a means to improve teachers' and learners' performance. It is however important to note that, data from the three tools equally revealed that teachers are not well equipped with skills

and knowledge necessary to effectively engage in reflective teaching. As argued earlier by Ferwana (2006), a good reflective disposition of a teacher can improve learners' performance. It can therefore be taken to inversely imply that teachers' lack of understanding in reflective teaching may contributes to persistent poor performance. A situation that resembles the current situation of grade12 learners' performance in the NSSCO level examinations in the Zambezi Region.

Taking it from the perspective that reflective teaching is a teacher's assessment tool necessary for shaping effective teaching and the learning environment, it can be concluded that 23% of teachers from the Zambezi Region who participated in this study lacked training in reflective teaching for decision making that could improve the teaching learning environment in their classrooms. Teaching that lacks reflection is tantamount to poor learners' performance on tasks taught. As Ferwana (2006) points out, learners who attend classes where teachers engage in structured reflection on learning and teaching are more likely to achieve high understanding of the content taught than those who are taught in a class where no or less structured reflections take place.

Though the study revealed that teachers lacked skills and knowledge required to successfully execute reflective teaching. Teachers also claimed that lack of equipment and stringent schedules as some of the reasons why they do not really engage in reflective teaching. Failure to engage in effective reflections further implies stagnation in professional growth and development. Lack of professional growth and

development are the detrimental ingredients for constant poor performance in the work place (including the classroom where learning and teaching ought to take place). During lesson observations by using the RTLOC, it was found that teachers were not so familiar with the application of reflective teaching, though they claimed to be familiar with reflective teaching. This may explain the observed stagnation of the region in the national regional rankings of the NSSCO examinations. This is in line with Fullan (1991) who holds the view that educational change depends on what teachers do and think. Clift, Houston & Pach (1990) and Evans (2002) further state that, one of the best ways by which teachers may consistently monitor and improve their ability to teach effectively is through self-reflection on teaching.

A look at the learners' performance by subjects or fields of study, does not yield any difference in terms of the correlation between teachers who claimed familiarity to reflective teaching and good performance in their subject areas. This could be attributed to the fact that most of the teachers who indicated that they were acquainted with reflective teaching, but when observed by using the RTLOC were unable to apply what they theorised (in the RTCOEQ and RTIS) about reflective teaching.

It can therefore be concluded that the poor performance of learners in the NSSCO examination that is consistently observed in the Zambezi Region for the last 6 / 7, is greatly influenced by teachers' lack of understanding and application of reflective teaching. This is in line with literature by Swarts (1998), Zwozdiak-Myers (2009), Bolton (2010), Lai (2011), Fatemipour (2012), Bababei & Abednia (2016) and

Spalding (2020) who collectively argued that reflective teaching is a professional tool for teachers to improve the teaching / learning environment. Chapter 5 will discuss the conclusion and recommendations based on the discussion of the presented data.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This study has been accomplished through the chapters that interrogated teachers understanding and application of reflective teaching and how it influenced learners' performance in the NSSCO in Zambezi Region. The literature reviewed and the findings of this study provided valuable information that forms the basis for recommendations to individual teachers, school principals, teacher training institutions, Ministry of Education & it's agencies and teacher training institutions.

5.2 CONCLUSION

In conclusion this study was set out to establish the teachers' understanding and application of reflective teaching in the Zambezi Region and how that impacted learners' performance in the NSSCO examinations. This study provides sufficient information about the reflective teaching, its characteristics and its impact. Moreover, this study gave a clear description of the (case school) teachers' understanding and application of reflective teaching of the in Zambezi Region and how it has influenced learners' performance over the years. In the end, it is expected that all teachers will learn more about reflective teaching and apply it in order to develop their performance as well as that of their learners'. Engaging in reflective teaching takes time and efforts but the rewards can be great (Zeichner and Liston, 1996). Reflective teaching should

be inseparable from teaching at all levels in the Zambezi Region and Namibia at large in order to foster better performance of teachers and learners.

Some of the limitations that were encountered during this study were that some teachers and principals were not familiar with the concept of reflective teaching. That made it slightly difficulty for them to provide genuine answers needed to meet the objectives of this study. The study successfully established that lack of knowledge and skills in reflective teaching is one of the factors responsible for the poor performance of learners in the region in the Zambezi Region. Other factors related to reflective teaching which hindered teachers from engaging in reflective teaching included lack of equipment and rigid schedules that teachers had to follow.

The extensive analysis of the study results indicated that teachers regarded reflective teaching highly. However, they needed more training in reflective teaching knowledge, skills and the modalities of its application. The data confirmed lower background knowledge regarding the characteristics and the elements of reflective teaching. The RTCOEQ (Appendix A) results revealed a positive thinking regarding the value of reflective teaching. The RTLOC (Appendix B) which consisted of three phases, showed a low to medium level of applying reflective teaching during lesson presentations. As supported by the reviewed literature, analysis, presentation and discussion of collected data, it is concluded that Zambezi Region learners' performance in NSSCO has remained poor in the past years because of the observed

lack off or lower levels of teachers' understanding and practice of reflective teaching, among others.

This study concludes that the observed deterioration in the performance of learners in the Zambezi Region is partially due to lack of reflective teaching. This is supported by literature from studies conducted by researchers such as Finlay (2008); Zwozdiak-Myers (2009); Bolton (2010); Fatemipour (2012); Babei & Abednia (2016) and Spalding, 2020) who indicated that without reflective teaching, learners' performance is bound to decline due to the unexamined teaching and learning environment. Reflective teaching helps to improve teachers' abilities to facilitate a quality learning and teaching environment (Babei & Abednia, 2016). There were deficiencies in applying reflective teaching observed as teachers in the Zambezi Region presented lessons. The observed deficiencies in applying reflective teaching were due to lack of skills and knowledge on how to apply it as revealed by the data collected. The teaching process routine (teaching at the same school, the same textbook, and the same level of knowledge) can negatively influence the teachers' desire to start reflecting (Gierhinger, 1996). It is worth noting that this study is neither implying nor denying that good performance observed in the other regions is due to teachers being reflective. As William (2018) clearly stated, every teacher needs to improve, not because they are not good, but because they can even be better.

Considering that reflective teaching is one of the recommended skill for teachers in the 21st century. This study is important in that it lays a foundation upon which the

Ministry of Education, Arts and Culture in Namibia can inculcate reflective teaching attributes for all in-serve teachers in Namibia. Furthermore, this study presents an opportunity for all teacher training institutions in Namibia to have a re-look into their teacher training programs and consider the inclusion of reflective teaching as an imperative for all teacher training programs. Teachers, school principals, inspectors and educational directors should focus on reflective teaching in order to improve the teachers' abilities and skills, as well as the learners' achievement and possibilities. All of them should cooperate with each other to enhance the teaching process in addition to the teachers' practice. Besides that, they should facilitate the reflection process and do their best to get rid of the difficulties and the obstacles which face teachers in their endeavor to engage in reflective teaching. This study should be considered as an announcement for every interested person in the educational department (learning and teaching) to highlight reflective teaching, to hold workshops to discuss its impact, to read more about what the scholars say about it and to apply reflective teaching in our schools and tertiary institutions. Recommendations concerning dialogue journals, seminars, and faculty professional development seminars could be helpful to teacher educators in redesigning their program of study to meet the constantly evolving educational needs (Nunan, David & Lamb Clarice, 2000).

Finally, this study has contributed to filling gaps in literature regarding reflective teaching and learners' performance in Namibia. There has been no study of this kind ever conducted in Namibia.

5.3 RECOMMENDATIONS

After discovering (through data collected) that teachers lacked understanding of reflective teaching, the researcher found it important to give some recommendations that could help rescue the current poor performance of grade 12 learners in Zambezi Region. Since this study discovered the need to adequately equip teachers with the skills and knowledge in reflective teaching, remedial action highly recommended. The recommendations are organised into the following five categories:

5.3.1 Recommendations for Teachers

Teachers as custodians of reflective teaching are recommended to endeavour improving their understanding of reflective teaching. A teachers' guide on reflective teaching compiled out of the findings of this study is recommended for teachers to use. Upon improving their understanding, it is recommended that they apply reflective teaching as a tool for professional growth and development. Teachers are furthers expected to embrace collaborative teaching as a 21st century approach to effective learning and teaching. Finally, it is recommended that teachers consider reflection in action as an integral aspect of assessment for learning. They should therefore make time to do reflections.

5.3.2 Recommendations for School Principals

The findings of the study have shown the need for some principals to improve their understanding in reflective teaching, it is recommended that principals should upgrade their understanding, skills and knowledge in the area of reflective teaching by using

other resources or the teacher's guide compiled out of the findings of this study. Principals as heads of schools are recommended to draw the attention of teachers to the positive utilities of reflective teaching in improving their performance. Furthermore, they should encourage collaborative and cooperative meetings to promote the adoption of the reflective teaching approach and to make changes in teaching practices and attitudes in a supportive environment.

5.3.3 Recommendations for teacher training institutions

The findings of the study have shown that teachers were not well equipped with skills and knowledge during their training, teacher training institutions (through relevant faculties) are recommended to revise the teacher training curricula in order to ensure a comprehensive coverage of reflective teaching. Teacher training institutions are further recommended to organise workshops / conferences for in-service teacher to address the skills and knowledge deficiencies in reflective teaching. A Teacher's guide compiled based on the findings of this study is recommended for use by teacher institutions as a basis for developing a teacher training manual on reflective teaching.

5.3.4 Recommendations for the Zambezi Region, Directorate of Education

As the custodian of basic education in Namibia, the Ministry of Basic Education arts and Culture through its directorate of education in The Zambezi Region is recommended to facilitate hosting workshops on reflective teaching using the teacher training manual produced by this study and supply tools required to implement reflective teaching successfully.

5.3.5 Recommendations for further studies

Further research is recommended into what evidence and criteria shape judgements about reflective teaching and how the school based staff may effectively incorporate reflective teaching in their daily learning and teaching activities.

5.4 SUMMARY

In summary data the indicated the lack of understanding of reflective teaching by teachers who participated in this study. As literature alluded to, reflective teaching is a crucial tool for teachers to improve learning and teaching, which ultimately can lead to better performance of learners. It is in the light of the findings of this study that recommendation that would remedy the situation in the Zambezi Region were proposed in this study.

REFERENCES

Abell, S. K., Bryan, L. A., & Anderson, M. A. (1998). Investigating preservice elementary science teacher reflective thinking using integrated media case-based instruction in elementary science teacher preparation. *Science Education, 82,* 491-510.

Akbari, R., Kiany, G. R., Imani Naeeni, M., & Karimi Allvar, N. (2008). Teachers' teaching styles, sense of efficacy, and reflectivity as correlates of students' achievement outcomes. *Iranian Journal of Applied Linguistics*, 11(1), 1-28.

Akdeniz, C., Bacanli, H., Baysen, E., et al. (2016). *Learning and teaching theories, approaches and models*. Turkey. Zirve University.

Alexander, R. (2010). Towards dialogic teaching Essentials. New York: Dialogos.

Attard, K. and Armour, K. (2006) *Reflecting on reflection*. In P. Zwozdiak-Myers (ed.). An analysis of the concept reflective practice and an investigation into the development of learner teachers' reflective practice within the context of action research (Doctoral dissertation), Retrieved from: http://v-scheiner.brunel.ac.uk/bitstream/2438/4316/1/FulltextThesis.pdf.

Babaei, M & Abednia, A. (2016). Reflective Teaching and Self-Efficacy Beliefs: Exploring Relationships in the Context of Teaching EFL in Iran. *Australian Journal of Teacher Education*, 41 (9), 1–26.

Bailey, R. M. (2000). Visiting the music classroom through the use of the case method in the preparation of senior-level music teacher education learners: A study of reflective judgement (Doctoral dissertation, University of Cincinnati). *Dissertation Abstracts International, 61*(07), 2639.

Bailey, K. M. (2012). Reflective Pedagogy. In Anne Burns & Jack C. Richards (Eds.), *The Cambridge Guide to Pedagogy and Practice in Second Language Teaching*, (pp. 23–37). New York: Cambridge University Press.

Barnett, B.G., & O'Mahoney, G.R. (2006). Developing a Culture of Reflection: Implications for School Improvement. *Journal of Reflective Practice*, 4, 499-523.

Bell, M. (2002). *Peer Observation of Teaching in Australia*. Retrieved from: www.ltsn.ac.uk/genericcentre.

Belvis, E., Pineda, P., Armengol, C., & Moreno, V. (2013). Evaluation of reflective practice in teacher education. *European Journal of Teacher Education*, *36*(3), 279-292. Retrived from: https://doi.org/10.1080/02619768.2012.718758 at March 2020.

Black, S. (2001). Thinking about teaching. How teachers can put reflection at the heart of their teaching. *The American School Board Journal*, (11), 42-44.

Boling, E. C. (2007). Linking technology, learning, and stories: Implications from research on hypermedia video-cases. *Teaching & Teacher Education: An International Journal of Research and Studies*, *23*, 189-200.

Bolton, G. (2010). *Reflective Practice*. Writing and Professional Development. 3rd ed., London: Sage Publications.

Brookfield, S. D. (2017). *Becoming a critically reflective teacher*. San Francisco: Jossey-Bass.

Brown, A.L., & Campione, J.C. (1994). Guided discovery in a community of learners. In K. McGilly (Ed.), *Classroom lessons: Integrating cognitive theory and classroom practice* (pp. 229-270). Cambridge, MA: MIT Press.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*, 1- 15.

Brown, A.L., & Palincsar, A.S. (1989). *Guided cooperative learning and individual knowledge acquisition*. In L.B. Resnick (Ed.), Knowing, learning and instruction. Essays in honor of Robert Glaser (pp. 393-451). Hilsdale, NJ: Erlbaum.

Burns, A. (2015). Action research. *Handbook of Research in Second Language Teaching and Learning*, 1 (2), 237–253.

Cazden, C.B. (1979). Peekaboo as an instructional model: Discourse development at home and at school. *In Papers and reports on child language development* (No. 17). Palo Alto, CA: Stanford University Department of Linguistics.

Clift, R.T., Houston,W.W. and Pach, M.C. (1990). Encouraging Reflective Practice in Education. An analysis of issues and programs. New York: Teachers College Press.

Cobb, P. (1994). An Exchange: Constructivism in Mathematics and Science Education. *Educational Researcher*, 23(7), p.4.

Coghlan, D. (2015). Organization development: action research for organizational change. In Bradbury, H. *The SAGE Handbook of action Research* (pp. 417-423). 55 City Road, London: SAGE Publications Ltd doi: 10.4135/9781473921290.

Creswell, J.W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches (*6th ed.). New York: Sage Publishers.

Cross, D. R. & Paris, S. G. (1988). Developmental and instructional analyses of learner's metacognition and reading comprehension. *Journal of Educational Psychology*, 80(2), 131-142.

Darling-Hammond, L., & Bransford, J. (2005). *Preparing teachers for a changing world. What teachers should learn and be able to do*. San Fransico: Jossey-Brass.

Davies, W. M. and Beaumont, T. J. (2007). *Research Proposals*. Teaching and Learning Unit, Faculty of Business and Economics. University of Melbourne. Retrieved from: http://tlu.fbe.unimelb.edu.au/

Dewey, J. (1963). *Experience and education*. New York: Macmillan.

Dewey, J. (1933). *How we think. Boston*: D.C. Heath and Co: Boston.

Dewey, J. (1916). *Democracy and education*. New York: Macmillan.

Dewey, J. (1902). *The child and the curriculum. Chicago*: University of Chicago Press.

Dymoke, S., & Harrison, J. (2008). *Reflective learning and teaching: A guide to professional issues for beginning secondary teachers.* Los Angeles: SAGE. Chicago.

Ekebergh, M. (2007). Lifeworld-based reflection and learning: a contribution to the reflective practice in nursing and nursing education. *Reflective Practice*, 8(3), 331-343.

Elbers, E., & Streefland, L. (2000). "*Shall we be researchers again*?" Identity and social interaction in a community of inquiry. In H. Cowie & G. van der Aalsvort (Eds.), *Social interaction in learning and instruction*: The meaning of discourse for the construction of knowledge (pp. 35-51). Amsterdam: Pergamon Press.

Elliot, J. (1991). *Action Research for Educational Change*. Buckingham: Open University Press.

Evans, L. (2002). What is teacher development? *Oxford Review of Education*, 28 (1), 123-137.

Farrel, T. S. (2016). *Reflection practice in action: 80 reflection breaks for busy Teachers.* California: Corwin Press.

Fatemipour, H. (2012). *The efficiency of the tools for reflective teaching in ESL context*. Paper presented at the 3rd world conference on learning, teaching and educational leadership. Iran. Islamic Azad University.

Feiman-Nemser, S. **(**1990). *Conceptual Orientations in Teacher Education*. United States. National Center for Research on Teacher Education.

Ferwana, K.M. (2006). *Levels of Reflective Teaching among the Student Teachers of English in Gaza Universities*. (Masters' thesis). Gaza Strip: University of Gaza.

Finlay, L. (2008). *Reflecting on 'Reflective Practice'*. Discussion Paper, Practice-Based Professional Learning Centre. The Open University. Retrieved from: www.open.ac.uk/pblc.

Fisher, R. (1998). Teaching thinking. London, UK: Cassell.

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive developmental inquiry. *American Psychologist*, 34(10), 906-911.

Fullan, M. (1991). The New Meaning of Educational Change. London: Falmer.

Gibbs, G. (1988). *Learning by Doing: A guide to learning and teaching methods*. Further Education Unit. Oxford Polytechnic: Oxford.

Gierlinger, E. (1996). *Why reflective teaching is an important issue in language teacher development and why it is even more beneficial on an international level*. Retrieved June 16, 2018 from http://simsim.rug.ac.be/latpflat/CAR/gierlinger.html.

Giovannelli, M. (2003). Relationship between reflective disposition toward teaching and effective teaching. *The journalof educational research*, 96(5), 293-309. Retrived from:https://doi.org/10.1080/00220670309597642 at 15 April 2020.

Grant, C. A., & Zeichner, K. (1984). On becoming a reflective teacher. *Preparing for reflective teaching*, 1-18.

Grushka, K., Hinde-McLeod, J. & Reynolds, R. (2005). Reflecting upon reflection: theory and Practice in one Australian university teacher education program. *Reflective Practice*, 6(1), 239-246.

Hammersley-Fletcher, L & Orsmond, P. (2005). Reflecting on reflective practices within peer observation. *Studies in Higher Education*, 30, 213–24.

Harmer, Jeremy. (2007a). *The Practice of English Language Teaching*. UK: Pearson

Harmer, Jeremy. (2007b). *How to Teach English*. China: Pearson Education Limited.

Hatzipanagos, S & Lygo-Baker, S. (2006). Teaching observa- tions: promoting development through critical reflection. *J Higher Educ*, 30, 421–31.

Helyer, R. (2015). Learning through reflection: the critical role of reflection in *Journal of Work-Applied Management*, 7(1), 15–27. https://doi.org/10.1108/JWAM-10-2015-003. 4

Henderson, J. G. (2001). *Reflective teaching: Professional artistry through inquiry*. Upper Saddle River, N.J: Merrill/Prentice Hall.

Hennessey, M. G. (1999). *Probing the dimensions of metacognition: Implications for conceptual change teaching-learning*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Boston, MA.

Holmes, P., Cockburn-Wootten, C., Motion, J., Zorn, E.T., & Roper, J. (2005). Critical reflective Practice in teaching management communication. *Business Communication Quarterly*, 68 (2), 247-257.

Hong, C. E & Lawrence, S.A. (2011). Action research in teacher education: Classroom inquiry, reflection, and data-driven decision making. *Journal of Inquiry & Action in Education*, 4(2). http://www.wpunj.edu/dotAsset/330733.pdf K.

Kemmies, S. (1985). *Action research and the politics of reflection*. In D. Boud, R. Keogh, and D. Walker (Eds), *Reflection*: *Turning Experience into Learning*. London. Kogan.

Kolb, D.A. (1984). *Experiential learning Experience as a Source of Learning and Development*. New Jersey: Prentice Hall.

Kolb, D.A. (n.d). *Learning cycle*. (http://skillsforlearning.leedsbeckett.ac.uk/ preview/content/models/02.shtml).

Kovalainen, M. (2013). *The social construction of learning and teaching in a classroom community of inquiry*. Finland. University of Oulu.

Kovalainen, M., & Kumplainen, K. (2005). *The Discursive Practice of Participation in an Elementary Classroom Community*. Finland. University of Oulu.

Kuhn, D. (2000). Metacognitive development. *Current Directions in Psychological Science, 9(5), 178-181*.

Kuhn, D. & Dean, D. (2004). A bridge between cognitive psychology and educational practice. *Theory into Practice*, 43(4), 268-273.

Lai, R.E. (2011). *Metacognition: A Literature Review*. Research report. U.K. Pearson Publishers.

Larrivee, B. (2000). Transforming teaching practice: *Becoming the critically reflective teacher in Reflective Practice*, 1(3), 293–307.

Leeds-Hurwitz, W. (2009). Social construction of reality. *Encyclopaedia of Communication Theory*, 892-895.

Leedy, D.P & Ormrod, E.J. (2005). *Practical Research, Planning and Design*. 8th ed: New Jersey. Pearson Education Ink.

Lipman, M. (1993). *Thinking learner and education*. Dubuque, IA: Kendall/Hunt Publishing Company.

Lipman, M. (1991). *Thinking in education*. Cambridge, UK: Cambridge University Press.

Lipman, M., Sharp, A. M., & Oscanyan, F.S. (1980). *Philosophy in the classroom. Philadelphia*: Temple University Press.

Liston, D.P, & Zeichner, K.M. (1991). *Teacher education and social conditions of schooling.* New York: Rougtledge.

Littleton, K and Howe, C. (2010). *Educational Dialogues: Understanding and Promoting Productive Interaction.* London: Routledge.

Loughran, J. J. (2006). A response to ‘‘Reflecting on the self’’. *Reflective Practice, 7,* 43–53.

Luiya, L., & Schafer, M. (2013). Critical reflective teaching practice: Enhancing teachers' consciousness of their teaching. *Namibia Continuous Professional Development Journal for Educators,* Volume 1(2013), pp. 61-77.

Lyle, S. (2008). Dialogic teaching: Discussing theoretical contexts and reviewing evidence from classroom practice. *Language and Education* 22(3), 222-240.

Maree, K. (2013). *First Steps in Research.* 1059 Francis Baard Street, Hatfield, Pretoria. Van Schaik Publishers.

Martinez, M. E. (2006). *What is metacognition*? Phi Delta Kappan, 87(9), 696-699.

Mathos, E., Tullier, S., and Nevalga, A.D. (2010). *Presentation from Michigan Campus Compact 2010 Meeting.* Retrieved from: www.micampuscompact.org/cmdocs/mcc/camp/2010 camp presentations/presentations/facilitating reflection handout.pdf.

McKay, E.A. (2008). *Reflective practice: doing, being and becoming a reflective practitioner*. Skills for Practice in Occupational Therapy. Oxford: Elsevier Ltd.

McLeod, L. (1997). Young learner and metacognition: Do we know what they know they know? And if so, what do we do about it? *Australian Journal of Early Childhood*, 22(2), 6-11.

Mercer, N., Dawes, L., & Staarman, J.K. (2009). Dialogic teaching in the primary science classroom. *Language and Education* 23(4), 353-369.

Mercer, N., & Littleton, K. (2007). *Dialogue and the development of learner's thinking*: A sociocultural approach. London: Routledge.

Ministry of Basic Education, Sports and Culture, Namibia. (1995-2000). Directorate of National Examination & Assessment, *Report on the examination*: IGCSE.

Ministry of Education, Arts and Culture, Namibia. (2010-2016). Directorate of National Examination & Assessment, *Report on the examination*: NSSCO.

Ministry of Education, Arts and Culture, Namibia. (2017-2018). Directorate of National Examination & Assessment, *Report on the examination*: NSSCO.

Ministry of Education and Culture, Namibia. (1993). Directorate of National Examination & Assessment, *Report on examination.*

Mirzaeia, F., Phangb, F.A. & Kashefic, H. (2013). Measuring Teachers Reflective Thinking Skills. Malaysia. Elsevier Ltd.

Moon, J. (2005). *Guide for busy academics No. 4: Learning through reflections*. Higher Education Academy. UK. University of Exerter.

Moshman, D. (1982). *Exogenous, endogenous, and dialectical constructivism*. Developmental Review 2: 371–384. Retrieved from: http://cepa.info/3863.

National Institute for Educational Development [NIED]. (2005). *Teacher Education in Namibia*: Research coordinated by The National Institute for Education Development (NIED): Namibia. Gamsberg Mcmillan Publishers.

Nunan, David & Lamb Clarice. (2000). *Self-directed Teacher: Managing the Learning Process*. Cambridge: Cambridge University Press

Palincsar, A.S., & Brown, A.L. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction*, 1, 117-175.

Palincsar, A.S. (1986). The role of dialogue in providing scaffolded instruction. *Educational Psychologist*, 21, 73-98.

Paris, S. G. & Winograd, P. (1990). Promoting metacognition and motivation of exceptional learner. *Remedial and Special Education*, 11(6), 7-15.

Parlakian, R. (2001). *Look, listen, and learn: Reflective supervision and relationship-based work*. Washington, DC: ZERO TO THREE.

Paul, R. W. (1993). The critical thinking movement in historical perspective (Chapter 3). Pseudo critical thinking in the educational establishment (Chapter 4). Critical thinking: Basic questions and answers (Chapter 5). In J. Willsen & A. J. A. Binker (Eds.), *Critical thinking: How to prepare learners for a rapidly changing world* (pp. 37-100). Santa Rosa, CA: Foundations for Critical Thinking.

Philip, A.T. & Dwayne, D.G. (2010). Guiding reflective Practice: An Auditing Framework to Assess Teaching Philosophy and Style. *Journal of Marketing Education*, 32 (2), 182-196.

Piaget, J. **(**1977**)**. *The Grasp of Consciousness: Action and Concept in the Young Child*. London: Routledge and Kegan Paul Ltd.

Piaget**,** J. (1970). *Science of Education and the Psychology of the Child*. New York: Orion Press.

Rayan, A. (2014). The Degree of Reflective Practices of Mathematics Teachers in Hebron Directorates of Education & Its relationship with Teaching Self-Efficacy. *AL-Manarah for Research and Studies*20 (1b), 143-173.

Reflection in educational practice. (n.d.). Retrieved from: http://orgonstate.edu/instruct/ed555/zone1/reflect.htm.

Robichaux, R. R. & Guarino A. J. (2012). Enhancing Pre-service Teachers' Professionalism through Daily Teaching Reflections. *Education Research International*. http://dx.doi.org/10.1155/2012/452687

Rogoff, B. (2003). *The cultural nature of human development.* Oxford: Oxford University Press.

Rogoff, B. (1994). Developing understanding of the idea of communities of learners. *Mind, Culture, and Activity 1*, 209-229.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. New York: Oxford University Press.

Rogoff, B., & Toma, C. (1997). Shared thinking: Community and institutional variations. *Discourse Processes 23*, 471-497.

Rosenshine, B., & Meister, C. (1994). Reciprocal teaching: A review of the research. *Review of Educational Research* 64, 479-530.

Royal Melbourne Institute of Technology. (2009). *GP 3 Encourage critical reflection and recognise how values influence learning*. Retrieved from: http://www1.rmit.edu.au/dsc/learningteaching/guidingprinciples/gp3.

Scardamalia, M., & Bereiter, C. (1985). Fostering the development of self-regulation in learner's knowledge processing. In S. Chipman, J. Segal, & R. Glaser (Eds.), Thinking and learning skills: *Current research and open questions* (Vol. 2, pp. 563577). Hillsdale, NJ: Erlbaum.

Schneider, W. & Lockl, K. (2002). *The development of metacognitive knowledge in learner and adolescents*. In Perfect, T. & Schwartz, B. (Eds.), Applied metacognition. Cambridge, UK: Cambridge University Press.

Schon, D. A. (1991). *The reflective practitioner: How professionals think in action.* Aldershot: Ashgate Publishing Ltd.

Schön, D.A (1987). *Educating the reflective practitioner*. San Francisco: Jossey-Bass Publishers.

Schön, D. A. (1983). *The Reflective Practitioner*. New York: Basic Books.

Schraw, G. (1998). Promoting general metacognitive awareness. *Instructional Science*, 26(1-2), 113-125.

Schraw, G., Crippen, K. J., & Hartley, K. (2006). Promoting self-regulation in science education: Metacognition as part of a broader perspective on learning. *Research in Science Education*, 36, 111-139.

Schraw, G. & Moshman, D. (1995). Metacognitive theories. Educational Psychology Review, 7(4), 351-371.

Sfard, A. (1998). On two metaphors for learning and the dangers of choosing just one. *Educational researcher 27*, 4-13.

Shuttleworth, M. (n.d.). *Case Study Research Design*. Retrieved from: https://explorable.com/case-study-research-design.

Soisangwarn, A. & Wongwanich S. (2014). Promoting Reflective Teaching through Peer Coaching to Improve Teaching Skills. *Procedia - Social and Behavioral Sciences*, 116, 25042511. http://dx.doi.org/10.1016/j.sbspro.2014.01.601

Spalding, A. (2020). *How to encourage reflective teaching in your school*. Retrieved from: https://blog.irisconnect.com/uk/blog/5-benefits-of-encouraging-teacher-self-reflection

Splitter, L. J., & Sharp, A. M. (1995). *Teaching for Better Thinking: The Classroom Community of Enquiry*. Melbourne: Acer.

Stenhouse, L. (1975). *An Introduction to Curriculum Research and Development.* London: Heinemann.

Stone, C.A. (1998). The metaphor of scaffolding: Its utility for the field of learning disabilities. *Journal of Learning Disabilities* 31(4), 344-364.

Suherdi, D. (2012a). *Towards the 21st Century English Teacher Education*: an *Indonesian perspective*. Bandung: Celtics Press.

Swarts, P.S. (1998). *The Transformation of Teacher Education in Namibia; The development of reflective practice*. A Thesis submitted in partial fulfilment of the requirements of Oxford Brookes University for the Degree of Doctor of Philosophy.

Syrjala, L. (1996). *The Teacher as a Researcher. In Childhood Education International Perspective*: ed. Eeva Hujala. Finland: Association for childhood education international, Oulu University.

Tabachnic, B. R., & Zeichner, K.M. (1991). I*ssues and Practices in inquiry-oriented teacher education.* London: Falmer Press.

Tahir, S.T & Naqvi, S.M.M.R. (2006). Factors affecting learners' performance. A case of private colleges. *Bangladesh e-journal of Sociology*, 3, 1-10.

Tharp, R.G., & Gallimore, R. (1988). *Rousing minds to life: Teaching, learning and schooling in social context.* New York: Cambridge University Press.

Tomei, L. (2009). *Lexicon of Online and Distance Learning*. Washington DC: Rowman & Littlefield.

Vanderbilt University. (n.d). *Teaching portfolio*. Centre for teaching. Retrieved from: https://cft.vanderbilt.edu/guides-sub-pages/teaching-portfolios/.

Vygotsky, L.S. (1978). *Mind in society: The development of higher mental processes* (in M. Cole, V. John-Steiner, & E. Souberman, Eds.). Cambridge, MA: Harvard University Press.

Vygosky, L. (1962). "*Zone of proximal development focused teaching*" Vygosky's zone of proximal development. Retrieved from: https://www.pinterest.com/pin/522065781774993381/.

Wells, G. (1999). *Dialogic inquiry: Towards a sociocultural practice and theory of education.* Cambridge, UK: Cambridge University Press.

Wenger, E. (1998). *Communities of practice: learning, meaning and identity.* UK: Cambridge University Press.

White, L. (2015). *An exploration of the value of reflective practice for child care and family support service provision.* (Doctoral dissertation), Retrieved from: http://hdl.handle.net.

Whitebread, D., Coltman, P., Pasternak, D. P., Sangster, C., Grau, V., Bingham, S., Almeqdad, Q., & Demetriou, D. (2009). The development of two observational tools for assessing metacognition and self-regulated learning in young learner. *Metacognition and Learning, 4*(1), 63-85.

William, D. (2018). *Embedded formative assessment. (2nd ed.)*. Bloomington. Indiana. Solution Tree Press.

Wolfaardt, W. (2014). *Assessment and Evaluation*. A study guide. Windhoek. University of Namibia (Center for External Studies).

Wood, D., Bruner, J.S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry* 17, 98-100.

Younker, B. A. (2002). Critical thinking. In R. Colwell & C. P. Richardson (Eds.), *The new handbook of research on music learning and teaching* (pp. 162-170). New York, NY: Oxford University Press.

Zeichner, K. H,. & Liston, D.P. (1996). *Reflective Teaching. An introduction.* New Jersey. Lawrence Erlbaum Associates, Inc., Publishers.

Zwozdiak-Myers, P. (2009). *An analysis of the concept reflective practice and an investigation into the development of learner teachers' reflective practice within the context of action research* (Doctoral dissertation), Retrieved from: http://v-scheiner.brunel.ac.uk/bitstream/2438/4316/1/FulltextThesis.pdf.

APPENDICES

APPENDIX A: REFLECTIVE TEACHING CLOSED AND OPEN ENDED QUESTIONNAIRE (RTCOEQ)

The purpose of this instrument is to assess teachers' understanding and the value attached to reflective teaching. Your honest responses to the questionnaire items are highly appreciated. Thank you very much for the time you are devoting to our research project.

****

Years of teaching experience:_____

Gender:_____

Highest degree or certificate: _____

Field of specialization_____

INSTRUCTIONS

This questionnaire has two sections and consists of five printed pages. Please (√) the most appropriate response where options are provided.

SECTION A: REFLECTIVE TEACHING CLOSED - ENDED QUESTIONNAIRE

1. TEACHER / LEARNER ORIENTATION

A. Strongly disagree **B.** Disagree **C.** Undecided **D.** Agree **E.** Strongly agree

In my class I ensure that:

	A	B	C	D	E
Objectives of the lesson are known to the learners.					

Learners are motivated to achieve the stated lesson objectives.					
I identify strategies to achieve the lesson objectives.					
I encourage active participation of learners in the lesson.					
I revise objectives when necessary.					
I monitor the progress of learners towards achieving lesson objectives.					
I ask probing questions when learners are engaged with a challenging task.					
I provide constructive feedback to the learners.					
I use learners' feedback to improve teaching.					
I reflect on interaction in the class.					
I recognise learners' effort to learn.					

2. APPROACH TO TEACHING

A. Strongly disagree **B.** Disagree **C.** Undecided **D.** Agree **E.** Strongly agree

In my class I teach learners how to:

	A	B	C	D	E
Set their own learning goals.					
Identify strategies to achieve their goals.					
Revise their goals when necessary.					
Be motivated to learn.					
Articulate what is exp.ected of them					
Monitor their progress toward achieving their goals.					
Adjust their actions on their own to achieve the goals.					
Modify or adjust strategies that are unsuccessful.					
Use feedback from peers to improve their work.					

Revise version of their work to improve them.					
Reflect on their process of achieving their goal.					
Evaluate their own work.					
Attribute their success to their effort.					
Work well with fellow learners.					

SECTION B: REFLECTIVE TEACHING OPEN - ENDED

QUESTIONNAIRE

1. Do you know the meaning of reflective teaching? Yes ( ) No ( ) If yes, please explain what you understand by this term.

_____

_____

_____

2. Below are some of the methods of applying reflective teaching.

Reflective Journaling	
Recording of lessons	
Peer mentoring	
Learners' feedback	
Teachers portfolio	
Action research	
Reflective supervision	
Others (specify) _____	

2.1 Which reflective teaching method do you use in your classes?

Please tick (√) your answer in the table below.

2.2 Please explain how you use these methods:

_____

_____

_____

3. Are they any challenges that are currently hindering you from effectively conducting reflective teaching? Yes ( ) No ( ). If the answer is yes, please explain.

_____

_____

_____

4. In your own opinion, do you think teachers are well trained to apply reflective teaching in the classroom and beyond? Yes ( ) No ( ).

Support your answer_____

_____

_____

5. Do you think reflective teaching could help improve grade 12 learners' performance in the national NSCCO examinations? Yes ( ) No ( ).

Explain_____

_____

_____

6. In your opinion, are there any differences between experienced and inexperienced teachers in terms of reflective teaching? Yes ( ) No ( ). Which of the two groups of teachers is better of and why?

_____

_____

7. Do you think the assessment can help you to improve your teaching? Yes ( ) No ( ) If yes, in which way?

_____

_____

_____

8. How do you use the results obtained from these assessments in your teaching?

_____

_____

_____

_____

9. What do you do when you identify your personal weaknesses in the teaching profession?

_____

_____

10. Would you like a teachers' guide on reflective teaching? Yes ( ) No ( )

Thank you

APPENDIX B: REFLECTIVE TEACHING LESSON OBSERVATION CHECKLIST (RTLOC)

Field of specialisation:_____Date_____

Respond to each statement using the following scale:

1=Not observed 2=More emphasis recommended 3=Accomplished very well

Organization			
Presented overview of lesson.	1	2	3
Paced lesson appropriately.	1	2	3
Presented topics in logical sequence.	1	2	3
Related today's lesson to previous/future lessons.	1	2	3
Summarized major points of the lesson.	1	2	3
Presentation			
Explained major/minor points with clarity.	1	2	3
Defined unfamiliar terms, concepts, and principles.	1	2	3
Used good examples to clarify points.	1	2	3
Showed all the steps in solutions to homework problems.	1	2	3
Varied explanations for complex or difficult material.	1	2	3
Emphasized important points.	1	2	3
Writes key terms on blackboard or overhead screen.	1	2	3
Integrates materials (examples, cases, simulations) from "real world".	1	2	3
Active, collaborative, and cooperative learning favored over passive learning.			

	1	2	3
Interaction Actively encouraged learners' questions.			
Asked questions to monitor learners understanding.	1	2	3
Waited sufficient time for learners to answer questions.	1	2	3
Listened carefully to learners' questions.	1	2	3
Responded appropriately to learners' questions.	1	2	3
Restated questions and answers when necessary.	1	2	3
Demonstrates respect for diversity and requires similar respect in classroom.	1	2	3
Content Knowledge and Relevance			
Presented material at an appropriate level for learners.			
Presented material appropriate to the purpose of the course.	1	2	3
Demonstrated command of the subject matter.	1	2	3
Reinforcement			
Asked learners to sum up the major learning objectives of the lesson.	1	2	3
Gave a task / homework.	1	2	3

Summary Comments

21. What were the observed major strength of the teachers?

_____

_____

_____

22. What suggestions do you have for improving the teachers' skills or methodology?

_____

_____

_____

23. If this was a repeat observation, what progress did you discern in the teachers' skills?

_____

_____

_____

APPENDIX C: REFLECTIVE TEACHING INTERVIEW SCHEDULE (RTIS)

SECTION A: (FOR TEACHERS ONLY)

1: OBSERVATION SKILL

1.1. Have you ever you used video- and audio-recording, writing, drawing, and photography in your classroom teaching? If yes, what benefits do you see from these practices or tools?

1.2. Do you think it is important to record your classroom teaching? Explain.

1.3. How else do you keep track of what goes on in your class?

1.4. Have you ever assessed your teaching style to check relevancy to learners in your class? Explain how you did this

1.5. In the assessment of your teaching, which one of the following attributes of teaching are assessed and explain why?

Attribute	√	**Reason**
Catch and focus		
Statement of learning objectives		
Teaching method (s)		
Classroom management		
Teaching / learning resources		
Learners' engagement		
Closure of the lesson		

2. COMMUNICATION SKILLS

2.1 How important is communication in teaching?

2.2 In your opinion, how could a teacher communicate successfully with his / her learners?

2.3 Do you think asking about the relevant of your teaching method from your learners can improve your teaching methods?

2.4 Who does the most of the talking in your class, you or the learner?

3. TEAM WORK SKILLS

3.1 Do you work together with other teachers about your teaching? If yes, please explain.

3.2 Do you think team work can support your teaching?

3.3 What benefits do you see for team work?

3.4 Do you have any co-teaching with other teachers? If yes, please explain.

3.5 What are the benefits of co-teaching?

4. JUDGEMENT SKILLS

4. 1 Have you ever thought about evaluating your teaching methods in the classroom? If yes, please explain.

4.2 Have you ever asked yourself about your teaching methods? If yes, what questions do you ask?

4.3 Can you describe the strengths and the weaknesses of your teaching methods?

4.4 What are your suggestions to improve the weakness?

4.5 Do you think evaluation of your teaching methods by your learner and other teachers can help you to improve your teaching method? If yes, please explain how.

4.6 Supposed one of your learners did not finish his/her work, what would you do?

5. DECISION MAKING SKILL

5.1 When you face a problem in the classroom setting, how do you solve the problem, e.g. absenteeism of learners' every time there is a test to be written?

5.2 How do you know and probe the strengths and weakness of your teaching in the class?

5.3 After your teaching have you ever asked to yourself what went well and what did not go so well in your class?

SECTION B: (FOR THE PRINCIPALS ONLY)

1. In your understanding, what is reflective teaching?
2. Do you think reflective teaching could help improve learners' performance?
3. Is reflective teaching encouraged at your school, if yes how so?
4. Have you ever discussed the importance of lesson reflections with teachers?
5. What do you think are the challenges that may hinder successful engagement to reflective teaching?
6. How often do you randomly conduct class visits?

Thank you

APPENDIX D: ETHICAL CLEARANCE CERTIFICATE

UNAM
UNIVERSITY OF NAMIBIA

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: FOE/326/2017 **Date:** 10 October, 2017

This Ethical Clearance Certificate is issued by the University of Namibia Research Ethics Committee (UREC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the Faculty/Centre/Campus Research & Publications Committee sitting with the Postgraduate Studies Committee.

Title of Project: A Study On Grade 12 Teachers' Understanding Of Reflective Teaching And Learners' Performance In The Zambezi Region

Student Name: Limbo Enock Simasiku

Student Number: 200019791

Faculty: Faculty of Education

Supervisor(s): Dr. D. Wolfaardt (Main) Dr J Nyambe (Co)

Take note of the following:

(a) Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the UREC. An application to make amendments may be necessary.
(b) Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the UREC.
(c) The Principal Researcher must report issues of ethical compliance to the UREC (through the Chairperson of the Faculty/Centre/Campus Research & Publications Committee) at the end of the Project or as may be requested by UREC.
(d) The UREC retains the right to:

(i) Withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,
(ii) Request for an ethical compliance report at any point during the course of the research.

UREC wishes you the best in your research.

Prof. P. Odonkor: UREC Chairperson

Ms. P. Claassen: UREC Secretary

APPENDIX E: PERMISSION FROM THE PERMANENT SECRETARY TO CONDUCT THE STUDY AT THE SELECTECT SCHOOL IN ZAMBEZI REGION

REPUBLIC OF NAMIBIA

MINISTRY OF EDUCATION, ARTS AND CULTURE

Tel: +264 61-2933806
Fax: +264 61- 293902
Enquiries: C. Muchila/ G. Mutene
Email: [illegible]

Luther Street, Govt Office Park
Private Bag 13336
Windhoek
Namibia

File no: 11/1/1

Mr. Limbo Enock Simasiku
P.O. Box 98816
Brachbrecht, Windhoek
Cell: 081 292 5902
Email: lesimasiku@unam.na

Dear Mr. Simasiku

SUBJECT: PERMISSION TO CONDUCT RESEARCH IN NAMIBIA

Kindly be informed that permission to conduct research for your PhD Degree in *"A study on Grade 12 Teachers' Understanding of Reflective Teaching and Learners' Performance in the Zambezi Region"* is herewith granted. You are further requested to present the letter of approval to the Regional Director to ensure that research ethics are adhered to and disruption of curriculum delivery is avoided.

Furthermore, we humbly request you to share your research findings with the ministry. You may contact Mr. C. Muchila/ Mr. G. Mutene at the Directorate: Programme and Quality Assurance (PQA) for provision of summary of your research findings.

I wish you the best in conducting your research and I look forward to hearing from you soon.

Sincerely yours

SANET L. STEENKAMP
PERMANENT SECRETARY

Date

All official correspondence must be addressed to the Permanent Secretary

APPENDIX F: CONSENT LETTER TO PARTICIPATING TEACHERS

L.E Simasiku
Box 8816
Bachbrecht
Windihoek
20 October 2017

To:
The Grade 12 teachers
Zambezi Region
Directorate of Education, Arts and Culture
Namibia

Dear Sir / Madam

Re: **Request for participation in a study titled "Grade 12 teachers' understanding of reflective teaching and learners' performance.**

My name is L.E Simasiku, a PhD (Education) student at the University of Namibia. I am required to undertake an academic research study in the field of education as a partial requirement for the fulfilment of the requirements for attaining a PhD in Education (Curriculum Instruction and Assessment Studies).

This study aims at improving the quality of classroom interactions, which in the end should lead to better performance of learners in the NSSCO examination (Zambezi Region). The results of this study will be made available to the regional office and the participating schools in order to help support teachers in their endeavours to improve classroom experience they intend to expose their learners to.

Based on the background above, I humbly request for your participation in this study which will use three tools for data collection namely: Reflective Teaching Closed and Open - ended Questionnaire (RTCOEQ); The Reflective Teaching Lesson Observation Checklist (TRTLOC) and the Reflective Teaching Interview Schedule (RTIS). The data collected will solely be used for the purpose of this study and confidentiality is rest assured as there will be no publication of traces of information that could lead to the identity of the participants.
The researcher is expected to visit the participating schools from the 22 of January 2017 and expected to leave after data collection is completed.

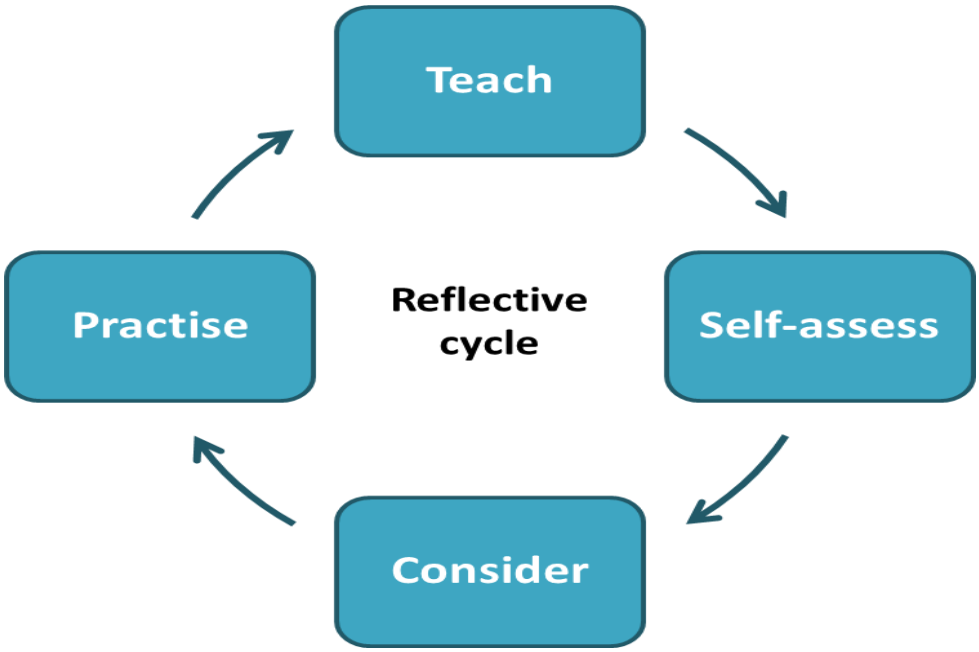
Find attached, the permission letter from the Permanent Secretary's office.

Thank you

_____
L.E Simasiku (0812925902)

APPENDIX G: TEACHER'S GUIDE ON REFLECTIVE TEACHING

REFLECTIVE TEACHING:



A TEACHER'S GUIDE

(The Namibia Context)

Compiled by L.E Simasiku
University of Namibia

TABLE OF CONTENTS

1. Introduction

This guide was compiled in response to a study that was undertaken on teachers' understanding and application of reflective teaching and how it impacts the performance of senior secondary school learners. In this study guide, contextualised methods of reflective teaching are presented in relation to the international methods of reflective teaching. Contextualised methods of reflective teaching fits Namibia (Zambezi Region) because they are costless but effective in yielding data required to improve the teaching learning environment. If things are done the same way all the time, we can always expect the same results. Reflective teaching is a teachers' tool to seek and find dimension of teaching and learning that may require adjustments or re-adjustments.

From time to time it is common to see that what teachers imagine in their classroom differs from the reality that eventually unfolds in the classroom. Inevitability, teachers may face many issues in the classroom environment. For example, a teacher may plan a comprehensive lesson, but the implementation of the lesson may deviate from the initial plan. Then, a teacher may reflect and try to find out what might have gone wrong and seek for solutions to the problem he/ she faced in the classroom. This can be done by observing his/ her classroom, asking his/ her colleagues, or getting learners' feedback directly. It can be said here that the teacher is being reflective, but is it just sufficient to only think what the problem is and find the solution without keeping records on what he/ she is doing? Keeping records on what teachers do may help

teachers to know the strength and weaknesses of their teaching process. Thus, it is important that to be reflective, teachers should be able to keep record of what they have do in their classrooms.

According to Richards (2002) there are six core components of teacher knowledge, namely:

a) ***Practical knowledge***: teacher's knowledge on classroom techniques and strategies.

b) ***Content knowledge***: teacher's understanding of the subject he/ she teaches.

c) ***Contextual knowledge***: teachers' familiarity with the school context, norms, and knowledge of the learners' culture and relevant information.

d) ***Pedagogical knowledge***: teacher's ability to restructure, plan, adapt, and improvise content knowledge.

e) ***Personal knowledge***: teacher's personal beliefs and principles and his/ her individual approach on teaching.

f) ***Reflective knowledge***: teacher's capability to reflect on and assess his/ her own practice in teaching.

Therefore, it is clear that to be a good teacher and professional teacher, one of the requirements is that a teacher should be able to reflect *in / on* his/ her own teaching practice. Richards (2002) also suggests that teachers now need to be given opportunities to engage in self-reflection and evaluation. Nevertheless, professionals can react, examine and evaluate their teaching to make decisions on needed changes to improve attitudes, beliefs, and teaching practices through reflection (Babaei and

Abednia, 2016). In order to do this, she maintained that teachers are forced to look back into their own teaching practices, beliefs, attitudes, goals, as well as those beliefs and attitudes of their learners, their colleagues, and of the teaching community itself. Consequently, reflective teaching requires a commitment, a commitment towards change, towards understanding, and most importantly, a commitment towards continuous self-development. Furthermore, teachers have to develop long-term career goals and develop their roles and responsibilities over time if they are to continue to find teaching rewarding (Richards, 2002). He also mentions that many things can be done to design a context for good teaching, but it is the teachers themselves who initially determine the success of a program.

In the endeavour to assist teachers to become reflective, this guide covers the following content: definition of reflective teaching, cultures of reflective teaching, engaging in reflective teaching, tools for reflective teaching, the importance of reflective teaching, levels of reflective teaching, models of reflective teaching, the guide further distinguishes between reflection ***in*** action and ***on*** action. Finally, the guide provides an activity for teachers on reflective teaching.

2. What is reflective teaching?

Reflective teaching is a process where teachers think over their teaching practices, analysing how something was taught and how the practice might be improved or changed for better learning outcomes (Moon, 2004). Reflective teaching means looking back at what you do in the classroom and giving it a meaning by attaching the

why question to what you go through (Loughran, 2006). Loughran (2006) further asserts that, in the classroom context, reflective teaching would therefore mean collecting data on teaching and learning, organising data, analysing it, presenting it and making informed decisions that lead to better teaching and learning.

3. The importance of reflective teaching

According to the findings of a study that inspired the compilation of this guide, the importance of reflective teaching is rooted in its potential to provide quality feedback that teachers can use to improve the teaching leaning environment in the classroom. Reflecting on performance and acting on reflection as McKay (2008) notes, is a professional imperative for teachers. Self-emancipation is a big indicator that the teacher has put in place a new system, activity, perspective, understanding or approach that frees the educator from past practices. The goal is most often to discover emancipation via critical thinking and action (Holmes, Cockburn-Wootten, Motion, Zorn, & Roper, 2005). Furthermore, the need to reflect on self as a means of self-development is widely endorsed in schools of education globally. "Reflective knowledge has to do with normative states in social, economic and political realms. It concerns a vision of what ought to be" Coghlan (2015).

a) Firstly, the significance of reflective teaching in Namibia is deeply entrenched in its potential for professional growth and efficacy. When teachers are well

vested with reflective teaching skills and knowledge, it is expected that teachers will have the ability to produce desired or intended result.

b) Secondly, after grasping the understanding and the value that teachers have attached to reflective teaching, it can serve as a baseline measure for fostering or shaping a culture of reflectivity with the overall intention of improving the quality of results in the Namibia teaching and learning that takes place.

c) Thirdly, reflective teaching helps teachers to develop a rationale for teaching. A reflective teacher is informed through self-reflection (Moon, 2005).

d) Fourthly, reflective teaching contributes to teachers' empowerment and emancipation. Moon (2005) and Barnett & O'Mahoney (2006) argue that the work of education cannot simply be reduced to mere technical concerns, but that teachers must engage with important moral issues and therefore they need to reflect on their activities. This is in agreement with Bolton (2010) Finlay (2008) who proposed that teachers who engage in reflective teaching are able to examine their ideologies critically and consider the value of their own teaching.

e) Fifthly, reflective teaching ensures that teachers take informed actions in teaching.

According to Zwozdiak-Myers (2009) informed actions are those that can be explained to others. It is through informed decisions that teachers' actions have a chance of achieving the desired results (Zwozdiak-Myers, 2009). Moreover, reflective teaching

incorporates the development of problem solving and reflecting on events to improve decision-making and judgment.

Problem solving and reflecting on events is an important aspect in the teaching profession as Attard & Armour (2006, p.222) clearly states: “Teaching as a profession requires the teacher to go beyond the exercise of craft skills to diagnose problems, evaluate possible responses and adopt a chosen course of action”. Furthermore, teachers should consistently research ways of how to teach learners how to think. This is in line with Dewey (1933) and Tomei (2009) who advocate that, the aim of education is to teach learners how to think, not what to think. This is further supported by Finlay (2008) who claims that the problems of the real world do not present themselves to practitioners on well-formed structures; they present themselves as messy, indeterminate situations.

Moreover, reflective teaching allows practitioners to avoid self-laceration (Finlay, 2008). They learn to stop blaming themselves and turn their attention to understanding the resistance (Finlay, 2008). Reflective teaching is thought to be the right way to follow if teachers are to solve instructional problems in their classrooms. Finally, once reflectivity is fostered it is expected that learners’ performance would inevitably improve as argued by Barnett & O’Mahoney (2006).

4. Traditions of reflective teaching

Reflective teaching may be perceived from multiple traditions that projects the views of teachers on what it is all about. According to Zeichner and Liston (1996, p.51): "there is diversity in the understanding and interpretation of reflective teaching". Five different traditions reflecting teachers' understanding of reflective teaching have been identified as follows by Zeichner & Liston, (1996) and Tabachnick & Zeichner, (1991): The academic tradition; the social efficiency tradition; the developmentalist tradition; the social reconstructionist tradition and the generic tradition. It should be understood that an individual teacher's approach to reflective teaching will most probably not fit snugly or exclusively within any one of these five orientations (Zeichner & Liston, 1996). All traditions of reflective teaching add value to reflective teaching.

4.1 The academic tradition

The academic tradition of reflective teaching stress reflections on subject matter and the representation and translation of subject matter knowledge to promote learner understanding (Zeichner & Liston, 1996). Here the teacher is more concerned about the content of what is taught. The advocates of this tradition argued that, all that teachers needed to do to acquire expertise was to take a lot of subject matter courses in their preparation programs. Critics of this tradition such as Lee Shulman of Stanford University and a group of researchers on teacher learning at Michigan State University have rightfully demonstrated that simply acquiring content knowledge as it is taught in most universities, is not adequate preparation for being able to teach.

4.2 The social efficiency tradition

The social efficiency tradition of reflective teaching emphasises faith in the scientific study of teaching to provide a basis for teaching expertise (Zeichner & Liston, 1996). Those who advocate for this orientation state that, teachers should focus their reflection on how well their own practice match what research says they should be doing. The assumption here is that research on teaching has generated a body of knowledge that can provide guidance to teachers. Sharon Feiman-Nemser (1990) identified two different strands within the social efficiency tradition: a technical strand that attempts to get teachers to closely follow what research says they should be doing and a deliberative strand in which the findings of research are used as one amongst many sources by teachers in solving problems.

4.3 The developmentalist tradition

The developmentalist tradition of reflective teaching puts emphasis on reflections about learners, their cultural and linguistic background, thinking and understanding, their interests and their developmental readiness for particular tasks (Zeichner & Liston, 1996). The distinguishing characteristic of this tradition is the assumption that the natural development of learners provides the basis for determining what should be taught to learners and how it should be taught (Zeichner & Liston, 1996). The developmental tradition of reflective teaching has become increasingly popular in recent years with the growing influence of cognitive psychology in education.

4.4 The social reconstructionist

The social constructionist tradition of reflective teaching is viewed as a political act that either contributes toward or hinders the realisation of a more just and humane society (Kemmies 1985). In this tradition, the teacher focuses both on his practice and on the social conditions in which these practices are situated. It recognises that instruction is embedded within instructional, cultural, and political contexts and that these contexts both affect what we do and are affected by what we do (Zeichner & Liston, 1996). They further stated that the social constructionist tradition is democratic and emancipatory. The focus of the teacher is on the issues that help them examine the social and political consequences of their teaching. It is further chatacterised by being a social practice. Here the emphasis is on creating communities of learning where teachers can support and sustain each other's growth.

4.5 The generic tradition

The generic tradition of reflective teaching encourages teachers to reflect on their teaching in general. This tradition of reflective teaching is guided by the belief that teachers' actions are necessarily better just because they are more deliberate and intentional (Zeichner & Liston, 1996). "Teacher educators have argued that teachers need to become more reflective about their work, without at all addressing the issues of content, quality and context of teacher's reflections" (Zeichner & Liston, 1996, p.62).

According to Zeichner & Liston (1996) the critiques of the generic tradition of reflective teaching have argued that, this kind of encouragement to teachers to reflect

without identifying the things that teachers should reflect about or the quality of the reflection they should aim for, seems to lack both substance and direction.

Zeichner (1996) further states that none of the above traditions alone is sufficient as a moral basis for teaching. Good teaching needs to attend to all of the elements that are highlighted by the various traditions.

5. Engaging in reflective teaching

There are multiple methods of engaging in reflective teaching. The key element to any chosen method of reflection is to yield information that may be used to improve curricula and the quality of learning. A study that was undertaken on the challenges faced by teachers in their endeavour to apply reflective teaching indicated that teachers did not have tools required to successfully engage in reflective teaching. This guide provides contextualised methods that do not require sophisticated tool for reflective teaching. A teacher can observe practices by taking self-assessments, keeping a journal, or creating a reflective process that can be done after each unit. Teachers can improve their effectiveness in the classroom by understanding their own teaching style and building upon it, using the reflective practice. The eventual intent of reflective teaching is to get learners accustomed to reflecting on their own actions and creating meaning from those experiences. When they develop the customs of awareness related to reflection, they will hear both an internal and an external voice of reflection.

Zwozdiak-Myers (2009) recommended the following as methods of engaging in reflective teaching: reflective journaling, peer mentoring, video/audio recording of lessons, teachers' portfolio. Additionally, action research and reflective supervision are central methods of reflective teaching as suggested by Coghlan (2015) and Parlakian (2001) respectively. Below are the suggested methods of engaging in reflective teaching:

5.1 Reflective Journaling

In this method, a teacher simply needs an exercise book where recordings of all activities of the lesson planning and presentation are kept. A teaching journal is a form of diary of teaching experiences that aids personal teaching reflections (Zwozdiak-Myers, 2009). A teacher needs to keep record of experiences as they transpire. It has to be done consistently if the information will be of any worth. It is an activity whereby the teacher takes note of the situation he/she is undergoing. Generally, a reflective journal requires a teacher to map the progress and changes in thinking about a subject or a topic, or about the learning journey in which he/she is engaged (Royal Melbourne Institute of Technology, 2009). The teacher needs to make regular entries in a journal (over a period of time), which would then have to be submitted and assessed. Moreover, the teacher needs to use the reflections built up over a period of time as the basis of an essay or a report on self-professional growth (Royal Melbourne Institute of Technology, 2009). When writing a reflective journal, Royal Melbourne Institute of Technology (2009) advocates the following:

Table 5.1: Adapted: Events and experiences to consider when writing a journal (Royal Melbourne Institute of Technology, 2009)

Events and experience	Interpretation and evaluation of the events from own perspective
What did I do/hear/see?	Interpret and evaluate the events from your perspective.
What do I think about it now?	Explain your experience; reveal your new insights.
How does it relate to other things that I know?	Connections with other learning, your hypotheses and your conclusions.
What questions do I have?	Reflect on how this information will be useful to you.
Have I changed how I think about the situation?	Introspection on self-thoughts regarding the situation.
Where do I go from here?	Looking into the future on the basis of the judgement regarding the situation.

Table 5.2 Template for a reflective teaching journal

School		**Subject**		**Date**		**Term**	
Teacher		**Grade**		**Time**		**Topic**	
Learning objective(S)							
Basic Competencies							
Core elements	**Inadequate**		**Require improvement**		**Good**		**Outstanding**
Catch and focus							
Teaching method							
Pace							
Assessment							
Use of Integrated Media and Technology (IMT)							

What worked well and how did this impact on learning?
What didn't work so well and how did this impact on learning?
Were the lesson objectives met?

If you had the opportunity to teach this lesson to the same group of learners, what would you do differently and why?

The content of table 5.2 above is in line with Darling-Hammond & Bransford (2005) who stated that journal keeping is one of the methods used to promote teachers' development of reflective teaching. Darling-Hammond & Bransford (2005) further argued that writing engages you in a deeper level of awareness and response to teaching than you would obtain by merely discussing teaching in terms of teaching procedures and lesson plans.

5.2 Peer Mentoring

Table 5.3 Template peer mentoring in the teaching profession

Subject_____ **Date**_____ **Teacher**_____ **Mentor**	
Check parts of the lesson that were observed.	Notes
Introduction phase Check attributes observed [ ] Introduction directly speaks to the learning targets. [ ] Capture the interests of learners. [ ] Connects to prior knowledge of the Learners. [ ] All learners are paying attention	
Learning and teaching phase [ ] Check attributes observed [ ] Clear, explicit procedures / explanations [ ] Modeled and exemplary work [ ] Clear and effective use of vocabulary [ ] Presents contents in a logical and appealing way. [ ] All learners are attentive and participative [ ] There is high interaction between the teacher and learners as well as among learners. [ ] Formative assessment takes place. e.g class activity, oral questions.	
Closure [ ] A summary of the lesson [ ] All learners have a fair chance to answer questions relating to the lesson objectives. [ ] The teacher reinforce content by giving a home work.	

Once again, peer mentoring takes form in which a teacher observes a mentor's practice or the mentor observes the teacher's practice and a record is kept for feedback purposes. In his narration of peer mentoring, Bell (2002) states that peer observation is a form of peer review within teaching; a partnership in which colleagues observe each other's practice, provide feedback and engage in a discussion aimed to promote reflection. Other objectives include the identification of strengths and developmental needs, and the formulation of an action plan for further improvement (Hammersley-Fletcher and Orsmond, 2005). Depending on the wishes of the person being observed, feedback may focus on general performance or more specifically on teaching and learning strategies, assessment or the achievement of learning outcomes (Hatzipanagos and Lygo-Baker, 2006).

A further observation can be used to assess whether intended improvements have been achieved. The process has potential benefit for both parties, since observers may incorporate observed good practice into their own teaching (Bell, 2002). There are no costs involved in inviting a colleague to observe another colleague's lesson presentation with the objective of providing feeding on different aspects of the lesson presentation.

5.3 Video/Audio Recording of lessons

Recording of lessons through either audio or video devices or even by use of paper and pencil is a vital process for reflective teachers. For instance, teachers can use a

tape recorder to keep record of the types of questions learners pose during a lesson. In the Namibian schools where video and audio recorders may be scarcely available, teachers my use their cellular phones to capture either a video or audio of the lesson presentation for reflection purposes. These recorded experiences become the focus of what to reflect upon. Teacher education researchers suggest video/audio-cases can give teacher educators a tool with which to challenge teachers' assumptions and help them to critically examine their beliefs and values about teaching and learning (Bailey, 2000; Boling, 2007). By examining our foundational beliefs through conversation with our peers in the context of what video/audio-case studies can provide, teachers learn, as Paul (1993) suggests, not just *what* to think but also *how* and *why* to think. Abell, Brain and Anderson (1998, p.505) found that "video/audio-cases helped uncover inconsistencies in teachers' thinking and concluded that case studies caused teachers to question previously held assumptions and theories". Such findings support Younker's (2002) writing on the value of funded experience in a group setting to inspire reflective thinking. Similarly, Boling (2007) indicated that viewing and discussing video/audio-cases encouraged teachers to reflect on their prior experiences and examine their assumptions and beliefs. By viewing instances of teaching that differed from their own personal experiences, teachers began to consider alternative points of view and problematize previously unquestioned beliefs.

Video or audio recordings of lessons can provide very useful information for reflection. You may do things in class you are not aware of or there may be things happening in the class that as the teacher you do not normally see.Audio recordings can be useful for considering aspects of teacher talk.

Table 5.3 A template for reflecting on the audio recording

Attribute	**Answer**	**Comment**
How much do you talk?		
What about?		
Are instructions and explanations clear?		
How much time do you allocate to learner talk?		
How do you respond to learner talk?		
Video recordings can be useful in showing you aspects of your own behaviour.		
Where do you stand?		
Who do you speak to?		
How do you come across to the learners?		
How do you come across to the learners?		

5.4 Learners' feedback

Table 5.4 A template for learner / teacher evaluation

Grade **_____** ***Subject*****_____** ***Date of evaluation*****_____**
INTRODUCTION
Rate on the scale of 1 to 5. 5 being the highest. The teacher greats the class. [1] [2] [3] [4] [5] The teacher introduces the topic of the day. [1] [2] [3] [4] [5] The teacher catches the learners' attention from the beginning of the lesson. [1] [2] [3] [4] [5] The teacher clearly states the lesson objectives. [1] [2] [3] [4] [5] The teacher asks for your pre-knowledge on the topic to be taught. [1] [2] [3] [4] [5]
LEARNING / TEACHING PHASE

Rate on the scale of 1 to 5. 5 being the highest.   Content taught in an interesting way. [1] [2] [3] [4] [5]   Clarity of the content taught. [1] [2] [3] [4] [5]   Involvement of learners actively in the lesson. [1] [2] [3] [4] [5]   The teacher's vocabulary. [1] [2] [3] [4] [5]   Create opportunities for learners to ask questions. [1] [2] [3] [4] [5]   The teacher's use learning / teaching aids. [1] [2] [3] [4] [5]   Gives learning activities. [1] [2] [3] [4] [5]
CLOSURE
Rate on the scale of 1 to 5. 5 being the highest.   Asked learner to summarise the major learning objectives of the lesson. [1] [2] [3] [4] [5]   Gives home work. [1] [2] [3] [4] [5]   Any general comments on his / her teaching.   _____   _____

Feedback from learners can be obtained through ordinary questioning. It may be advanced by giving them questionnaires or interviewing them. Their responses become data gathered on their perspectives towards the quality of teaching and learning in the classroom. In the study guide titled ‘‘Assessment and Evaluation’’ Wolfaardt (2014) argues that learners' perceptions of learning experience in class is sometimes the most direct way to weigh the effectiveness of teaching methods. What learners perceive and experience in the class directly determines how effectively they are learning. Collecting learners' perception of teaching should be carried out several times in the term, to allow opportunities to correct poor practices rather than leaving till the end of the term (Wolfaardt, 2014). Two common modes of collecting information about learners' perceptions towards teaching are questionnaires and

interviews, though at times teachers may use cards with specific questios to collect learners' views on the quality of teaching and learning.

5.5 Teachers' Portfolio

Portfolios provide documented evidence of teaching from a variety of sources, not just learners' ratings but it also provides context for that evidence (Vanderbilt University, n.d). The process of selecting and organizing material for a portfolio can help one reflect on and improve one's teaching. Portfolios are a step toward a more public, professional view of teaching as a scholarly activity. Portfolios can offer a look at development over time, helping one see teaching as an ongoing process of inquiry, experimentation and reflection. Teaching portfolios capture evidence of one's entire teaching career, in contrast to what are called course portfolios that only capture evidence related to a single course. Portfolios are costless and teachers may use their creativity to reuse old materials to create a file for their teaching portifolio.

5.6 Action Research

Action research is viewed as some sort of reflective process of progressive problem solving. It is a systematic, reflective study of a teacher's actions and the effects of these actions in a school or classroom context Coghlan (2015).

Figure 6.1: Adapted. Action research cycle Coghlan (2015)

An idea that is most popular to the various interpretations of action research is that research strategies of social science can be used to solve social practice. In his definition of action research Fullan (2007), for instance defined action research as "the study of social situation with a view to improve the quality within it" (p.69). In their contribution to the definition of action research, Burns (2015); Hong and Lawrence (2011) and Coghlan (2015) stated that, action research is a form of self-reflective inquiry undertaken by participants in social situations in order to improve rationality and justice of their own social, educational practice, their understanding of these practices and the situation in which practices are carried out. Hong and Lawrence (2011) and Coghlan (2015) further point out that action research can be carried out individually, by groups of teachers, or by teachers in collaboration with academic researchers. It can therefore be concluded that action research includes data collection and data analysis on teaching and learning in the classroom for the purpose of advancing quality teaching and learning. Furthermore, action research can be viewed as a tool of curriculum development consisting of continuous feedback that targets

specific problems in particular school settings (National Institute for Educational Development [NIED], 2005).

5.7 Reflective supervision

Table 5.5 A reflective supervision template

Name of the teacher_____Date_____
Supervisor's name_____Subject_____

This approach expands on the idea that supervision is a context for learning and professional development (Parlakian, 2001). Reflection in a supervisory relationship

Attributes	**Yes**	**No**	**Comment**
(Tick in the appropriate box. Yes or No).			
The teacher encourages learners to participate.			
Does the teacher use intercommunication skills e.g eye contact, smiling, gestures.			
Does the teacher demonstrate being a good listener.			
Is the classroom properly arranged to ensure access to all learners.			
Does the teacher exhibit professional standards of teachers in Namibia .e.g Professional knowledge, professional practice, professional relationship and professional values.			

requires a foundation of honesty and trust. Parlakian (2001) further states that the goal of reflective supervision is to create an environment in which people do their best thinking one characterized by safety, calmness, and support. Generally, supervisees (teachers) meet with supervisors (principal or head of department) on a regular basis, providing material (like notes from class visits, videos, verbal reports, etc.) that will

help stimulate a dialogue about the work. As a team, supervisor and supervisee explore the range of emotions (positive and negative) related to teaching and learning which the supervisee is managing. As a team, they work to understand and identify appropriate next steps.

Reflective supervision is not therapy, it is focused on experiences, thoughts, and feelings directly connected with the work (Parlakian, 2001*)*. Reflective supervision is characterized by active listening and thoughtful questioning by both parties. The role of the supervisor (principal or head of department) is to help the supervisee (teacher) to answer his/her own questions and to provide the support and knowledge necessary to guide decision-making. In addition, the supervisor provides an empathetic, nonjudgmental ear to the supervisee. Working through complex emotions in a "safe place" allows the supervisee to manage the stress s/he experiences on the job. It also allows the supervisee to experience the very sort of relationship that they are is expected to provide for learners in the classroom (Parlakian, 2001).

Supervisors can also support staff's professional development by using supervisory meetings as an opportunity to scaffold, or support the acquisition of new knowledge. One way of doing this, is to encourage supervisees to analyze their own work and its implications. Reflection is important because it empowers staff to assess their own performance ***(***Parlakian, 2001). Awareness of one's strengths, as well as one's weaknesses and vulnerabilities, allows individuals to make mid-course corrections in work performance that feel natural, unforced, and generated from within.

Reflective supervision differs from peer mentoring in that, under reflective supervision the process of reflection occurs between a superordinate and a subordinate. Peer mentoring is a form of reflection that takes place within peers or members of the same status quo in a set up.

5.8 feedback box

The findings of a study that informed the compilation of this guide revealed that teacher lacked the tools required to implement reflective teaching in the classroom. A feedback box offers a costless option that may provide teachers with vital information needed to improve the teaching learning environment. Learners may anonymously drop comments that reflects their experiences in the classroom. Teachers may therefore collect the feedback, organise, analyse and present the information to aid their classroom decision making.

6. What to do next?

Once you have some information recorded about what goes on in your classroom, what do you do?

a) Think

Having detected patterns arising in your teaching through your observation, you may also have detected things that you were previously oblivious of. You may have been astonished by some of your learners' feedback. Think through all that and generate ideas to implement for changes.

b)Talk

When you talk about what you have learned to a supportive colleague or even a friend, you may be able to come up with some ideas on how to do things differently.

If you have colleagues who also wish to advance their teaching using reflection as a tool, you can meet to discuss issues. Discussions can be based around scenarios from your own classes.

Using a list of statements about teaching beliefs (for example, pair work is a valuable activity in the language class or lexis is more important than grammar) you can discuss which ones you agree or disagree with, and which ones are reflected in your own teaching giving evidence from your self-observation.

c) ***Read***

A decision can be taken that you need to discover more about a certain areas of teaching. There are a lot of websites for teachers where materials for useful teaching ideas or more academic articles. Magazines for teachers may also host a wide range of websites where articles on a variety of topics can be found. Libraries or bookshops may also provide plenty of books for teachers to use.

d) Ask

You may ask questions through websites or magazines to get ideas from other teachers. Teachers' association or other teacher clusters may be requested to arrange for in-service training, ask for a session on an area that interests you.

Reflective teaching is a cyclical process, because once you start to implement changes, then the reflective and evaluative cycle begins again.

- What are you doing?
- Why are you doing it?
- How effective is it?
- How are the learners responding?
- How can you improve?

As a result of your reflection you may decide to do something in a different way, or you may just decide that what you are doing is the best way. And that is what professional development is all about (Tice, 2004).

7. Types of reflections

As mentioned earlier, there are several definitions of reflection and reflective teaching in the field of education. Some of the definitions do not take social influence into consideration, and others included the influence of the social political context of the teaching process as well as the schools and communities in which teaching occurs. Also, some educators say that teachers should reflect only in their classroom whereas other educators say that teachers should reflect inside and outside of the classroom. So it would be acceptable to find many types of reflection depending on points of view of different educators.

Farrell (2004) concentrates on the actions of teachers towards their classrooms, so he puts some types of reflection as follows:

7.1 Anticipatory Reflection

Allows a teacher to plan, decide a course of action and anticipate future consequences of the actions.

7.2 Active or Interactive Reflection

Allows a teacher to make immediate decisions during class as events unfold.

7.3 Recollective Reflection

Allows a teacher to make sense of past experiences and give new, deeper insight into the meaning of those experiences.

7.4 Descriptive Reflection

Involves describing a situation or problem.

7.5 Comparative Reflection

Involves thinking regarding the situation from different perspectives. Teachers try to solve a problem while also questioning their values and beliefs.

7.6 Critical Reflection

Involves teachers looking at all the different perspectives of a situation or problem and at all of the players involved: teachers, learners, the school and the community.

7.7 Reflection-in-action

Making decisions about events in the classroom as they happen. This practice requires that the teachers employ a kind of knowing-in-action. This action triggers spontaneousness, which means routine responses.

7.8 Reflection-on-action

"Thinking regarding one's teaching after the class, giving reasons for one's actions and behaviour in class. This type involves thinking back on what was done to discover knowing-in-action, may have caused an unexpected action" (Farrell, 2004, p. 28). Teachers in this type reflect on their actions after they have finished teaching classes.

7.9 Reflection for Action

It is a proactive thinking in order to guide future action. This type is different from the previous types of reflection in that it is proactive in nature. It is the desired outcome of both previous types of reflection. "It guides teachers to future actions. Teachers can prepare for the future by using knowledge from what happened during class and what they reflected on after class" (Farrell, 2004 p. 28).

7.10 Action Research

Investigating in detail one topic related to one's classroom teaching. Action research and reflective teaching practice are closely connected. Action research is one answer to the problematic reality that teachers' voices are absent from the research literature on teaching. Teachers should be professional thinkers who can pose and solve problems according to their educational practice. They can do that by entering into a reflective cycle See below:

Figure 6.1 Kolb's reflective learning cycle. Retrieved from:

(http://skillsforlearning.leedsbeckett.ac.uk/preview/content/models/02.shtml)

8. Levels of reflective teaching

Once teachers have chosen a particular type of reflection, the next step or question to ask is: To what extent do or should I reflect? Farrell (2004) asserts that educators split reflective practice into three hierarchical levels as follows:

Level 1: Action in the classroom. When teachers plan at this level, they are concerned only with what they do in their classrooms. ***Level 2***: Involves analysing the reasons for the actions taken. It is also called reflection at contextual level, what teachers focus on the theory behind their classroom practices. They can then look into alternative practices they might prefer to use depending on their learners' needs. ***Level 3***: Encourages teachers to justify the work they do and reflect within the broader context of society.

Farrell (2004) further states that other educators mentioned the same levels, but gave them different names, such as:

8.1. Technical rationality

At this level, teachers focus on their personal behaviour and skills within the classrooms. The teacher considers only the technical application of educational knowledge and basic curriculum principles for the purpose of attaining the desired objectives. Here the teacher ignores the effects of the community, school, classroom and the entire society on learning. Retrieved from: (htt://orgonstate.edu/instruct/ed555/zone1/reflect.htm). This level is called the empirical paradigm and is considered to be the lower level of reflection. At the Technical Level, reflection focuses on what you are doing. It may address the quality of practice independent of its effects, though often what prompts reflection about practice is the effect, or lack of effect on learners. For example, “I thought that those adaptations I made for my learners in the math class for today's lesson were exactly what they needed…I wonder why it didn't work very well” Retrieved from: (htt://orgonstate.edu/instruct/ed555/zone1/reflect.htm).

8.2. Reflection at contextual or practical plan

When teachers focus on the theory behind their classroom practices, they can then look into alternative practices they might prefer to use, depending on the needs of their learners. At this level, the teacher becomes concerned with clarifying assumptions and predispositions underlying competing pedagogical goals while assessing the educational consequences towards which teaching action leads. In this level, the teachers analyse the lesson to see how the objectives of the lesson are met.

Reflection at the practical level concentrates on the relationship between some situations and the actions of the teacher and others. That is, cause and effect relationships that include the teacher and learners, but also include the broader classroom, programme, and school or community context. For example, “My reaction to Fripong`s behaviour was effective yesterday. I know that today's behaviour had the same underlying cause, but I did not react well today. I wonder what else was going on that made the difference? Retrieved from:

(htt://orgonstate.edu/instruct/ed555/zone1/reflect.htm).

8.3. Critical or dialectical reflection

This level refers to a situation when teachers focus on the moral, ethical and social issues associated with their practice. It may be possible for teachers to reflect on different levels at the same time, depending on the topic of reflection. Some new teachers may find themselves reflecting at Level 1 (the level of action, technical rationality) because they may not have enough experience to reflect at Level 2 (contextual level) or Level 3 (Critical level).

At critical or dialectical reflection level, the educators are concerned with the worth of knowledge and social circumstances useful to learners without distortions or personal bias. Critical reflection is viewed as a non-defensive stance in remaining open-minded to moral and ethical considerations to educational processes. At the Critical Level, reflection goes deeper and broader, outside the individual, and may focus on such things as commitment to social justice. These levels are developmental, and not everyone will progress through the levels to reach critical reflection. At the critical

level of reflection, the following reflective questions adapted from: (http://orgonstate.edu/instruct/ed555/zone1/reflect.htm) need to be addressed in order to aid the teacher about self-evaluation:

a) What were the essential strengths of the lesson? In the collaborative model of reflective practice, it is especially necessary for the colleague who is observing the other colleague's lesson presentation in order to establish the strength of the presentation and to ensure effective teaching.
b) What, if anything, would you change about the lesson? This question is crucial in the process of reflective practice; the practitioner always wants to find out better ways of presenting the task such that is easier for everyone to comprehend.
c) Do you think the lesson was successful? Why? The success of the lesson is measured by the extent to which the desired objectives of the lesson are attained. If the objectives of the lesson are partially achieved, the teacher needs to be critically analytical in the diagnosis of the potential variables that may have hampered the total attainment of the desired lesson objectives.
d) Which conditions were important to the outcome? During the diagnosis of the variables that may have hindered the total attainment of the lesson objectives, the teacher should also determine the condition that would have been necessary to accomplish the lesson objectives successfully.
e) What, if any, unanticipated learning outcomes resulted from the lesson? The teacher should be well prepared to deal with misconceptions, be vigilant about

unanticipated outcomes in order to have more control towards the achievement of the desired objectives.

f) Can you think of another way you might have taught this lesson? A reflective teacher should always think about different ways of teaching the lesson in order to appeal to a wide variety of abilities of learners.

g) Can you think of other pedagogical approaches to teaching this lesson that might improve the learning process? The main idea is to improve teaching and learning. The teacher should consistently upgrade pedagogies in order to teach effectively.

h) Do you think the content covered was important to learners? Why? The content delivered in every lesson should be of significant importance to learners. If the lesson taught holds no significant value in the learner's life, the learner may be reluctant to learn.

i) What moral or ethical concerns occurred as a result of the lesson? Learning should address the three main domains of learning; the psychomotor, the cognitive and the affective domain. Morals and ethical concerns fall under the affective domain. Reflective teachers should creatively find and incorporate morals and ethics in their lessons. Level Three (critical reflection) is said to be the highest level of reflection. The questions above need to be considered by the person engaging in reflective practice at the critical level in order to aid effective self-evaluation.

9. Models of reflective teaching

A model is something used as an example to follow or imitate (Henderson, 2001). Reflective teaching is an inquiry approach that emphasizes an ethic of care, a

constructivist approach to teaching, and creative problem solving (Henderson, 2001). A reflective teaching model can therefore be defined as an example of an inquiry approach that emphasises ethics of care, constructivist teaching and creative problem solving that teachers may follow or imitate in teaching.

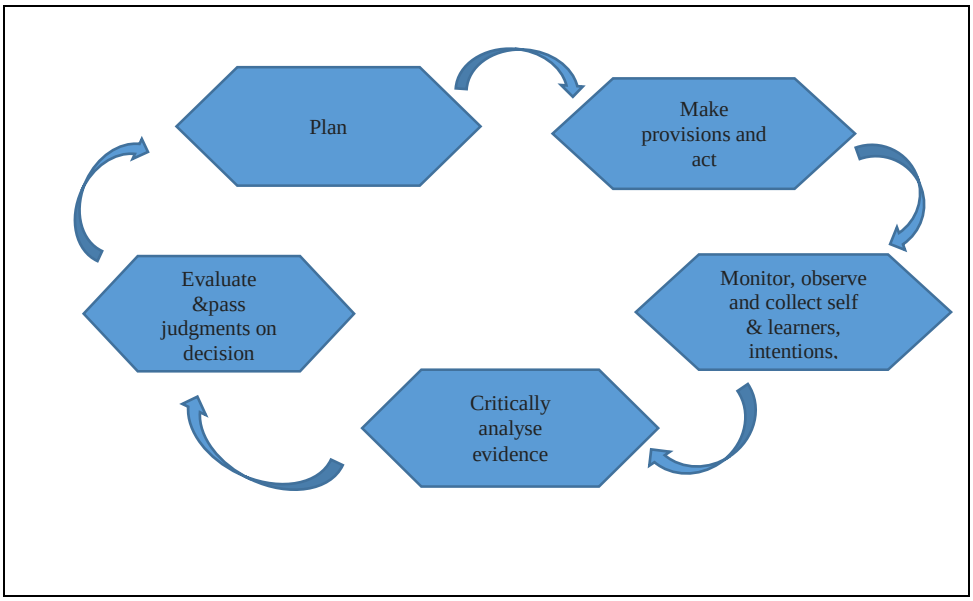
In this guide the following models of reflective teaching are expounded: Lawrence Stenhouse (1975)'s model of reflective practice, Kolb (1984)'s learning cycle model, Gibbs (1988)'s reflective cycle model, Syrjala (1996)'s collaborative model of reflective practice and Mathos, Tullier, and Nevalga (2010)'s model of reflective teaching.

9.1 Lawrence Stenhouse (1975)'s model of reflective teaching

This model provides a dynamic basis for teacher's actions. Teachers should act as researchers of their own practice and should develop the curriculum through practical enquiry (Stenhouse, 1975). Teachers are principally expected to plan, to make provisions and to act. Reflective teachers also need to monitor, observe and collect data on their own and on the learners' intentions, actions and feelings. This evidence needs to be critically analysed and evaluated so that it can be shared, judgments made and decisions taken (Stenhouse, 1975; Kolb, 1984 & Dewey, 1933).

Stenhouse states that, reflective practice is a dynamic process which is intended to lead through successive cycles, or through a spiraling process towards higher-quality teaching.

Figure 9.1 Lawrence Stenhouse (1975)'s model of reflective teaching (Adapted)

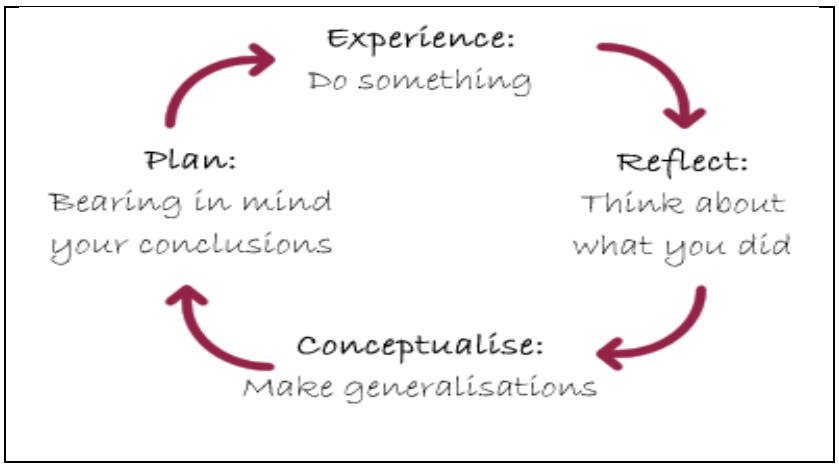


This model is in line with the notion of reflective teaching, as described by Dewey, and provides an essential clarification of the procedures for reflective practice.

9.2 *Kolb's learning cycle model*

Figure 9.2 shows Kolb's learning cycle model: adapted from Kolb (n.d)

(http://skillsforlearning.leedsbeckett.ac.uk/preview/content/models/02.shtml)



Stage 1: Experience - Concrete experiences

Life is full of experiences we can learn from. Whether at home or at work or out and about, there are countless opportunities for us to 'kick-start' the learning cycle. In this context teachers need to reflect on their teaching, irrespective of the teaching experience.

Stage 2: Reflect - Reflective observation

Reflection involves thinking about what we have done and experienced. Some people are naturally good at this. Others train themselves to be more deliberate about reviewing their experiences and recording them.

Stage 3: Conceptualise - Abstract conceptualization

When we pass from thinking about our experiences to interpreting them we enter into the realm of what Kolb (1984) termed 'conceptualization'. To conceptualize is to generate a hypothesis about the meaning of our experiences.

Stage 4: Plan - Active experimentation

In the active experimentation stage of the learning cycle we effectively 'test' the hypotheses we have adopted. Our new experiences will either support or challenge these hypotheses. To learn from our experiences, it is not sufficient just to have them. This will only take us into Stage 1 of the cycle. Any experience has the potential to yield learning, but only if we pass through all Kolb's stages by reflecting on our experiences, interpreting them and testing our interpretations.

Summing up, learning from our experiences involves the key element of reflection. Obviously, most people don't theorize about their learning in this way, but in their learning they follow Kolb's cycle without knowing it.

9.3 Gibbs (1988)'s reflective cycle model

Gibbs' model is an effective tool to help the teacher reflect after the experience, and is a useful model if the teacher is new to reflection as it is broken down into the following clearly defined sections:

a. Description

In this section, the teacher should clearly outline the experience. This needs to be a factual account of what happened in the classroom. It should not be analytical at this stage.

b. Feelings

This section encourages the teacher to explore any thoughts or feelings they had at the time of the event. Here the teacher should explain feelings and give examples which directly reference the teaching experience. It is important that the teacher is honest

with how they feel, even if these feelings might be negative. Only once the feelings have been identified can the teacher implement strategies to overcome these barriers.

c. Evaluation

The evaluation section gives the opportunity for the teacher to discuss what went well and analyse practice. It is also important to consider areas needed for development and things that did not work out as initially planned. This evaluation should consider both the teacher's learning and the learners' learning.

d. Analysis

This section is where the teacher makes sense of the experience. They consider what might have helped the learning or hindered it. It is in this stage that the teacher refers to any relevant literature or research to help make sense of the experience. For example, if you felt the instructions you gave were not clear, you could consult educational research on how to communicate effectively.

e. Conclusion

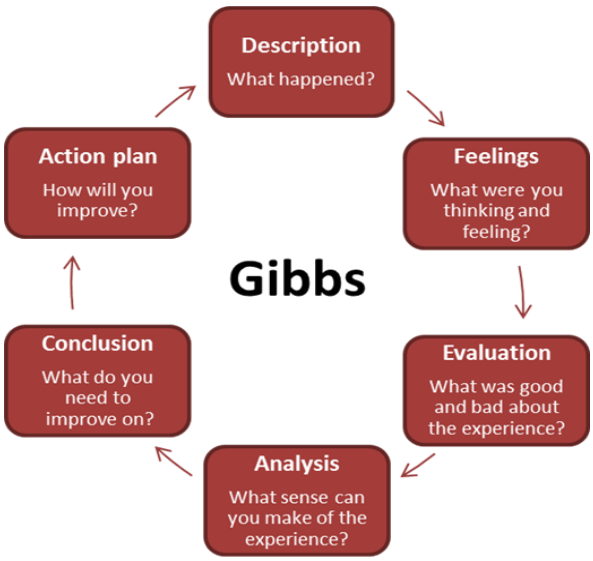
At this stage, the teacher draws all the ideas together. They should now understand what they need to improve on and have some ideas on how to do this, based on their wider research.

f. Action plan

During this final stage, the teacher sums up all previous elements of this cycle. They create a step-by-step plan for the new learning experience. The teacher identifies what they will keep, what they will develop and what they will do differently. The action plan might also outline the next steps needed to overcome any barriers, for example enrolling on a course or observing another colleague. In Gibbs' model the first three

sections are concerned with what happened. The final three sections relate to making sense of the experience and how you, as the teacher, can improve on the situation.

Figure 9.4 Gibbs reflective cycle: adapted from Gibbs (1988).



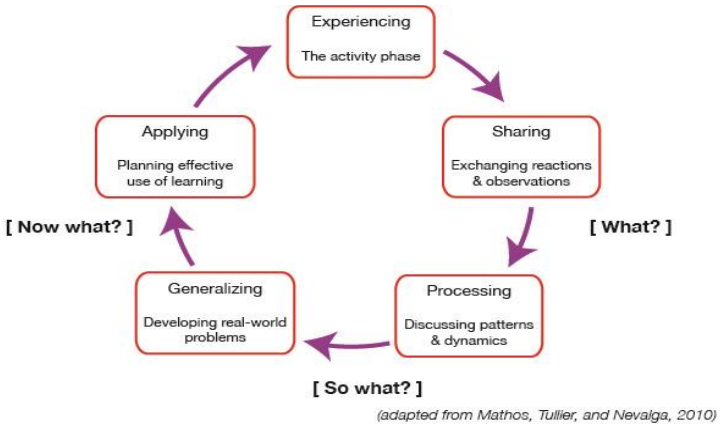
9.4 Syrjala (1996)'s collaborative model of reflective teaching

Under the collaborative model of reflective teaching, two or more colleagues are expected to observe each other's way of teaching with the ultimate purpose of identifying and improving weaknesses in their teaching. This allows two or more teachers to critically analyse their teaching with the purpose of improving efficacy (Syrjala, 1996). Syrjala (1996) further contends that the reflective teacher simply analyses lessons in order to increase teacher control over variables that can affect learning.

Syrjala (1996)'s model of collaborative reflective teaching is further supported by Brookfield (2017) who contends that, to see practice from the perspective of a colleague, a colleague observes the practitioner and provides critical feedback and engages in critical conversations with the practitioner. This shows that reflective teaching is much like action research in that the teacher selects a problem to study, collects the necessary data and analyses the data to improve his/her performance by directly studying the work.

9.5 Mathos, Tullier, and Nevalga (2010)'s model of reflective teaching

Figure 9.5 A model of reflective teaching (adapted from Mathos, Tullelier and Nevalga, 2010).



Deepest learning occurs with reflections that are part of a reflective classroom environment, rather than just a reflective component that has little relation or effect on the other components of a class. As Dewey (1933) observed, we do not learn from

experience so much as we learn from reflecting on experience. It is reflection that connects theory to practice and generates the breakthrough moments that bring learning to the next level.

In their recitations, Stenhouse (1975); Kolb (n.d); Gibbs (1988); Syrjala (1996); Mathos, Tullier & Nevalg (2010) harmonise that reflection comes in many forms, including writing, telling (presentations and discussions), responding (to peers or materials relating to issues being reflected upon), and doing (culminating projects). The various forms of reflection used in a course should provide opportunities throughout the semester for learners to think about three key questions: What? So what? and Now what? It is critical that learners have structured opportunities to address all three stages of thought. It is only at the Now what? stage that experiences can be converted into learning and growth, but learners typically need a teacher's guidance to reach this stage.

9.6 Teaching as assisted performance model (Tharp & Gallimore, 1988)

According to this model of instruction, the teacher's role is defined as that of a sensitive coach or expert partner who supports the joint inquiry by providing structural assistance (Tharp & Gallimore, 1988). The learners' role is to provide the content of the discussion by developing ideas or presenting their point of view. Tharp & Gallimore (1988) argue that instruction in contemporary classrooms should give space for learners' active participation and inventive role in transforming their understandings.

10: Reflection in action vs reflection on action

In order to effectively achieve the objectives of reflective teaching, several models and theories have been discussed to facilitate the process of reflection. Reflection has, over time, been divided into two main categories namely reflection-on-action and reflection-in-action.

10.1 Reflection-on-action

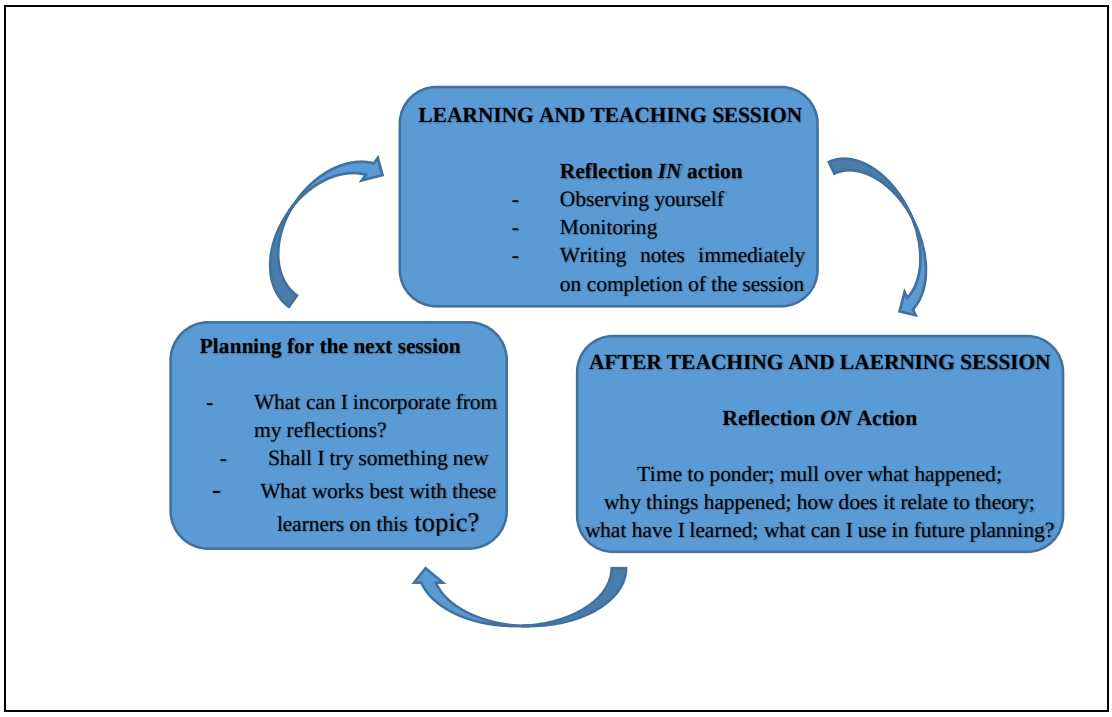
Reflection-on-action refers to the retrospective contemplation of practice undertaken in order to uncover the knowledge used in practical situations, by analysing and interpreting the information recalled (Fitzgerald, 1994). Therefore, it involves looking back after the event had occurred. It involves the turning of information into knowledge by use of a post mortem done cognitively. It is also believed that this kind of reflection does not only increase one's knowledge but also challenges the theories and concepts held by a person (Bolton 2004).

10.2 Reflection-in-action

Reflection-in-action on the other hand refers to thinking about what one is doing whilst one is doing it; it is typically stimulated by surprise, by something which puzzled the

teacher concerned (Greenwood, 1993). This gives the teacher a chance to redesign what is being done while it is being done and is therefore associated by experienced teacher (Schon 1983). See a summary diagram of Figure 10.2 that simplifies the two common kinds of reflection discussed here.

Figure 10.1: Reflection *IN* action and reflection *ON* action for reflective teachers: Adapted from Schön (1983) and Grushka, Hinde-McLeod and Reynolds (2005)



11. Reflective teaching Questions: Activities

11.1 Questions for reflective teaching

- How can teachers recognize, adapt, and respond to diverse learners and learners with special needs?

- How can teachers apply research findings to improve their own classroom practice?
- How can teachers help learners to learn?
- What am I doing and why?
- How can I better meet my learners' needs?
- What are some alternative learning activities to achieve the objectives?
- How could I have encouraged more involvement or learning on the part of the learners?

11.2 Generic questions for reflective teaching

- What happened?
- What took place?
- What areas of practice needed change or improvement?
- What worked really well?

11.3 Teaching Dairies (Questions to ask):

Lesson objectives – Did learners understand what we did in the lesson?

- Was it easy or difficulty
- What problems did learners encounter, if any?
- Were the objectives very clear?
- What activities did learners do to demonstrate understanding?

- Define reflective teaching.
- Write 6 characteristics of a reflective teacher.
- Explain why reflective teaching is important.
- Describe methods of engaging in reflective teaching.

12. Summary

This teacher's guide on reflective teaching was written in response to the findings of a study undertaken to establish teachers' understanding and implementation of reflective teaching and secondary school learners' performance. The guide provides teachers with orientation to reflective teaching and further enriches teachers' capability to attempt engaging in reflective teaching by proving tools that teachers can use in the endeavor to implement reflective teaching.