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CHAPTER ONE

SETTING THE SCENE

1.1. INTRODUCTION

This study sought to explore assessment practices at Solusi University with a view to finding out what the true worth or value of formative assessment was in the context of self-regulated learning. Assessment is the process of gathering and evaluating information on what students know, understand and can do in order to make informed decisions about next steps in the educational process. Assessment is expected to facilitate decision making regarding teaching and learning strategies (Clarke, 2012: 4). It is about making judgements about the quality of students' performance (Weurlander, M., Söderberg, M., Scheja, M., Hult, H. and Wernerson, A. et al., 2012: 747). The subject of assessment occupies an important place in the field of education. Scholars believe that the increased interest and attention that has been given to assessment shows that it is integral to the teaching and learning process.

Often times a big issue in teaching and learning is a puzzle of which one comes first, the subject content or the assessment material? Although this may boil down to the paradox of which one comes first between a chicken and an egg, assessment seems to be the single most influential factor in shaping what and how students in higher education choose to learn (Young, 2005). This is so because 'the aim of assessment is to promote learning by motivating students, steering their approach to learning and giving the teacher useful information to inform changes in teaching strategies or assessment for learning,' (Bloxam & Boyd 2007: 23-24; Mafenya 2013: 2). This view is supported by Jacoby, J. C., Heugh, S., Bax, C. and Branford- White, C. et al. (2014: 72) who assert that academic teaching staff value assessment as a tool for estimating learning, while students can see it as a motivator to learn. Since both student and teacher are active participants in the process of assessment, information can effectively flow from each party to support learning (Clarke, 2012, Ashford-Rowe, K., Herrington, J. and Brown, C. et al., 2014; Jacoby et al., 2014).

Assessment is usually classified as either summative or formative. Summative assessment refers to traditional tests usually at the end of a learning period, whereas formative assessment is the progress monitoring of performance during the course of a learning period (Kubiszyn and Borich, 2010). Similarly, Gibbs and Simpson (2004), cited in Mafenya (2013:

2), also classify assessment as being either formative or summative. They list four main functions of assessment namely: (1) formative, to provide support for future learning, (2) summative, to provide information about performance at the end of a course, (3) certification, selecting by means of qualification and (4) evaluative, a means by which stakeholders can judge the effectiveness of the system as a whole. Items (3) and (4) can either be summative or formative or both, depending on the assessment system being followed in a particular institution.

The current study focused on formative assessment. Moeed (2015: 185) posits that formative assessment is all about learning and includes planning for learning, improving and enhancing learning, finding out what is learned, and planning the future steps for learning. Anohina-Naumeca, A. and Jurane-Bremane, A. (2015: 6) argue that the essential characteristic of formative assessment is that it is regular and grade-free and can be in any form such as observations, questions, discussions, projects and homework. Other scholars give examples of classroom assessment activities to include oral questioning and feedback, homework assignments, student presentations, diagnostic tests, and end of unit quizzes. The main purpose of these assessments is to provide real time information to support teaching and learning (Obiazi, 2009; Kapambwe, 2010; Clarke, 2012).

In this study I used the term 'formative assessment' advisedly considering its glaring overlap with the term 'continuous assessment.' According to Obiazi (2009) continuous assessment is a mechanism whereby the final grade of a student takes account of all the assessed performances during a given period. This implies that all the classroom assessment activities contribute to the final grade. Clarke (2012: 7) argues that classroom assessments may also be referred to as continuous or formative assessments and that such assessment types are not completely independent of examination type of assessments. These ought to assist lecturers to gather, interpret and synthesise information about students. This information helps the lecturers to understand the students, plan and monitor instruction and establish a viable classroom culture (Yorke, 2003; Obiazi, 2009). As such the term 'formative assessment' in this study was used synonymously with the term 'continuous assessment.'

There is thus need of a model of qualitative learning assessment to help implement assessment methods that reflect and support valued learning processes as well as desired content outcomes (Young, 2005). Assessment practices must assume a metacognitive self-

regulated learning approach in order to realise quality teaching and learning. Metacognition is often referred to as "thinking about thinking" or “knowing about knowing” or “cognition about cognition” and can be used to help students “learn how to learn,” (Flavell, 1979; Livingston, 1997; Papaleontiou-Louca, 2008). Metacognition goes hand in hand with self-regulation or self-regulated learning.

Just like assessment, the concepts of metacognition, self-regulation and self-regulated learning have been growing in dominance in educational theory, research and practice. A central argument is that, in higher education, formative assessment and feedback should be used to empower students as self-regulated learners (Nicol and Macfarlane-Dick, 2006). It goes without saying therefore that metacognition, self-regulation and self-regulated learning should be the natural outcome of an enabling learning environment. This environment should offer formative assessment methods which are modelled after best practices.

Formative assessment is intended to provide intermediate feedback on a regular basis. This feedback should help inform students that they have either mastered or not mastered discrete concepts and skills in a given topic. Teachers also use formative assessment information to judge the effectiveness of their teaching. Thus scholars are agreed that formative assessment mainly serves to generate feedback on students’ performance in order to improve learning (Sadler 1998; Obiazi, 2009; Kapambwe, 2010; Weurlander et al., 2012; Clarke, 2012). The academic importance attached to formative assessment is highlighted by Yorke (2003: 2) who states:

> It is argued that there is a need for further theoretical development in respect of formative assessment, which needs to take account of disciplinary epistemology, theories of intellectual and moral development, students’ stages of intellectual development, and the psychology of giving and receiving feedback.

This statement presupposes that formative assessment is an area of study and practice with potentially many avenues to be explored. It is from such statements that one is bound to develop an inquisitive mind especially with regards to the current assessment practices at Solusi University. The university makes use of continuous assessment as a major component of the assessment process. When the semester comes to the end every student will have a certain mark from the continuous assessment. The level of performance of the student in these assessments reflects in the final grade (Obiazi 2009; Kapambwe, 2010). In this case the

final grade is a combination of both formative and summative assessment. This is what obtained at Solusi University at the time when the current study was conceptualised.

Nevertheless, the nature of continuous assessment at the university did not seem to be informed by a well-grounded and clearly articulated framework that was applied to all coursework units that were being offered. The main document that regulates academic policies and practices is the bulletin. "It describes the academic programme you select and the requirements you must fulfil to graduate," (2010-2012 Bulletin: 4), and is a frame of reference that enumerates what students are supposed to do in order to graduate. However, it does not specify aspects of interactive feedback between teachers and students. Jacoby et al. (2014: 72) postulate:

> The main criterion for the use of formative or summative assessment is that it must be used within a framework that is continually monitored by the educator with a viable and steady feedback loop from the student.

This is not clearly defined in the bulletin or other documents such as the course outline which also helps to give information on assessment in the university. Assessment was seemingly not perceived in a way that allowed students to actively monitor their learning.

Another area of great interest to this study is implied in the statement that formative assessment needs to take account of theories of intellectual/cognitive and moral/social development (Yorke, 2003: 2). Theories come in handy because these are a series of logically linked statements about why something happens or about relations among phenomena (Vogt, W. P., Haeffele, L. M. and Gardner, D. C. 2012:11). Metacognition is one of such theories. The discovery and theoretical elaboration of metacognition constitutes a major breakthrough in recent decades especially as it relates to self-regulated learning (Ben-Eliyahu, and Linnenbrink-Garcia: 2015). Scholars are agreed that metacognition is valued for its ability to develop problem solving and critical thinking skills in students (Martinez, 2006; Holton and Clarke, 2006). This study was embarked on the premise that assessment practices should assume a metacognitive self-regulated learning approach. This is an area that has not been deliberately explored at Solusi University and it does not feature in any of the working documents.

There are several theories of cognitive and moral development. Schunk (2009) and Creamer (2000), separately but conceptually together, point to three sets of theories which come in handy for the teaching/learning process. Three cognitive self-regulated learning theories that have been applied extensively to school learning are information processing, social constructivist, and social cognitive theories (Schunk, 2009). Likewise, there are three theory clusters important to the practice of academic advising: psychosocial theories, cognitive development theories, and typological theories (Creamer, 2000). Though one may look at these theories differently, they actually involve knowledge of the student's stages of development. Although university students are adults, the nature of their minds can be understood best by a study of cognitive and moral development theories (Solso, 2004). It was well noted in the current study that no valid research had been carried out to determine how such theories could be applied to the assessment practices at Solusi University.

1.2. BACKGROUND TO THE STUDY

Solusi University is an Adventist institution of higher learning located 50km to the southwest of the city of Bulawayo in Zimbabwe. It was established as a mission station by a group of missionaries who came to set up base near the home of Chief Soluswe. Solusi mission was named after Chief Soluswe. Solusi mission has grown in size over the years since its inception by the missionaries in 1894. Currently the mission station is made up of Solusi Primary School, Solusi Adventist High School and Solusi University. In addition to that there is also Solusi Mission Clinic which offers services to the Solusi community as well as surrounding villages on a radius of about 30 km. The primary and secondary schools also service the same communities.

According to the Solusi University's handbook for the faculty and senior staff, (2000: 4), "With a growing demand for church workers, Solusi Mission continued to expand, and by 1929 a government-approved teacher-training programme had begun." The expansion of Solusi Mission included the introduction of a secondary school in 1948 and then later being upgraded to senior college status in 1956. Bachelor's degrees were being offered by the college by the year 1958. Solusi College enjoyed a 10 year affiliation with Andrews University, another Adventist institution based in the United States of America. During this period from October 1984 to July 1994, graduates from the college were granted with

Andrews University degrees. Solusi University was granted a Charter by the President of the Republic of Zimbabwe in 1995.

As the university grows, issues of quality in the programmes offered come to the fore. There are two accrediting bodies that monitor quality of education at Solusi University. One of these is the Zimbabwe Council for Higher Education (ZIMCHE). This body is the national watch dog for higher education in Zimbabwe. According to Garwe (2012), ZIMCHE is mandated to:

1. Promote, coordinate & improve relevance & quality of higher education (HE).
2. Act as a regulator in the determination and maintenance of standards of teaching, examinations, academic qualifications & research in higher education institutions (HEIs).

As a private church run institution, Solusi University must also fulfil the quality standards and expectations of the Adventist Accrediting Association (AAA). This is an international body which serves as a watch dog for education at all levels in the Seventh-day Adventist run institutions. One of its major responsibilities is to ensure that all institutions of higher education have a responsibility to deliver quality education (AAA, 2012).

The deliberate attempt to examine the quality and quantity of continuous assessment became pertinent to Solusi University as part of an attempt to ensure quality education. The Solusi University academic bulletin (2010-2012) indicates that each course is examined by continuous assessment and by formal final comprehensive examination. The weight of continuous assessment and final examination is 40% - 50% and 50%-60% respectively. This clearly shows that continuous assessment is a significant component for awarding grades to students.

Nevertheless there seemingly was an imminent danger of this becoming an emphasis on the quantity more than the quality of grades. The current study sought partly to explore ways of developing an assessment process that would also put an emphasis on a qualitative self-regulated learning approach. In this regard, continuous assessment would ensure that students have developed the requisite knowledge, skills, values, and attitudes that prepared them for work, life, and responsible citizenship, (New Leadership Alliance for Student Learning and

Accountability, 2012). This obtains where there is interactive feedback in continuous assessment to back up teaching and learning (Harks et al., 2014). In this case a self-regulated learning approach to continuous assessment is the ideal.

Self-regulated learning principles have been implied in the university's holistic objectives. For example, two mental development objectives are to "help students to develop analytical thinking skills," and also, "to encourage students to develop intellectual curiosity," (2010-2012 Bulletin: 29). However, the implementation of these objectives has not been clearly spelt out in any of the working documents in relation to continuous assessment.

Thus, as Yorke (2003) correctly observes, the importance of formative assessment in student learning is generally acknowledged, but it is not well understood across higher education. This assertion evokes a call for well- grounded and system-wide formative assessment approaches. Assessment should be used to scaffold learning rather than relegating it to rank ordering of students for the purposes of grading (Wilson and Scalise, 2006: 643). Feedback is the most valuable component that gives students the opportunity to use it for reflection and development in the learning cycle (Freeman and Dobbins, 2013).

An instrument that is meant to facilitate feedback at Solusi University is the course outline. This document is the compressed version of the curriculum and serves as the syllabus for each course unit. It is standard practice at Solusi University that on the first day of class students expect to receive a course outline. This should be used to give details on quizzes, tests, assignments, procedures, and requirements for the course (Thompson, 2007). A closer look at its contents indicated that the course outline in its purpose as a syllabus could facilitate student learning if used effectively. Therefore, the lecturers needed to give diligence in the construction and presentation of the syllabus (Thompson, 2007).

The course outline/syllabus serves many purposes in the area of teaching and learning. Parkes and Harris (2002: 55) summarise these functions to include (a) serving as a contract, (b) serving as a permanent record, and (c) serving as an aid to student learning. There has been no attempt either through research, workshops or any documentation by Solusi University to ascertain that the course outline serves its intended purpose. This is part of what motivated this study. A section of the course outline that seemed to have been given more attention than

others was the assessment guide. Table 1 below is an extract from a course outline showing an assessment guide:

Table 1.1 Assessment Guide

Quizzes	10%
Assignments	5%
Term Paper	10%
Mid-semester Examination	25%
Final Examination	50%
Total	100%

Adapted from Solusi University Bulletin (2010-2012)

This is basically the main information that one would find in all the documents with regards to assessment practice. While this information is useful for grading purposes, it is not intentional in terms of facilitating self-regulated learning. It was expedient to ask, for example, how both lecturers and students used quizzes and assignments to conceptualise feedback and self-regulation (Nicol and Macfarlane-Dick, 2006). How did the lecturers use feedback on assessment to help students revise their thinking? My focus in this study included an attempt to find answers to such questions.

Assessment practice in the university includes both formative and summative assessments respectively. Scholars note that, theoretically, assessment is often focused on grades and thus everyone thinks of assessment in its summative sense (Miller, 2006). Nevertheless, formative/continuous assessment is not all about grades. Instead formative assessment should provide feedback and correctives at each stage in the teaching-learning process (Bennett, 2011).

Guidelines that show how continuous assessment should be used for feedback purposes were not clearly spelt out in the university bulletin. Therefore, one would conjecturally surmise that continuous assessment served a feed out function, which, according to Knight (2002), simply warrants achievement because the grades are performance indicators. During the course of a given semester both lecturers and students were seemingly deeply involved in "beating the mean" as the measure of success. On one hand the lecturer needed to give so many quizzes, tests and assignments so as to have a record for continuous assessment. On the other hand, each student needed to know how much of the semester's continuous assessment

mark he/she had achieved. These would usually be displayed on notice boards so that each person was aware of how much they needed to score before the final examination.

It was a wonder to me though whether this continuous obsession for grades in formative assessment really produced self-regulated learners or not. Most probably, continuous assessment practices failed to view assessment in its proper perspective which ought to connect instruction to student learning, (Wilson, 2009). There was also likelihood that the term assessment was not distinguished from the terms test and measurement. Nitko and Brookhart (2011) define a test as a systematic procedure for describing student performance whereas measurement is a process used to assign performance scores. Nevertheless, Miller, D., M., Linn, R.L. and Gronlund, N., (2013: 27) contend that by comparison assessment is a much more comprehensive and inclusive term than measurement or testing.

Thus it may be reiterated that more than just being used for the rank ordering of students, continuous assessment should result in self-regulated learning. While the literature suggests that continuous assessment should serve rich academic purposes, this did not seem to be the case at Solusi University. The status quo indicated that continuous assessment was a routine exercise. There was also a pronounced absence of academic forums or other attempts to revisit the assessment practices in the institution. The current study sought to explore how continuous assessment could be made more akin to self-regulation and self-regulated learning.

1.3. THE RESEARCH PROBLEM

Assessment of student performance in a university is an important part of the business of teaching and learning therein. In most institutions of higher learning, continuous assessment has become a major component of such assessment. One of the major functions of assessment in general and continuous assessment in particular is to act as a barometer of the quality of learning going on in an institution. A sound assessment system is one in which expected standards of student performance are not only high but also comparable across departments and faculties. In my experience as a part-time lecturer at Solusi University, there was no standard and well-grounded framework to guide continuous assessment. There was not enough knowledge regarding what informed assessment practices in the various departments.

This implied that the quality and comparability of such assessment were under threat. Against this background, this study sought to answer the following critical questions:

1. What is the true worth or value of formative assessment in the context of self-regulated learning? This has the following two critical sub-questions:
    a. How do lecturers and students in the various Departments characterise the quality of formative assessment practices?
    b. What do course outlines and related documents suggest regarding the quality of formative assessment and how does such evidence compare with staff and students' perspectives?

2. How can the self-regulated learning approach add value to formative assessment practices in this university?

1.4. PURPOSE OF THE STUDY

The purpose of this study arose from some of the questions and observations that have been raised above with regards to assessment practices at Solusi University. The peculiarities that I observed portrayed a culture of conventional disposition by both lecturers and students. Such conduct is good if it is based on sound academic principles. If not, then it becomes probable that malpractices arising from either negligence or ignorance could affect quality.

The main purpose of this study was two-fold: Firstly, it intended to explore what the true worth or value of formative assessment was in the context of self-regulated learning. In view of that it sought to investigate how the academic staff and students in the various departments characterised the quality of current assessment practices at Solusi University. It also intended to find out what the course outlines and related documents suggested regarding the quality of continuous assessment and how such evidence compared with staff and students' perspectives. Secondly the study also wanted to determine how the self-regulated learning approach could add value to continuous assessment practices in this university.

1.5. THE SIGNIFICANCE OF THE STUDY

The study sought to make some significant contributions to the assessment process at Solusi University. I anticipated that an in depth investigation and analysis of assessment practices would provide some insights on whether the current framework was relevant to the specific learning contexts or not. My intention was to ultimately set Solusi University as an object

lesson for other institutions of higher learning with regards to assessment practice. Some theories would be used as lenses to address issues of inter alia metacognition, self-regulation and self-regulated learning so as to determine the effectiveness of the prevailing formative assessment practices. I hoped that conclusions would be drawn on what works and what does not work and the underlying factors thereof. On the basis of such information recommendations would be made on how to implement the self-regulated learning approach to improve formative assessment practice. The primary application of the findings would be Solusi University as a benchmark for universal application.

1.6. DELIMITATIONS OF THE STUDY

This research is confined to a case study. According to Bhattacherjee (2012: 93), a case study is a method of intensively studying a phenomenon over time within its natural setting in one or a few sites. This study is located within the field of education management as part of social science research. As such the case study fits in perfectly well as one of several ways of doing social science research within the richness of the phenomenon and the extensiveness of the real life context, (Creswell J. W., 2009: 2). One of the advantages of a case study to the field of education management is that the insights may be directly interpreted and put to use by all the stake holders, (Cohen, L., Manion, L. and Morrison, K., 2007: 256). A strong rationale for using the case study is further expounded in Section 4.3 on page 95.

Hence the current study is confined to one site namely Solusi University targeted at students and lecturers. For easy monitoring, the regular students were preferred to the Block-Release students because the latter do not stay long on campus. Second year students were the best target group because unlike other groups, they would have been on campus for a continuous period of two years.

1.7. LIMITATIONS OF THE STUDY

There were some constraints that stood as limitations to this study. One such limitation was that since I am an administrator in the institution the respondents would probably withhold some of the critical information that was needed for this study. In addition to that there was also a possibility that nobody would be willing to sacrifice their time as participants due to the tight schedule in the university activities. Therefore, I started by seeking approval from

the Solusi University's research committee which is tasked to scrutinize all forms of research. In addition to that the ethical clearance certificate from the College of Education Research Ethics Review Committee of the University of South Africa helped to clear the air. The Pro-Vice Chancellor's office at Solusi University facilitated the corporation of Deans and Heads of Departments. The lecturers and the students would only interact with me with the permission and involvement of the Head of Department for each core course under review.

1.8. DEFINITION OF KEY TERMS

Assessment: "The process of gathering and evaluating information on what students know, understand and can do in order to make an informed decision about next steps in the educational process." (Clarke 2012).

Assessment System: A group of policies, structures, tools and practices for generating and using information on student learning and achievement, (Ravela, P., Arregui, P., Valverde, G., Wolfe, R., Ferrer, G., Rizo, F. M., Aylwin, M. and Wolff, L.; 2009).

Assignment: This is an assessment method usually in the form of research papers, book reviews presentations and reports.

Block-Release Session: An irregular semester in the university calendar. This includes three weeks of residential school and another three months of long distance learning.

Core Course/Module: These two terms are used interchangeably to refer to a full course to be covered over a semester.

Model: A document outlining policies and procedures of a system such as formative assessment. In this study a model will refer to a simplified representation of assessment practices at Solusi University that will allow aspects of the assessment system to be easily understood and followed.

Quiz: This is an assessment method usually in the form of objective test questions to be done over a relatively short period of time not more than fifteen minutes.

Test: This is an assessment method usually in the form of subjective test questions to be done over a relatively longer period of time not less than twenty minutes in a learning period.

1.9. DESCRIPTION OF CHAPTERS

The report is divided into six chapters as follows:

Chapter One: Introduction

This chapter provides the contextual background of the study. It also gives the justification for the study together with the problem statement, research questions, limitations and delimitations as well as definition of terms.

Chapter Two: Literature Review

In this chapter literature is reviewed on scholarly debate on the concepts of formative and summative assessments, feedback, metacognition, self-regulated learning, theories of intelligence and learning and quality assurance in education. An attempt is made to identify the gaps vis-à-vis the prevailing formative assessment practices.

Chapter Three: Theoretical Framework

In this chapter the theories that underpin this study namely, Self-Regulated Learning, the BEAR Assessment System and Bloom's Taxonomy of Learning Objectives are reviewed. This is so as to use them as lenses with which to view the assessment practices at Solusi University.

Chapter Four: Research Methodology

This chapter describes how the research was carried out. It reveals the research design as well as the sampling, data collection and analysis procedures.

Chapter Five: Data Presentation and Discussion

This chapter presents data from the research findings. The data is discussed, analysed and interpreted using themes and sub-themes.

Chapter Six: Using the Self-Regulated Learning Approach to Enhance Formative Assessment Practices

The focus of this chapter is to discuss what I learn from the study regarding how formative assessment can be enhanced. Prior to that a summary of the whole research journey is given from whence came the key findings. The major recommendations are made on the basis of what I learn from this study and then the conclusions are done in the last section.

CHAPTER TWO

LITERATURE REVIEW

2.1. INTRODUCTION

In this chapter I review literature on the following: assessment, guidelines and principles for the process of assessment, feedback, metacognition, self-regulated learning, theories of learning and intelligence and quality assurance in education. It goes without saying that the quality of assessment practice should be informed by a careful comparison of scholarly discussions on the concept of assessment and its applicability. Hence literature is reviewed on the concept of assessment in general and formative assessment in particular while linking it to self-regulation and self-regulated learning. The review also seeks to find out what self-regulation and self-regulated learning entail. The litmus test for assessment is that it should lead to self-regulation and self-regulated learning.

A review of literature on the guidelines and principles for the process of assessment is expected to shed more light on the concept of self-regulated learning. Subsequent to that, it became evident that formative assessment feedback would also be an important area to explore. Scholars are agreed that feedback goes along with assessment as critical determinants of what, when and how students should be taught (O'Donovan, B., Rust, C. and Price, M., 2015). The concept of metacognition is examined with the end in view to determine how the metacognitive self-regulated learning approach could add value to continuous assessment practices at Solusi University. Scholarly views are reviewed in order to establish the relationship between metacognition and theories of intelligence and learning. Metacognition as a theory borrows from and lends to other theories even within the context of assessment. Since assessment touches on expected standards and practices, it is also prudent to examine literature on quality assurance in education. Such an analysis serves to check if assessment is a significant factor in quality assurance.

I envisaged that the areas to be examined in literature would hopefully provide the impetus to identify the gaps vis-à-vis the prevailing formative assessment practices. The motivating factor with literature review is that it seeks to provide knowledge about a particular field of study, including vocabulary, theories, key variables and phenomena, and its methods and

history (Randolph, 2009: 2). Thus expanded views are examined to address the issues under review and more especially including self-regulated learning aspects.

2.2. ASSESSMENT AND ITS INFLUENCE ON TEACHING AND LEARNING

Assessment is a critical factor in the context of teaching and learning. Both the students and institutional officials need to carry out an assessment of the work that would have been done. Clarke (2012) argues that classroom assessment in the form of quizzes, tests and assignments provides 'real time' information to support teaching and learning. Stiggins (2005: 5) describes assessment as "the process of gathering evidence of student learning to inform instructional decisions." It involves the deliberate effort of the teacher to measure the effect of the instructional process as well as the overall effect of school learning on the behaviour of students (Idowu, I. A. and Esere, O. M., 2009: 18). Assessment is about making judgements on the quality of students' performance (Weurlander et. al., 2012)). As a form of judgment therefore assessment helps to determine progress in teaching and learning. It acts as a mirror for both lecturers and students.

The subject of assessment has been extensively addressed in literature from various angles over the years. Young (2005: 1) argues that in fact, it seems that no matter what innovative and engaging teaching methods are used, assessment will "swamp the effects of any other aspect of the curriculum" causing students to base their decisions regarding approaches to learning on how they will be graded, not on how they are taught. The influences of assessment on approaches to learning are so strong that (Young, 2005: 1) reiterates the notion that assessment effectively "defines the curriculum." According to Flores, M. A., Simão, A. M. V., Barros, A. and Pereira, D. (2014), the importance of assessment and its distinctive influence on students' learning is evidenced by the wide coverage given to it by many scholars. Medland (2016: 81) also points out that assessment is integral to the support of learning and the development of the learner.

Hence it is clear that assessment is a vital component of the teaching and learning environment. The ripple effects of assessment were manifested in the way lecturers and students viewed it at Solusi University. It seemed to me that both instruction and learning were being described in terms of the marks and scores from assessment. Everything about teaching and learning was being viewed from the perspective of assessment. Therefore, since

assessment was given such prominence, even to the extent of altering approaches to learning and teaching, it should be based on well-grounded and tested academic standards. It was my desire in this study to investigate ways in which to boost the quality of assessment at Solusi University by linking it to such standards.

2.3. THE RELATIONSHIP BETWEEN FORMATIVE, SUMMATIVE AND CONTINUOUS ASSESSMENTS

Formative assessment is one of the two general uses or means of assessment. The other one is summative assessment (Woolfolk, A., Hughes, M. and Walkup, V. 2008). The former is the kind of assessment which is usually done during the course of a learning period while the latter often has to do with assessment done at the end of a learning period. Formative assessment may be done formally or informally (Anohina-Naumeca and Jurane-Bremane, 2015; Clarke, 2012; Kapambwe, 2010; Obiazi, 2009). When it is done formally students may be given written exercises which are graded while some exercises may be done informally either orally or otherwise but not for grading purposes. A distinctive feature of formative assessment is the use of feedback to promote learning (Kerr, S, Muller, D. McKinon, W. and McInerney, P., 2016; Anohina-Naumeca, and Jurane-Bremane, 2015). Nevertheless, it has also been argued that feedback has the role of justifying grades and maintaining standards, as well as upholding its formative role (Joughin, 2008: 33). Depending on the prevailing assessment practice in an institution, formative assessment may or may not be used for grading purposes.

At this stage it becomes appropriate to infuse the term continuous assessment because of its importance to the current study. According to Cole and Spence (2012: 512), the term ‘continuous assessment’ is used to indicate that the students are being assessed on and off throughout the course rather than just at the end of it. In the case of Solusi University the continuous assessment approach includes both formative and summative aspects which are used for grading purposes (2010-2012 Bulletin: 61). This hybrid of assessment terms is the motive that aroused my interest to embark on this study. From the next paragraph I endeavour to explore the use of the term ‘continuous assessment’ in relation to both summative assessment and formative assessment.

Continuous assessment as a concept has been addressed by various scholars over the years. Hernandez (2012:490) indicates that continuous assessment practices generally have a formative function for learning and a summative function for certification. Airasian (1991) defines continuous assessment as an assessment approach which should depict the full range of sources and methods teachers use. These ought to assist the teachers to gather, interpret and synthesise information about learners which is used to help them to understand the learners, plan and monitor instruction and establish a viable classroom culture. This definition of continuous assessment directly links it to summative assessment in which analysed information usually in the form of marks or grades assists teachers to understand the learners.

Continuous assessment is also linked to formative assessment. In the previous paragraph I have made reference to the assertion by Hernandez (2012:490) that continuous assessment practices generally have a formative function. Brown (1999: 6) as quoted by Yorke (2003) suggests that formative assessment "is primarily characterized by being continuous." In school-based contexts, 'formative' and 'continuous' approaches to assessment by classroom teachers are often synonymous (Cross and O'Loughlin, 2013: 585). In the same vein, Wylie et al. (2012: 4) argues that formative assessment is a continuous process in which students and teachers engage to monitor learning and to inform future instruction. These assertions significantly portray the mutual relationship that exists between continuous assessment and formative assessment. Thus the practice of continuous assessment is also basically the practice of formative assessment and the two terms may be used synonymously.

In a study carried out at a university in Northern Ireland by Cole and Spence (2012), formative assessment by way of continuous assessment was shown to be useful in encouraging continuous learning and building the confidence of students over a given semester. The method used involved a combination of lectures, tutorials, tests and a final examination. Continuous assessment was summative in nature in that class-based tests accounted for 20% of the overall mark whereas the final examination contributed 80% of the final mark. According to Cole and Spence (2012:519) the focus group participants all identified benefits of the continuous assessment system. These included encouraging students to learn each week, thereby keeping up to date with the lecture material. Besides that, the students were already partly prepared for and had confidence towards the final examination.

The continuous assessment system applied in this university is slightly different from the one being used at Solusi University. Unlike at Solusi University here students also attend tutorials besides going for lectures. Tests are given at the end of a tutorial and not in a lecture state of affairs. Tutorials give students the opportunity to think and reflect on their lecture material more realistically. Nevertheless, from the study by Cole and Spence (2012), I note with interest the role of continuous assessment in compelling students to keep up to date with lecture material and also to prepare for their final examination. Such features were investigated to see how they could be used positively even within a lecture to support learning (see Sections 6.3.1 and 6.3.2).

There are two major purposes of continuous assessment that may apply at all levels of learning. These are, "to improve both the validity and reliability of the results of pupils' performance on tests and exercises, and secondly to help the pupils to develop effective learning and work habits," (Quansah, 2005: 4). According to Kapambwe (2009: 100), the two objectives of continuous assessment are, "firstly, to promote the use of formative assessment so as to improve the quality of learning and teaching and secondly, to establish a regular system of managing cumulative pupils' performance marks for purposes of using them in combination with final examination marks for selection and certification." The two references give two overlapping sets of purposes/objectives of continuous assessment as shown in the next paragraph.

The purpose to "help the pupils to develop effective learning and work habits," (Quansah, 2005: 4) resonates with the objective "to promote the use of formative assessment so as to improve the quality of learning and teaching," (Kapambwe 2009: 100). This pair is more closely linked to formative assessment. The purpose to "improve both the validity and reliability of the results of pupils' performance," (Quansah, 2005: 4) resonates with the objective "to establish a regular system of managing cumulative pupils' performance marks," (Kapambwe 2009: 100). This is more loosely linked to summative assessment.

There are some lessons that I see from this pairing of purposes/objectives from the two sources quoted in the two paragraphs above. One of them is that continuous assessment should promote learning in class and at the same time allow for the rank ordering of students within a given learning period. The later use of continuous assessment was seemingly being over emphasised at Solusi University. Continuous or formative assessment should be

systematic, comprehensive and cumulative if it is to promote meaningful and effective learning. In this section it has emerged that summative, formative and continuous assessment respectively are hybrid terms in that they do intersect in their implementation. I thus investigated to find out whether there was any manifestation of this intersection of these forms of assessment in the continuous assessment process at Solusi University (see Section 5.2). Consequently, their relationship can further be exhibited by probing into the characteristics of summative and formative assessments.

2.4. CHARACTERISTICS OF SUMMATIVE AND FORMATIVE ASSESSMENT

Both summative and formative assessments have got their own unique characteristics. Several scholars have attempted to articulate the characteristics of summative assessment. According to Harlen, (2007b: 123), some key characteristics of summative assessment are that it:

1. May be based on teachers' judgments or external tests, or a combination of these;
2. Is not a cycle taking place as a regular part of learning, but only at times when achievement is to be reported;
3. Relates to the achievement of broad goals expressed in general terms;
4. Provides results expressed in terms of publicly available criteria for grades or levels;
5. Judges all students by the same criteria;
6. Requires some measures to assure reliability;
7. May, in some circumstances, provide opportunities for student self-assessment.

The continuous assessment process that was applied at Solusi University rendered each one of the characteristics listed above to be applicable to formative assessment as well. In many instances formative assessment at Solusi University was related to the achievement of broad goals expressed in general terms in the course outline. Throughout the course of the semester, formative assessment was based on teachers' judgments in the form of quizzes, tests and assignments. These were a cycle taking place as a regular part of learning and they were also used to report achievement. The university's calendar of events showed the mid-semester examinations to be scheduled for a particular week of the semester for all the courses. The course outlines also customarily indicated scheduled dates for quizzes and tests.

Likewise, formative assessment in the university judged all students by the same criteria and the results were expressed in terms of publicly available criteria for grading purposes. Although this was not happening at the commencement of this study, the form of formative assessment being practiced at Solusi University may have required some measures to assure reliability. Such innovations could begin with the mid-semester examinations. It may also be true that in most cases, quizzes, tests and assignments could have provided some opportunities for student self-assessment.

Educational practitioners consider formative assessment to be a student-centered approach to teaching and learning. Formative assessment has been referred to as assessment for learning (Harlen, 2006). Such views are further attested to by Wylie, E. C., Gullickson, A. R., Cummings, K. E., Egelson, P. E., Noakes, L. A., Norman, K. M. and Veeder, S. A., (2012:21) who summarises the characteristics of formative assessment to include:

1. Intended outcomes of learning and assessment are clearly stated and shared with students.
2. Formative assessment opportunities are designed to collect quality evidence that informs teaching and improves learning.
3. Formative feedback to improve learning is provided to each student.
4. Students are engaged in the assessment process and, to the extent possible, in planning their own next steps for learning.

Formative assessment takes place in the process of teaching and learning in order to support learning. Nevertheless, my exposure to the formative assessment practices at Solusi University indicated that the characteristics listed above may not have been fully manifested. If some of the assessment was not used to contribute to the final summative grade, students would then use it for self-assessment to improve their learning (Britton, 2011). What was clear is that students were assessed in one way or another during the instructional processes. In this case the intended outcomes of assessment may have been shared with the students. Nevertheless, the prevailing practice was that the evidence collected from formative assessment was primarily intended to garner enough marks towards continuous assessment. For the most part students wanted formative feedback to see how far they were from the pass mark although by default they may have used it to improve their learning. The formative

assessment process did not engage students to plan their own next steps for learning. My immediate conviction in this study was that the steps outlined above could be followed if given the enabling environment.

The well-meaning efforts to maintain good grades have inadvertently allowed summative assessment to have an established presence as part of teaching pedagogy (Boyle and Charles, 2010). As such summative assessment tends to be the dominant template of assessing students even in a classroom situation. Because of this, students may be denied the opportunity to become active participants of learning due to the pressure to attain good marks at any cost. This tends to affect the attitude of learning in order to understand. Instead students learn in order to achieve a score or mark.

However, if the practice of formative assessment does not inculcate proactive learning habits in students, then this suggests a missing link in the system. Black and McCormick (2010) contend that the implementation of formative assessment is threatened by the notion that summative assessment is both an educational practice and a societal expectation. As such the likelihood is that formative and summative assessment cannot be separated impromptu. The dominant features to be sought for in most course outlines even at Solusi University were the quizzes, tests and assignments. The motivating factor for students to attend a lecture was to avoid missing a quiz.

Nevertheless, there is a way that formative and summative assessments can positively be used concurrently. Yorke (2003) argues that a number of writers have observed that the distinction between formative and summative assessment is far from sharp. The observations reveal that some assessments (e.g. in-course assignments) are deliberately designed to be simultaneously formative and summative – formative because the student is expected to learn from whatever feedback is provided, and summative because the grade awarded contributes to the overall grade at the end of the study unit (Yorke, 2003). This presupposes that in terms of practice therefore formative assessment marks may be combined with final examination marks (summative assessment) for purposes of selection and certification (Kapambwe, 2010). How this is done is the critical factor that will determine whether learning is reinforced or not.

Studies have been conducted for the purposes of determining the rationale for the use of formative assessment for summative purposes. Black (2013:219) discovered two states in

Australia in which such a practice apples. In each of the two particular cases he appreciated the use of a collaborative professional development programme of training teachers as assessors and as participants in interschool alignment procedures. He emphasised that such would ensure that the assessment instruments and the procedures used to interpret them were comparable across schools.

In one of the cases, Black (2013:219) did a comparative investigation to find out the relationship between teachers' use of formative and summative assessments in the state of Queensland in Australia. It was shown that the summative use of formative assessment was wholly school-based. Students were graded for school leaving certificates on the basis of formative assessment. On the other hand, in New South Wales 50 % of the weight of final assessments was based on the schools' formative assessment. The other 50 % was based on the state's formal tests.

There are similarities with Solusi University that may be observed in the assessment systems that were being followed in the two states. In the first case one could see what prevailed at Solusi University where formative assessment was specifically designed to grade students towards final certification. Nevertheless, Black's (2013:219) study indicates that the authorities in Queensland had put in place synergistic efforts to train teachers as assessors in order to ensure comparability of assessment instruments and interpretation procedures. Such initiatives could be viewed as the rationale for the summative use of formative assessment.

The second case from the state of New South Wales is almost a duplication of the prevailing assessment procedures at Solusi University. The weight of final assessment is based on 50% formative assessment and 50% summative assessment. In spite of that, Black's (2013:219) study attests that the 50% summative assessment was used to audit and calibrate the 50% summative assessment. Here also teachers went through collaborative professional training as assessors. In my experience I noted the absence of such synergies in the current assessment system at Solusi University.

Similarly, Hernandez (2012) conducted a study to ascertain the extent to which continuous assessment practices do facilitate student learning in higher education. What emerged from this study is that continuous assessment was extensively used to assess students in class under typical examination conditions. Furthermore, some advantages were noted for the use of

continuous assessment. Hernandez (2012:499) argues that the greater use of continuous assessment provides academics with more control over the assessment within the classroom because students would be supervised. In addition to that the potential of continuous assessment to support student learning through feedback and to increase students' motivation for learning is noted. The concept of feedback is addressed in section 2.8 of the current study.

In another study, Weurlander et al. (2012**:**749**)** made use of two different types of formative assessment in order to find out how they impacted on medical students. The students were exposed to (1) an individual written assessment with mainly factual questions, and (2) an oral assessment which encouraged students to solve problems in groups. A summary of the findings is contained in Table 2.1.

Table 2.1. Effects of Using Formative Assessment as a Tool for Learning

Area of Effect	What it Could be	Explanation
Motivation to Study	1. Intrinsic 2. Extrinsic	1. Evidence of growing interest in the subject; enhanced retention of information 2. Pressure to study and practice for the assessment
Awareness	1. What counts as knowledge 2. Own Learning	1. Students given clues on what counts as important in the course 2. Students given feedback on progress and areas needing attention
Tool for Learning	1. Process 2. Product	1. Assessment influenced how students learn 2. Assessment influenced what students learn

Adapted from Weurlander et al. (2012)

In their concluding remarks, Weurlander et al. (2012**:**758**)** argue that their findings suggest three implications for assessment practice and course design. These are:

1. It is likely that the students' experiences are influenced by the order in which they were exposed to the assessment methods, and the educational environment which constituted the context of the study.
2. From the teaching point of view, the use of a number of complementary formative assessments throughout a course can help students to study consistently.

3. The design of assessment tasks is up to the teacher and students' learning is likely to improve if teachers consciously use a series of assessment tasks to facilitate learning in a variety of ways.

There are two views that pop out in relation to the two methods of assessments in the aforementioned study. According to Weurlander et al. (2012**:**756)**,** the individual assessment method could be said to reflect a view of assessment as knowledge control focusing on factual knowledge, whereas the group assessment method expressed a view of assessment as learning focusing on understanding and application. Assessment as knowledge control is fundamental to learning and it ought to remove an attitude of rote-learning. The view of assessment as learning is addressed in the next paragraph.

It may be reasoned that assessment as learning is another possibility for formative and summative assessments to be used collaboratively to enhance learning. A concept that has been discussed in scholarship circles is assessment of, for and as learning (Bennet, 2010). As stated by Bennet (2010:71) assessment of learning documents what students have achieved while assessment for learning facilitates instructional planning and is considered by students and teachers to be worthwhile educational experience in and of itself (assessment as learning). Chulu (2013:409) advocates for assessment systems that include classroom assessments for evaluating students' work and informing teaching and learning. Such systems would accommodate assessment of, for and as student learning, rather than as separate disjointed elements of the education enterprise.

In this case assessment as learning tends to be closely associated with both assessments of learning and assessment for learning. According to Dann (2014:150), assessment as learning is an essential foundation for both formative and summative assessments. Furthermore, she stated that assessment as learning is the complex interplay of assessment, teaching and learning in which students are active in both learning and assessment. Bourke and Mentis (2014:3) suggest the use of multiple purposes for classroom assessment in which different assessment approaches could afford for teaching in order to understand learning. Hence it would appear that assessment as learning is inclined towards being a catalyst for formative and summative assessments. I was convinced that the continuous assessment process at Solusi University could be boosted by a careful consideration of assessment as learning in the process of assessment of learning and assessment for learning.

This sub-section has shown that formative and summative assessments have their unique characteristics. Formative assessment has been referred to as assessment for learning. This is done during the process of learning and instruction to boost learning by engaging both students and teachers. Summative assessment on the other hand is also known as assessment of learning. This is usually done at the end of a learning period to document what students have achieved. Continuous assessment if properly done renders these two types of assessment to be mutually inclusive. Since assessment as learning is basic to both formative and summative assessments it can be used to bridge the gap between these two in terms of practice. It has emerged that there is a possibility for effective learning to take place in the collaborative use and management of formative assessment for summative purposes. Such endeavours should lead to self-regulation and self-regulated learning. Hence in this study I looked for elements of formative assessment being implemented as assessment for learning at Solusi University (see Section 5.2).

2.5. THE GOAL OF ASSESSMENT

The basic character of what continuous assessment is was addressed in section 2.3 vis-à-vis summative assessment as well as formative assessment. Now in this section the goal of assessment is being seen in the context of summative and formative assessments and also in relation to continuous assessment as well.

Accordingly, both summative and formative assessments have tended to be the norm in most institutions of higher learning. The choice of which of the two means or uses of assessment to adopt at each time is determined by the goal being pursued. Kidd and Czerniawski, (2010:36) summarised all the goals of assessment to the following four key factors:

1. Assessment for national standards (gaining and giving qualifications).
2. Assessment for selection (into institutions, programmes, sets within institutions).
3. Assessment for the diagnosis of need (as a means to provide adequate and appropriate support).
4. Assessment for learning.

The first three factors relate to summative assessment or assessment of learning. On the other hand, the fourth factor which is assessment for learning is essentially formative assessment (Harlen, 2006; Harlen, 2007b; Kidd and Czerniawski, 2010). Each of the goals listed above have strongly influenced how assessment practices have been done at Solusi University. Moreover, an analysis of each of these factors/goals would show that they may equally apply to both the summative and the formative nature of continuous assessment. I did this in order to show the relevance of each goal in the context of Solusi University.

The first factor on assessment for national standards is intended to fulfil certain specifications by which institutions of higher learning are measured. As such each institution would naturally tend to exert much effort to meet the expected standards. In the process of doing so issues of quality assurance come to the fore, (Cao and Li, 2014). Thence the standard of assessment ensures that quality is maintained. Several Course Outlines at Solusi University indicated that classroom assessment contributed to at least fifty percent of the final grade. Therefore, even formative assessment (assessment for learning) should endeavour to ensure that quality is maintained. The concept of quality assurance as it relates to assessment will be addressed in a later section.

The second factor/goal for assessment listed above is for selection into a given area of study such as sets within institutions. For example, at Solusi University the course ACCT 261-Taxation 1 is a pre-requisite for the course ACCT 262-Taxation 2 (2010-2012 Bulletin: 144); the course BIBL 451- Biblical Hebrew 1 is a pre-requisite for the course BIBL 452 Biblical Hebrew 2 (2010-2012 Bulletin: 342). These are known as sequence-type courses (2010-2012 Bulletin: 66). For one to be registered for each of these second series courses they should have obtained an average grade of (C) or better in the first series courses (2010-2012 Bulletin: 63). In this case the courses will have been examined by both formative and summative assessment because the final grade comes from continuous/formative assessment marks and the final examination.

Thirdly, Kidd and Czerniawski, (2010) state another goal of assessment to be for the diagnosis of need. In this case again at Solusi University, the final semester grade was used to identify those students who could both be put on academic probation and then also referred to the guidance and counselling section. This was done for any student whose cumulative Grade

Point Average (GPA) was below 2.00 (2010-2012 Bulletin: 69). The GPA is computed from both formative and summative assessments.

Finally, one of the goals of assessment is to contribute to learning. This one is more pronounced during the course of the regular classroom activities. This study strongly advocated for this goal to take centre stage at Solusi University. The use of both formative and summative assessment for grading purposes could put formative assessment in a more favourable position. The classroom activities including quizzes, tests and assignments could be used more purposefully to properly ground students in the various pre-requisite courses for, example in preparation for the next series courses. It would also be appropriate to diagnose those with special needs within the classroom activities so that they could be given immediate remedial help.

Therefore, even though the goals of assessment may appear to be different, there is possibility of overlap depending on the pedagogy of the institution. At Solusi University this overlap was the normal way of doing things. Each one of these goals should be used to contribute to self-regulation or self-regulated learning through purposeful planning and implementation of methods and processes. Hence self-regulation should be given more attention.

2.6. SELF-REGULATION AS THE MAIN GOAL OF ASSESSMENT

Self-regulation which leads to self-regulated learning is the main goal of assessment. In order for formative assessment to benefit both the teachers and the students, a viable classroom culture must prevail. Lajoie (2008) discusses the three constructs of metacognition, self-regulation and self-regulated learning and their relation and how they impact on learning. She contends that subsequent to a wide range of scholarly debate, the three terms have often been used interchangeably or in some cases embedded within each other (Lajoie, 2008; Dinsmore et al. 2008). These are important terms with regards to formative assessment. They are the basis for a viable classroom environment for learning as shown in the next paragraph.

Formative assessment has been noted for its ability to empower students as self-regulated learners (Nicol and Macfarlane-Dick, 2006). What then is self-regulation? Pintrich and Zusho (2002: 250) summarised self-regulation as an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition.

This corresponds with the notion that in practice, self- regulation is manifested in the active monitoring and regulation of a number of different learning processes, such as the setting of, and orientation towards learning goals; the strategies used to achieve goals; the management of resources; the effort exerted; reactions to external feedback and the products that come out (Nicol and Macfarlane-Dick, 2006; Yorke, 2003). Self-regulation positions the learner as an active participant of the learning processes.

Self-regulated learners require a platform on which to discover their potential. This may be realised as the student does self-assessment. In several studies seeking to explain the effects on students of self-assessment various results have been obtained. As a rule of thumb it has been noted that students require a rubric or some form of criteria in order to effectively self-asses. In one such study Andrade and Ying Du (2007) inquired into the responses of students to criteria referenced self-assessment. They engaged fourteen students who had taken a course involving self-assessment. The interviews revealed that students could effectively self-assess when they knew their teacher's expectations (Andrade and Ying Du, 2007:169). There were also indications of strong linkages in the study between self-assessment and self-regulation.

In a recent study Panadero and Romeo (2014:141) compared the effect of self-assessment without a rubric vs. self-assessment using a rubric for self-regulation. Two groups of students were assigned to be either non-rubric or rubric self-assessment for designing a conceptual map. After self-assessing their maps, the students completed a questionnaire to measure their self-regulation skills. They also responded to an open question on use of learning strategies, performance and accuracy. The results of the study showed that the use of rubrics enhanced learning self-regulation more than simply asking students to self-assess without a rubric. Hence the two preceding studies affirm the connectedness between self-assessment, rubrics, criteria and self-regulated learning.

As a way of fostering student self-regulation, Sadler (1989), observes from the writings of other researchers that students must be able to compare actual performance with a standard, and take action to close the gap between current and good performance. In order to do this, they must already possess some of the same evaluative skills as their teacher (Sadler, 1989; Yorke, 2003; Nicol and Macfarlane-Dick, 2006; Black, P., Harrison, C., Lee, C., Marshal, B. and William, D., 2003). Teachers can facilitate the development of self-regulation in students

by structuring learning environments in ways that make learning processes explicit, through meta-cognitive training, self-monitoring and by providing opportunities to practise self-regulation (Schunk and Zimmerman, 1994).

Studies have shown that students can be trained to enhance their self-regulation. Rosário, P., Núñez, J. C., González-Pienda, J., Valle, A., Trigo, L. and Guimarães, C. (2010) developed a programme to enhance first-year college students' self-regulated learning strategies. This was done in two sets of samples from the University of Oviedo in Spain and the University of Minho in Portugal. According to these researchers the core activity of the programme comprised a set of letters from a first year student reporting on his academic experiences. The theme and responses from the two focus groups were meant to confirm the ability of the program to teach efficient learning strategies and to promote self-regulation.

According to Rosário et al. (2010:417-418) infused in each one of the letters was the entire range of self-regulated learning strategies (i.e. goal setting, time management, note taking and test anxiety) and the corresponding processes such as self-reflection. There were six 90-minute weekly sessions which took place after classes and in which one of the letters was read and explored. Students were given opportunities to rehearse and apply these strategies to different tasks and learning contexts. They were trained to transfer these learning processes to their own learning and study contents. The programme was contrived to single out students who choose to control their learning instead of being controlled by the situation. It was also meant to discriminate students who choose to face learning tasks with a deep approach to learning (Rosario et al., 2010:415). In each case the findings of the study corroborated with the capability of the programme to instil efficient learning strategies and to promote self-regulation (Rosario et al., 2010:412).

Another study was done in the United States of America by Cho and Cho (2013) to find out if students could be trained in self-regulation using a social network system. The sample consisted of 29 undergraduate teacher education students from three sections of the educational technology course. These went through a two week training session followed by a nine week main session (Cho and Cho, 2013:622). During the training session students in the experimental group were taught the basic use of Twitter using instructions and demonstrations. They were then exposed to self-regulative skills and how to apply them on

Twitter. The method used included instructions, demonstrations and individual practical work. Informative feedback was given at the end of the training session.

The control group on the other hand did not receive training in self-regulative thinking skills but they were neither taught how to use Twitter nor given any feedback thereafter. During the nine week main session all the students completed four small projects and responded to questions by posting such on Twitter (Cho and Cho, 2013:623). The outcome showed that self-regulated learning skills were more pronounced in the experimental group than in the control group. The same pattern manifested itself in the students' class work at the end of the semester thus showing the relevance and practicability of training students to become self-regulated learners.

It goes without saying that self-assessment and self-regulation require mutual involvement of students and teachers in the learning process. Monitoring and self-evaluation are the crucial elements for self-regulation because their sum total is self-assessment (Pamadero and Romeo, 2014). Students must be given opportunities to self-assess using teacher-given rubrics. Rubrics are the teachers' initiative but whose implementation is done in consultation with the students. Hence students are expected to be active learners who however should be guided by careful planning with them by the teacher. This mutual involvement of students and teachers should be accompanied by appropriate training in self-regulative learning strategies. In my study I intended to investigate the possibility of any form of training in self-regulative learning strategies at Solusi University. It is now necessary to consider some of the general principles that can guide assessment practice.

2.7. PRINCIPLES AND GUIDELINES FOR THE ASSESSMENT PROCESS

The strength of prevailing assessment processes at Solusi University could be enhanced by a purposeful and critical exploration of principles of assessment. Nicol (2007) clarifies that principles help define and inform practice. It is of import to both lecturers and students to establish where learners are in their learning at the time of assessment. Several sources have given some principles and guidelines for the process of assessment. Each one of the sets of guidelines or principles outlined below was analysed separately in relation to their applicability to Solusi University.

Nitko and Brookhart (2011: 5) give the following principles and guidelines for assessment:

1. Be clear about the learning targets you want to assess.
2. Be sure that the assessment techniques you select match each learning target.
3. Be sure that the selected assessment techniques serve the needs of the learners.
4. Whenever possible, be sure to use multiple indicators of performance for each learning target.
5. Be sure that when you interpret or help students to interpret the results of assessment, you take the limitations of such results into account.

Both formative and summative assessments must be based on what students will have learnt during a given period. The teacher will have set some targets to be reached for that time. The course outlines at Solusi University contained broad course objectives for a particular semester. The key element to understanding learning targets is that both the teacher and the students must be clear about each one of the targets. The standard for assessing students in the university was via quizzes, tests (including the mid-semester examinations), and assignments. These were in the hands of individual subject teachers except for the final examinations which were subject to moderation by respective departments. Thus all the formative assessment instruments were not transparent enough to check for their authenticity in terms of meeting the learners' needs as well as adhering to principle.

Another set of principles for assessment is given by the New Leadership Alliance for Student Learning and Accountability (2012: 4-8). The following are listed as guidelines for assessment and accountability in higher education:

1. Set Ambitious Goals.
2. Gather Evidence of Student Learning.
3. Use Evidence to Improve Student Learning.
4. Report Evidence and Results.

Each one of these principles seems to put an emphasis on learning thus implying that all principles must enhance learning. The setting of goals is a responsibility that teachers have embraced at Solusi University as can be seen from the various course outlines. Nevertheless, policies and procedures are not clear to describe when, how, and how frequently learning outcomes will be assessed (New Leadership Alliance for Student Learning and

Accountability, 2012: 6). Evidence of student learning is gathered by way of records of grades. All grades are reported to the senate for final voting and recording.

Culture and practice should be informed by policies and guidelines. The following principles by Freeman and Dobbins (2013: 144) may be adopted as a way of boosting assessment practice. Table 2.2 shows each principle and my view of how it can contribute to improved assessment practice.

Table 2.2 Principles of Good Assessment Practice

	Principle	Contribution to Learning
1	Facilitates the development of self-assessment (reflection) in learning.	Brings the learners into the reality of learning and where they are in terms of cognition.
2	Encourages teacher and peer dialogue around learning.	Brings learners aboard as active participants in the learning process.
3	Helps clarify what good performance is (goals, criteria, and expected standards).	Engages the learners in understanding the goals, criteria and expected standards.
4	Provides opportunities to close the gap between current and desired performance.	Supports learning with a raised framework or platform.
5	Delivers high-quality information to students about their learning.	Keeps students abreast with their learning and develops further research and inquiry.
6	Encourages positive motivational beliefs and self-esteem.	Results in self-regulated learning.
7	Provides information to teachers that can be used to help shape the teaching.	Develops teaching for learning and not teaching for grading purposes.

Adapted from Freeman and Dobbins (2013)

A necessary inclusion to the Solusi University senate activities would be to incorporate well-articulated policies and procedures for using results to improve student learning at appropriate levels of the institution (New Leadership Alliance for Student Learning and Accountability, 2012: 7). The order of the day was to use results for grading students without much regard for the realisation of goals. Assessing learning outcomes is a custom that must be practiced in addition to the usual analysing of grade schedules. Once this custom is established it can help bring students aboard as active participants of the process of learning and assessment. It was my intention to establish whether there would be any evidence of good assessment principles in the formative assessment practices at Solusi University. It may also be argued that effective feedback is a critical ingredient for students to benefit in the formative assessment process.

2.8. THE ROLE OF FEEDBACK IN SELF-REGULATED LEARNING

Feedback is a critical component of any assessment system. Feedback has generally been defined as information provided to learners in response to their learning decisions, (Segedy, J. R., Kinnebrew, J. S. and Biswas, G., 2012:72). These argue that this is done in order to highlight differences between desired and current learner performance.

Taylor and da Silva (2014:795) point out that from a broad perspective, feedback can be defined as a mechanism to support learning, whether formally or informally, in either a formative or summative manner. A major strength of formative assessment is that students must be provided with feedback to promote learning, (Wylie et.al., 2012:21). Summative assessment also requires that feedback in the form of results be made available, (Harlen, 2007).

Feedback can be considered from various perspectives. McLean, A. J., Bond, C. H. and Nicholson, H. D. (2014: 3) insist that viewing feedback as a phenomenon, and looking at the variation in how that phenomenon is conceptualised, is important so that educators can engage with students and feedback in different ways. Viewing feedback as a phenomenon presupposes that it is a perceptible event that cannot be overlooked. The absence of a reflective evaluation process made the ongoing practice of continuous assessment at Solusi University to have a bias for rank ordering of students for grading purposes. As was hinted to earlier on in preceding paragraphs, the main feedback between students and lecturers was in

the form of written tests and assignments which were considered by both parties to be building blocks for a particular grade. Although tests and assignments are relevant, studies have shown that a single feedback is not sufficient to form the basis of any sound conclusions, (Rantanen, 2013). Single feedback is so called because it is not interactive in nature. It is single-phased and goes to one direction as lecturers return marked scripts and assignments to students. Single feedback is just one among various forms of feedback.

Feedback is not realised by simply giving students a set of quizzes and assignments and handing back marked scripts. Essentially, continuous assessment should be a two-way process involving both students and lecturers and it ought to be a vehicle for self-regulated learning. Such a process could best be captured in policy-related documents. There seemingly was no document to inform metacognitive approaches to continuous assessment at Solusi University. The likelihood therefore was that different departments may have been operating at different levels of formative assessment. This in turn could by implication mean different levels of expectations regarding students' performance. I wondered for example what should have determined the number of quizzes, tests or assignments. Were these given according to the number of units, topics, concepts or objectives covered? Some kind of guiding document to be used across the board or in departments would enumerate these processes.

The use of grades as a means of feedback has been given much attention by several scholars. Ramsden (2003) argues that effective comments on students' work represent one of the key characteristics of quality teaching. Carless (2006: 220) states that feedback should include responses to written assignments which encompass annotations and comments on drafts or on finalised assignments in addition to verbal dialogues prior to or after submission. According to Li and De Luca (2014:379) the term 'assessment feedback' refers to comments and grades that lecturers and tutors provide for the written work submitted by undergraduate students as part of course requirements in various disciplines within tertiary education. This shows formative assessment being used for summative purposes as was the case with Solusi University.

Studies have shown that it is expedient to move with caution when it comes to the use of formative assessment for summative purposes. Harrison, C. J., Ko¨nings, K. D., Schuwirth, L., Wass, V. and van der Vleuten, C. (2015) conducted individual interviews with 17 students from an institution where formative assessment was being used for summative purposes. The

findings revealed that the feedback conditioned students to focus on getting a grade rather than to excel in their studies. There was no clear evidence for students to want to use their feedback for future practical work except having a focus on avoiding failure. This compromises the need for formative assessment to be used for self-regulated learning.

Nevertheless, other scholars have noted that practically feedback should be conceived of as a process, rather than a product (McLean et al., 2014). Grades become a product if they are simply communicated to the student as an end in themselves. Consequently, as a way of strengthening assessment procedures, certain innovations have been propounded. One such innovation involves assessment dialogues and is propounded by Carless (2006:231). Within the same vein, Harks et al. (2014:273) discusses feedback's usefulness from an experimental point of view. The sentiments by the two sources are quite similar and they have been captured side by side in table 2.3. As has been shown assessment dialogues as suggested by Carless (2006) should be able to establish the usefulness of feedback as suggested by Harks et al. (2014).

Table 2.3. Assessment Dialogues and Feedback's Usefulness

	Carless	Harks et al.
	Unpacking assessment criteria or involving students in generating or applying criteria.	The perception of feedback's usefulness would enable students to correct erroneous knowledge components leading to a consequent improvement in their achievement.
	Reminding students that grades for assignments are awarded on the basis of these criteria.	By facilitating the enrichment of students' monitoring criteria, it would enhance self-evaluation accuracy;
	Low grades do not imply a rejection of the student, and hard work does not guarantee a high mark.	From a motivational point of view the perception of feedback as useful should contribute to a feeling of competence (feeling competent to deal with future test situations).
	The marking process itself; what tutors hope to achieve through their written annotations and how students might utilise them.	The development of interest in the particular test object.
	Second marking or moderation procedures, and possibly the role of boards of examiners and external examiners.	Calibration would be a subsequent occurrence.

Adapted from Carless (2006) and Harks et al. (2014).

Assessment dialogues were not the norm at Solusi University. There are few similarities and vast differences between current practice and the hints given by Carless (2006) and Harks et al. (2014). For example, the usefulness of feedback is hindered by the non-involvement of students in generating or applying assessment criteria. In such a case the only motivation that students would have is getting a good grade without much regard to the criteria being applied. This limits the feeling of competence to deal with future tests because the marking system encourages cramming or spotting the next test items. Therefore, much careful thought should have been given to how well current assessment practices at Solusi University could accommodate initiatives for effective feedback.

In that regard, Sadler (1989) cited by Nicol and Macfarlane-Dick (2006: 204) identifies three conditions necessary for students to benefit from feedback in academic tasks. He argues that the student must know:

1. What good performance is (i.e. the student must possess a concept of the goal or standard being aimed for);
2. How current performance relates to good performance (for this, the student must be able to compare current and good performance);
3. How to act to close the gap between current and good performance.

The assertions by Sadler (1989) cited by Nicol and Macfarlane-Dick (2006: 204) were reiterated by Brown (1999) cited by Hernández (2012:491-492). Table 2.4 presents a comparison of the three sets of conditions for effective feedback as given by the two sources.

Table 2.4. Conditions for Effective Feedback

	Sadler (1989) cited by Nicol and Macfarlane-Dick (2006)	Brown (1999) cited by Hernández (2012)
1	Student must know what good performance is.	State what is going to be assessed and the standard required in a transparent way.
2	Student must know how current performance relates to good performance.	A judgement of the students' work needs to be provided.
3	Student must know how to act to close the gap between current and good performance.	The feedback given to students should help them to address the gap between what they know and what is expected of them.

Adapted from Nicol and Macfarlane-Dick (2006), Hernández (2012).

The three sets of conditions are similar and could be interpreted in the context of current formative assessment practice at Solusi University. The first condition relates to the goal for good performance. In this case grades cannot serve as a goal for good performance because they tend to promote rote learning. Performance should be conceived of in terms of the intended learning or standard to be accomplished (Brown, 1999 cited by Hernández, 2012). Assignments and assessments should be set up in order to judge the students' work. Nevertheless, students need more valid information than just grades to show the missing gaps in their performance. Feedback informs instructional activities to be aligned directly with the intended outcomes. A new topic cannot be embarked on if feedback shows that learning in the previous topic was not realised.

Consequently, it is incumbent on lecturers to explore ways of adopting feedback practices that benefit the learners. Nicol and Macfarlane-Dick (2006: 200-202) give certain insights that may help to clarify the point about effective feedback. In their argument, they note that in higher education, formative assessment and feedback are still largely controlled by and seen as the responsibility of teachers. Feedback is still generally conceptualised as a transmission process where teachers 'transmit' feedback messages to students. It is observed by Nicol and Macfarlane-Dick (2006:200-202) that there are a number of problems with this transmission view when applied to formative assessment and feedback:

1. If formative assessment is exclusively in the hands of teachers, then it is difficult to see how students can become empowered and develop the self-regulation skills needed to prepare them for learning outside university and throughout life.
2. There is an assumption that when teachers transmit feedback information to students these messages are easily decoded and translated into action.
3. Viewing feedback as a cognitive process involving only transfer of information ignores the way feedback interacts with motivation and beliefs.
4. As a result of this transmission view of feedback, the workload of teachers in higher education increases year by year as student numbers and class sizes become larger.

The main point being raised by these assertions is that both teachers and students must be deeply involved in the learning process if feedback is to be effective. Clarke (2012:217) postulates that formative assessment is not a test or a tool but a process with the potential to support learning beyond school years. The formative feedback at Solusi University mainly in

the form of information on grades tended to ignore aspects of motivation and beliefs. Effective feedback should offer guidance on the knowledge and skills that students possess and crucially act as a motivational instrument for future work (Blair, A., Curtis, S., Goodwin, M. and Shields, S., 2013). Since formative assessment also serves a summative function at Solusi University, there was little room to check if the students had easily decoded the feedback and acted on it. Teachers were also overwhelmed by large numbers of students in several courses. As a result of this effective feedback ran the risk of being highly compromised. This called for deliberate efforts to reposition the formative assessment culture and practice in the institution.

Freeman and Dobbins (2013) insist that both educators and students can make effective use of the assessment feedback. In order for this to be realised, both must understand and be engaged in the purpose and goals of the course. Consequently, they would then engage effectively in course development. As part of the reflective evaluation process educators should be clear themselves and with the students about their own goals for the course. A closer look at the documents being used to inform assessment practice at Solusi University revealed some deficiencies in this area. A framework to consolidate the various assumptions and practices would be an ideal innovation for the formative assessment process in the institution.

As a way of consolidating the foregoing discussion in this section, it is of necessity to consider some of the studies that have been carried out in the area of feedback. Several studies have been conducted in order to find out what feedback is and what it is not. These studies have revealed how feedback comes in many different kinds and for different purposes. The findings of these studies may be viewed especially in order to see the effect or non-effect of certain kinds of feedback on learning. Other studies have brought out students' perceptions on the various forms of feedback.

In one study Harks et al. (2014) sought to compare the use of grades for feedback with process-oriented feedback in order to establish the cognitive, motivational and metacognitive effects. The following are the characteristics of process-oriented feedback (Harks et al., 2014:272):

1. It uses an individual and criterion reference standard.

2. It refers to specific tasks and processes.
3. It supports internal unstable attributions in the case of failure.
4. It provides elaborated feedback information on individual strengths and weaknesses.
5. It provides competence supportive strategies on how to reach the learning goal.

An equal number of students were assigned to the two forms of feedback with slight variations for each of the three chosen content domains. After an initial instructive and training session the participants went through the whole exercise of tests, grading and appropriate feedback. Process-oriented feedback manifested a more positive indirect effect on students' interest and achievement change than grade-oriented feedback (Harks et al., 2014:282). These findings are in line with the notion that practically feedback should be conceived of as a process, rather than a product (McLean et al., 2014).

There are various perceptions of students about what assessment feedback is and is not. In a study conducted at two British universities, Blair et al. (2013) surveyed 308 students to find out their understanding of what feedback should be or should not be. Although the responses of the students indicated that they recognised the value of feedback, they expressed frustration in the manner and timeliness of giving feedback. According to Blair et al. (2013:76), the findings of the survey led to the following recommendations each of which is embedded in the students' perceptions:

1. Make it clear to students when feedback is being provided. The survey results indicate that students tend to view feedback as consisting of formal, written comments on assignments. By contrast, students are less aware that feedback is often provided in a continual manner, from informal discussions outside a lecture through to e-mail exchange.
    - The current study was undertaken with a desire to see feedback not being limited to formal written comments on quizzes, tests and assignments at Solusi University.
2. Formalise verbal feedback and dialogue around feedback within the module design. The evidence indicates that feedback mechanisms that result in students 'chasing' the feedback during office hours are highly unsatisfactory. As a result,

there is a need for lecturers to move away from a reactive approach to a proactive approach to providing feedback. This could result in dedicated feedback sessions within timetabled teaching time.

- The current study noted the yawning gap for a proactive approach to providing feedback at Solusi University.

3. Create mechanisms to provide exam feedback that include both pre and post exam feedback. The absence of feedback on exams is a major cause of students' dissatisfaction with current assessment practices. Evidence supports the use of model exemplars in exam preparation having a positive impact on improving student exam performance.
    - The current study noted that pre exam and post exam feedback could be totally missing in the continuous assessment process at Solusi University. While small traces of pre exam feedback may have been seen in the form of spotting likely questions to come in the final examination, a mechanism for pre exam and post exam needed to be created.
4. Embrace a wider range of feedback mechanisms. Audio or e-mail feedback can reproduce some of the advantages of verbal feedback while reducing the need for students to 'chase' verbal feedback and reducing the strain on staff time.
5. Ensure that feedback is provided in a timely and accessible manner so that students can act upon the advice provided.

I also contend that peer interactions should be on-going in the process of feedback. From a formative assessment perspective, peer review brings students aboard as active participants in assessment for learning. According to Nicol (2010), when students participate in a peer review exercise, they take on several distinct roles:

1. The first role is as the author of a piece of work.
2. They then become assessors, reading work produced by one or more peers, forming an opinion on the work and generating feedback.
3. Next, they become receivers of feedback, making choices as to which advice to follow and which to discard.

As stated in section 2.6 students can be assisted to become better peer reviewers through training in self-regulated learning strategies. Consequently, direct assessment feedback can be given effectively by fellow students. Barnard, R., Luca, R. D. and Li, J. (2014) also did another experiment with first year undergraduate lecturers and students for the purposes of acquiring their reactions to peer feedback. By way of collaborative research both groups gave written comments about their experience of peer review. The general consensus was that students gained skills in scaffolding one another's work whereas teachers also discovered ways to improve their pedagogical strategy (Barnard et al., 2014:8-9).

A congenial formative assessment environment should give students the chance to give feedback to each other. It is thus fundamental that feedback strategies should be explored so as to boost formative assessment practices. The findings from various studies have shown that feedback is not to be tied to handing back marked work or giving grades. Institutions should create environments for proactive feedback and students must be trained to acquire self-regulative learning strategies so that they can give peer feedback.

It has been shown that feedback is a two-way process of engagement where students are included as part of the learning and assessment that take place. It can be done formally using marks and scores or informally using dialogue. Effective feedback involves transparency in terms of goals, criteria and expected standards. The assessment process and the subsequent feedback must correspond with the given objectives for learning. Each process should be used to bring about self-regulated learning. I intended to find out how much and what form of feedback was being applied in the formative assessment process at Solusi University. Feedback is a metacognitive self-regulated learning step in formative assessment. Thus metacognition has a big role in enhancing formative assessment and learning.

2.9. THE ROLE OF METACOGNITION IN LEARNING

The need for a student-centred assessment for learning cannot be over emphasised. This can be achieved by use of metacognition. The concept of metacognition has been discussed from various perspectives. Martinez (2006) argues that Metacognition is important and consequential for learners of all ages. Lai (2011) concurs by pointing out that educational psychologists have long promoted the importance of metacognition for regulating and supporting student learning. Metacognition was originally referred to as the knowledge about

and one's regulation of cognitive activities in the learning processes (Brown, 1978, Flavell, 1979, Veenman, M.V. J., Bernadette, Van-Hout-Wolters, H. A. M. and Afferbach, P., 2006).

Lai (2011:4) identifies several other definitions of metacognition given by researchers in the field of cognitive Psychology:

- **"**The knowledge and control children have over their own thinking and learning activities" (Cross and Paris, 1988: 131).
- "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 relation 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" (Hennessey, 1999: 3).
- "Awareness and management of one's own thought" (Kuhn and Dean, 2004: 270).
- "The monitoring and control of thought" (Martinez, 2006: 696).

The definitions above may be summarised in the words "knowledge, awareness, control and monitoring," on the part of students and even teachers as well. Most writers make a distinction between metacognitive knowledge, that is, what one knows about cognition, and metacognitive processes and how one uses that knowledge to regulate cognition (Brown, 1987; Baker, 1991; Schraw and Moshman, 1995). Scholars generally recognise knowledge about cognition and monitoring of cognition as the two constituent elements of metacognition. According to Schmitt and Newby (1986), these elements may also be referred to as the interdependent phenomena/components involved in metacognition (see Table 2.5).

Table 2.5 The Two Components of Metacognition

METACOGNITION	COMPONENTS		
	KNOWLEDGE	OF	PERSONAL COGNITIVE RESOURCES TASK REQUIREMENTS
	REGULATION	INVOLVES	PLANNING REVISING MONITORING

Adapted From Maribeth Cassidy Schmitt and Timothy J. Newby (1986).

Notwithstanding, other scholars note that there are three components of metacognition. According to Wagener (2013: 850) the three categories of metacognition are metacognitive knowledge, regulation of cognition and metacognitive experiences. These have been summarised in Table 2.6. The third component, metacognitive experiences comes as a result of either the conscious activation of metacognitive knowledge or by the regulation of one's cognition (Wagener, 2013). In this case, the two components namely knowledge about cognition or regulation of cognition may be shown to set off a stream of metacognitive experiences.

Downing and Shin (2012: 351) also concur with other scholars who divide metacognition into three types of thinking namely: (1) metacognitive knowledge-what one knows about knowledge; (2) metacognitive skill-what one is currently doing; and (3) metacognitive experience-one's current cognitive or affective state. Meijer, J. , Sleegers, P., Elshout-Mohr, M., van Daalen-Kapteijns, M., Meeus, W. and Tempelaar, T., (2013) contend that this third component of metacognition has received little attention even though it has a direct bearing on metacognitive knowledge or regulation of cognition. These are discussed in the next paragraph.

Table 2.6 The Three Components of Metacognition

	Component		
Metacognition	Metacognitive Knowledge	Of	Cognitive Strategies Tasks and Contexts Self
	Regulation of Cognition	Through	Monitoring Control
	Metacognitive Experiences	described as	Conscious experiences of: what one is doing; Progress being made

Adapted From Wagener (2013)

Knowledge about cognition or metacognitive knowledge is an important element in both learning and continuous/formative assessment. Knowledge of cognition includes declarative,

procedural and conditional knowledge (Brown, 1987; Schraw and Moshman, 1995). These three together may refer to what a student knows about themselves as cognitive processors (Pihlainen-Bednarik and Keinonen, 2011; Papaleontiou-Louca, 2008; Schraw and Moshman, 1995). Thus knowledge about cognition includes aspects of metacognitive experiences within the three specific aspects.

Declarative knowledge includes knowledge about oneself as a learner and what factors might influence one's performance (Lai, 2011; Schraw et al.; 2006; Schraw and Moshman, 1995). This may also be characterised as epistemological understanding (Kuhn and Dean, 2004) which encompasses declarations of definitions, hypotheses, theories and theorems (Higley, 2009). Heritage (2010:105), explains that declarative knowledge has to do with knowing what the strategy is. In this study declarative knowledge was used with regards to knowledge about concepts, theories, definitions and fundamental principles of a specific core course or subject during the semester.

Procedural knowledge is knowledge about the execution of procedural skills (Schraw and Moshman, 1995). It involves the awareness and management of cognition, including knowledge about strategies and ability to utilise one's skills (Lai, 2011; Schraw, G., Crippen, K.J., and Hartley, K., 2006)). Procedural knowledge is about knowing how the strategy operates, (Heritage, 2010:105). In this study procedural knowledge was used in connection to the application of the various concepts, theories, definitions and fundamental principles of a specific core course or subject during the semester.

Conditional knowledge according to Lai (2011) and Schraw et al. (2006) refers to knowledge about why and when to use a given strategy. This refers to knowing when and why to apply the various cognitive actions (Garner, 1990; Lorch, R.F., Lorch, E.P., and Klusewitz, M.A. 1993; Schraw and Moshman, 1995). In this study conditional knowledge referred to knowing when and why to use a given strategy (Heritage, 2010).

Research indicates that skilled learners possess cognitive knowledge in the form of declarative, procedural and conditional knowledge. This knowledge usually improves learning (Schraw and Moshman, 1995). These three, according to Heritage (2010:105), are the types of strategy knowledge which help students to increase their metacognitive abilities. It goes without saying therefore that knowing a concept or theory is not enough. There is also

a need to know how the concept or theory is applied as well as knowing when and why to apply the particular concept or theory. An effective assessment system comes as a result of a teaching/learning process that should certainly have incorporated cognitive/strategy knowledge.

Monitoring of cognition or cognitive regulation is the second constituent element of metacognition. This also is an important component in the process of continuous assessment. Cognitive regulation refers to a set of activities that help students control their learning (Vrugt and Oort, 2008). Regulation is the more observable aspect of metacognition and presupposes the existence of knowledge (Schmitt and Newby, 1986:30). It is the on-going, active tracking down of mental processing and use of regulatory strategies to facilitate cognitive performance (Flavell, 1979, Schraw and Moshman, 1995).

The three major subsets of cognitive regulation characterise how cognitive performance is facilitated. This typifies self-regulated learning in which learners are consciously thinking about their learning (Heritage, 2010:105). The first one is planning which refers to the identification and selection of appropriate strategies and allocation of resources. Such activities as goal setting, activating background knowledge and budgeting time will be used in this study as part of planning (Lai, 2011). Students can be made aware of such activities if there is a systematised metacognitive approach to teaching and learning.

Secondly, cognitive regulation involves monitoring or regulating. This study contends that students should be able to attend to and be aware of comprehension and task performance and also be able to do self-testing (Lai, 2011). The terms monitoring of cognition, cognitive regulation and metacognitive regulation may be used interchangeably. Monitoring is a data-driven process that provides self-generated feedback for students to control their learning and performance (Nietfeld et al., 2005). Because of this, students will sense their need to adjust to the learning environment and make tactical decisions regarding their education (Everson and Tobias, 2001).

Evaluating is the third major subset of cognitive regulation. According to Schraw et al. (2006: 114) as quoted by Lai (2011), evaluation is "appraising the products and regulatory processes of one's learning," and includes revisiting and revising one's goals. It is thus incumbent upon

both the lecturer and the student to monitor regulation by revisiting and revising together the given goals. This study looked at evaluation from this perspective.

Scholars have compared metacognitive skills to intelligence and found that they are moderately correlated (Veenman, et al., 2006; Sternberg, 1990). Nevertheless, metacognitive skills do actually contribute to learning. An adequate level of metacognition may compensate for students' cognitive limitations (Veenman, et al., 2006). This study was anchored on the premise that metacognition should be an important ingredient in the continuous assessment model. Whether academically gifted or not students must not just learn how to pass. They must learn how to learn. The end product of assessment must not just be a certified person but someone whose level of operation reflects well-grounded methods of teaching and learning.

It is possible to develop metacognitive skills and habits in the classroom. Martinez (2006:699) puts forward three suggestions on how this can be done at all levels of learning and education. He suggests that:

1. Students must have the opportunity to practice and so must be placed in situations that require metacognition.
2. When a teacher "thinks aloud," particularly during problem solving, his or her verbalizations can be a powerful source of cognitive processing that can be internalized by students.
3. Just as teachers should model metacognition, social interaction among students should be used to cultivate their metacognitive capacity.

Hence it is evident that students can be led to metacognitive experiences. It is also clear that metacognitive ability can be cultivated both through the teacher and other students. Meijer et al. (2013) advocate for the development of educational interventions meant to discover and improve metacognitive skills in students. Wagener (2013) insists that metacognition is activated in most learning situations, and especially in completely self-regulated ones. Effeney, G., Carroll, A. and Bahr, N. (2013:774) note that the skills and processes associated with self-regulated learning are often couched in terms of metacognition. They thus deduce that students can be described as self-regulated to the degree that they are metacognitively, motivationally and behaviourally active participants in their own learning process.

Metacognition has been seen to affect many areas of significance in the learners. Several studies have been carried out to establish the role of metacognition in such areas as temperament, emotions and achievement. Studies have shown that there is a relationship between temperament and metacognition and how each one of these can predict emotion (Dragan and Dragan, 2013). Metacognition plays a contributory role in emotional regulation. Franks, B. A., Therriault, D. J., Buhr, M.I., Chiang, E. S., Gonzalez, C. M., Kwon, H. K., Schelble, J. L. and Wang, X. (2013) note that students must exercise metacognition to be able to comprehend advanced reading material and to evaluate the reasoning modelled in texts. As such an inseparable and accurate link between metacognition, students' approaches to study and improved cognition should be an apparent reality. It is clear that any assessment system needs metacognitive initiatives to engage students on a more productive level. Students do not just want to be assisted to move from one stage of study to the other. They need skills and behaviours that enhance learning.

In this section, Metacognition has been given various definitions by various authors. The definitions may be summarised in the words "knowledge, awareness, control and monitoring," on the part of students and even teachers as well. Some scholars have noted knowledge about cognition and monitoring of cognition as the two constituent elements of metacognition. Other scholars have divided metacognition into three components namely metacognitive knowledge, regulation of cognition and metacognitive experiences. Metacognition and self-regulation are seen to be closely associated. Students can be described as self-regulated to the degree that they are metacognitively, motivationally and behaviourally active participants in their own learning process. Hence metacognition has been discovered to be enmeshed in the formative assessment activities and it cannot be ignored. This knowledge about metacognition had implications for my study. I purposed to find out how a metacognitive self-regulated learning approach could enhance formative assessment at Solusi University.

2.10. RESEARCH ON METACOGNITION AND ITS IMPLICATIONS FOR SELF-REGULATED LEARNING

There has been considerable research on metacognition and its implications on learners at all ages from preschool to tertiary education. The current study explored some of these studies whose findings have implications for students and teachers in higher education. It has been

recognised that students can be trained to improve their metacognitive skills. In Section 2.6 references were made to some of the studies that have shown that students were given training in self-regulative skills (Rosario et al., 2010; Cho and Cho, 2013). Self-regulation training is a major way of training in metacognition.

Another form of metacognitive training involves awareness and consciousness. Wagener (2013) conducted a longitudinal study and discovered that metacognition had improved in a group of students who had received autogenic training. In the study two groups of students were divided into the experimental and control group respectively. The experimental group was given training and tests in attention practices. The attention practices training were meant to be a metacognitive process of being aware of one's own cognition thus predicating awareness and consciousness (Wagener, 2013:849). The control group was not given any awareness training but both groups were given attention practices tests. In Wagener's study, the Metacognitive Awareness Inventory (MAI) was used to measure the students' metacognitive knowledge and regulation before the beginning of the training course and 4 months later. The results indicated that the experimental group manifested improvements in their awareness and consciousness unlike the control group. The findings exhibited the ability of autogenic training to generate and adjust metacognitive knowledge, while training the abilities on which metacognitive regulation relies (Wagener, 2013: 857). This study suggested that all students have metacognitive potential which just needed to be cultivated.

Metacognition can also be improved by an adaptive classroom environment. Thomas and Anderson (2014) conducted a study with regards to changing a classroom environment in order to enhance metacognition. They were motivated by previous studies to show that use of a shared language of thinking and learning would enable students and teachers to discuss a subject and how it can be learned. They were guided by two research questions; (1) Does communicating with students about chemistry learning processes with reference to the three-level framework of chemistry representation alter the metacognitive orientation of a chemistry classroom learning environment? (2) Might any changes in the metacognitive orientation of a chemistry classroom learning environment influence students' metacognition in relation to their chemistry learning processes? (Thomas and Anderson, 2014:142).

Accordingly, the teacher of the focus group altered his pedagogy by refining the classroom discourse. The innovations included use of metaphors to invoke reflective thinking, providing

cognitive and emotional support and having rapport with the students. Two sets of instruments and on the ground observations and interviews were used to collect the data. The Metacognitive Orientation Learning Environment Scale-Science (MOLES-S) and the Self-Efficacy, Metacognition Learning Inventory-Science (SEMLI-S) were used to explore the students' metacognition and science learning processes. The students completed the instruments at the beginning and end of a 12-week observation and they were also interviewed individually on the same timing (Thomas and Anderson, 2014). The outcome of the study showed that there was a corresponding change in the classroom metacognitive orientation and the students' metacognition.

What is clear from Thomas and Anderson's study is that the classroom environment was altered as a result of metacognitive training for both the teacher and his students. According to Thomas and Anderson (2014:153), "Students' metacognition should be developed and enhanced though explicit and well-considered teaching activities and discourse that recognise the importance of the teacher in altering classroom environment in order to affect student change." The findings of this research entail that there is room for a metacognitive improvement of formative assessment at Solusi University. Conducting such studies may be part of the endeavours to abate the status quo by training both teachers and students in self-regulative skills.

Other studies have been carried out to show how teachers and students can be trained in metacognitive skills. Hudesman, J., Crosby, S., Flugman, B., Issac, S., Everson, H. and Clay, D. B. (2013) did a three year study within a formative assessment context in order to establish whether students' academic performance can be improved by equipping them with metacognitive skills. They applied a model called the Enhanced Formative Assessment Program (EFAP) that featured a Self-Regulated Learning (SRL) component. The following operational features of the model according to Hudesman et al (2013:3-4) were designed to effectively deliver a range of different course material:

1. Instructors administer specially constructed quizzes that assess both the students' academic content and SRL competencies.
2. Instructors review and grade the quizzes to provide feedback about both the content and SRL competencies that students struggled with; instructors also use quiz feedback to adjust their instruction.

3. Students complete a specially constructed self-reflection and revision form for each incorrectly answered quiz question, which affords them an opportunity to reflect on and then improve both their academic content and SRL processes that were incorrectly applied.
4. Instructors review the completed self-reflection forms to determine the degree to which students have mastered the appropriate academic content and SRL skills. Based on the instructor's evaluation of their work, students can earn up to the total value of the original quiz question. Based on the reflection form data, instructors also have an additional opportunity to make changes to the academic content and SRL topics to be covered in upcoming lessons.
5. Instructors use the feedback provided by the quiz and self-reflection form as the basis for on-going class discussions and exercises, during which students discuss the relationship between their academic content and SRL skills. The students develop plans to improve these areas.

Prior to the implementation of the AFAP-SRL programme selected instructors were given theoretical and practical training. The students enrolled in the EFAP-SRL programme formed the experimental group while those not enrolled in the programme were the comparative group. All of these students did the same developmental mathematics course during various semesters over a period of three years.

Findings showed a demarcation in the performance of the students from the two groups. Although the pre-test scores were found to be equivalent for the students assigned to the EFAP-SRL and the comparison group sections, the post-test scores yielded a different result. The outcome revealed that the students enrolled in the EFAP-SRL displayed significant improvement and better performance in both developmental and college-level mathematics. On the overall they outperformed the other students in the comparative group.

The critical element in the EFAP-SRL model is the metacognitive training component. The initial training of instructors was the point of departure. Once the teachers were on board the whole exercise was contagious in nature. The teachers were being sharpened in self-regulative skills while they engaged the students as was alluded to in the operational features of EFAP-SRL.

It is therefore crucial to create a platform where students can discover their metacognitive skills. These should help instil a culture of student-teacher-peer interaction in a classroom setting. Such dialogues are vital for tying up with the notions on effective feedback. Formative assessment as a two-way process of self-regulated learning will become a reality. Nevertheless, this requires a well-structured system that is informed by a carefully crafted framework of operation. The availability of such a framework in the form of a guide for the formative assessment practices at Solusi University was one of the aspects that I intended to investigate.

2.11. SELECTED THEORIES OF LEARNING

Perhaps a brief look at some of the learning theories should help to give the right perspective about metacognition. An understanding of theories of learning adds value to the perception that self-regulated learning takes place in a variety of environments. Woolfolk Hoy, A., Davis, H. A., and Anderman, E. M. (2013: 19) highlight the individual and synergistic contribution of the theories of learning to professional practice. According to Moeed (2015: 184), underpinning formative assessment with learning theories is achievable and makes sense. Table 2.7 gives a summary of his arguments to show how certain theories of learning are interlaced with a teacher's actions in a normal class situation.

Table 2.7 How Learning Theories Underpin Formative Assessment

Learning Theory	Teacher's Actions
Cognitive	-Fosters thoughtful reflection -Encourages students to think about their learning -Teaches them to be metacognitive -Focuses on understanding and provides opportunities to express their ideas
Constructivism	-Establishes students' prior knowledge -Plans the next teaching steps to link new ideas with what students already know
Social Constructivism	-Interacts with students through listening carefully and questioning -Helps them to understand the ideas, thereby enabling them to connect prior and new learning social
Sociocultural	-Teacher and students collaboratively work toward enhancing learning -Classroom environment encourages taking risks with learning and values discourse
Behaviorism	-Provides feedback orally or in writing -Stimulates students to respond to and use this feedback

Adapted From Moeed (2015)

In other words, teachers gain insights on various approaches to teaching which should include such elements as planning and presenting lessons, involving students and assessment. Schunk (2009) reveals that although there are various cognitive self-regulated learning theories, three

that have been applied extensively to school learning are information processing, social constructivist, and social cognitive theories. Each one of these is constructivist in nature.

Constructivist theories of learning are worth considering in the context of assessment because of their relationship to self-regulated learning. Zeidan (2014) understands the term constructivism to mean that learning is an active process during which a learner constructs knowledge rather than acquires knowledge through direct transmission by the teacher. It is an educational theory that emphasizes hands-on, activity-based teaching and learning in which students develop their own frames of thought (Keengwe et al., 2013). Similarly, Barrett and Long (2012: 76) state that the constructivist theory propounds that an individual learner must actively build content and new knowledge, and that information exists within these built constructs internal to the learner rather than in the external environment.

Bruning, R.H., Schraw, G.J., Norby, M.M. and Ronning, R.R. (2004) cited by Woolfolk, A., Hughes, M. and Walkup, V. (2008) state that there is no one constructivist theory of learning, but most constructivists share two main ideas: (1) that students are active in constructing their own knowledge; (2) that each student individually (and socially) constructs meaning as he or she learns. In the same way, Kwan and Wong (2014: 193) argue that although constructivism is drawing more and more attention, there is no single constructivist theory of instruction. In their view instructional principles of adopting constructivism are that: (1) learners are active participants in their learning; (2) learners are self-regulated; (3) social interaction is necessary for effective learning; and (4) individuals make sense of information for themselves.

Similarly, Andrade, (2013: 21) argues that in one form or another, regulation plays a key role in all major learning theories. He outlines four main processes involved with the regulation of learning: (1) goal setting, (2) the monitoring of progress toward the goal, (3) interpretation of feedback derived from monitoring, (4) adjustment of goal-directed action including, perhaps, redefining the goal itself. Table 2.8 is a reflection of the comparison between these four processes with the four principles of adopting constructivism as suggested by Kwan and Wong (2014). Each one of them seem to be saying the same thing but in different words. In this study I refer to them as self-regulated principles of constructivism.

Table 2.8 Self-Regulated Principles of Constructivism

	Andrade (2013) Regulation of Learning Processes		Kwan and Wong (2014) Principles of Adopting Constructivism	Explanation of Comparison
1	Goal setting	1	Learners are active participants in their learning	Active learners participate in goal setting
2	The monitoring of progress toward the goal	2	Learners are self-regulated	Self-regulated learners monitor progress toward goals
3	Interpretation of feedback derived from monitoring	3	Social interaction is necessary for effective learning	Interpretation of feedback via teacher-peer-peer social interaction
4	Adjustment of goal-directed action	4	Individuals make sense of information for themselves	Learners make sense of feedback information and can adjust goals

Adapted from Andrade (2013) and Kwan and Wong (2014)

These principles take cognisance of the theory and practice of formative assessment which combines cognition, social, and cultural theories. These are the ones which guide instructional methods and drive self-regulated strategies and lifelong learning competences among learners Elwood and Murphy (2015: 184). Active learners are self-regulated learners who actively participate in their learning through social interaction. The learners will interact with the teacher and with each other as well as their environment. Formative assessment will not just be summative in nature (to award scores or marks) but it will also be informative in nature (to allow students to make sense of the assessment information on their own).

Vygotsky's theory of development provides a social constructivist account of self-regulation because it does explain learning in the context of social interactions and culture (Schunk, 2009; Woolfolk, et al., 2008; Palinscar, 1998; Prawat, 1996). Lev Vygotsky (1896–1934) believes that people and their cultural environments constitute an interacting social system (Schunk, 2009). His theory is also psychological as it touches on the coordination of such

mental processes as memory, planning, synthesis and evaluation in self-regulated learning (Schunk, 2009). The notion that Vygotsky's theory is both psychological and social is further elaborated by Woolfolk et al. (2008: 413) as cited below:

> In a sense, Vygotsky was both…For example, Vygotsky's concept of the zone of proximal development-the area where a child can solve a problem with the help (scaffolding) of an adult or more able peer-has been called a place where culture and cognition create each other (Cole, 1985). Culture creates cognition when the adult uses tools and practices from the culture (language, maps, computers, looms or music) to steer the child towards goals the culture values (reading, writing, weaving, dance). Cognition creates culture as the adult and the child together generate new practices and problem solutions to add to the cultural group's repertoire.

Scholars still consider Vygotsky's theory to be both psychological and social in nature. According to Gredler (2012:125), Vygotsky identifies two cognitive processes that are important in any classroom approach intended to developing thinking. They are the extent of the student's (a) conscious awareness of his or her own thinking and (b) understanding of the psychological nature of the task. The first process takes place within the social environment. The student may be made aware of his/her own thinking by interacting with the teacher, peers and others around his/her environment. This may also include interaction with learning materials such as the computer. The second process comes primarily from the guidance of the teacher and then also from the significant others.

Vygotsky's concept of the Zone of Proximal Development (ZPD) has been discussed in various academic works by scholars. According to Balakrishnan and Claiborne (2012: 232), the ZPD is a notion that takes into account individual differences and is focused on the communicative nature of learning in which the students come to an understanding of the task they are performing. Vygotsky proposed that all higher-order thinking originates in the social environment through social activity (Kwan and Wong, 2014). In the context of assessment, Vygotsky's theory presupposes that assessment methods must take into account the zone of proximal development. What students can do by themselves is their level of actual development and what they can do with help is their level of potential development. Assessment methods must target both levels.

Another cognitive self-regulated learning theory that has been applied extensively to school learning is Bandura's social cognitive theory. This is so called because it focuses on cognitive factors such as beliefs, self-perceptions and expectations (Woolfolk et al., 2008; Hill, 2002).

Social cognitive theory distinguishes between enactive and vicarious learning. Enactive learning is learning by doing and experiencing the consequences of your actions while vicarious learning is learning by observing others (Woolfolk et al., 2008). This theory is further expounded by Schunk (2009: 3) in his article and he argues that:

> Human functioning results from reciprocal interactions among personal factors (e.g., cognitions, emotions), behaviours, and environmental conditions. Self-regulated learning fits well with this idea of reciprocal interactions because personal factors, behaviours, and environmental conditions change during learning and must be monitored. This process is reflected in Zimmerman's (2000) three-phase self-regulated learning model comprising forethought, performance/volitional control, and self-reflection. The forethought phase precedes performance and refers to processes that set the stage for action. The performance/volitional control phase includes processes that occur during learning and that affect motivation and action. During the self-reflection phase, learners mentally review their performances and determine whether changes in behaviours or strategies are needed.

The social cognitive theory also has implications for assessment. It is incumbent upon the teacher to provide an environment that supports learned behaviour to take place. Enactive and vicarious learning come as a result of reciprocal interactions among personal factors, behaviours and environmental conditions (Woolfolk et al., 2008; Schunk, 2009).

Information processing theories have been known to be constructivist in nature because they stress cognitive functions such as attending to, perceiving, storing, and transforming information (Mayer, 1996; Woolfolk et al., 2008; Schunk, 2009). The human mind is regarded as a symbol processing system which converts sensory input into symbol structures (propositions, images or schemas). These are then processed so that knowledge can be held in memory and retrieved (Woolfolk et al., 2008). Winne and Hadwin (1998: 277) postulate that during information processing self-regulated learning comprises four phases: defining the task, setting goals and planning how to reach them, enacting tactics, and adapting metacognition. The outside world is seen as a source of input, but once the sensations are perceived and enter working memory, the important work is assumed to be happening in the brain of the individual (Schunk, 2000; Vera and Simon, 1993; Woolfolk et al., 2008). Thus this theory suggests that cognitive information is processed by metacognitive approaches to learning.

There has been considerable study to show the value effect of constructivist theories in a learning situation. In one such study Patterson (2011) inquired into the perceptions of student

teachers regarding the benefit of a constructivist approach to the teaching and learning of science. Data was collected in two phases through survey and semi-structured interview with two groups of first year teacher education students. Phase three was used to consolidate the flow of information from the first two phases. A summary of the findings is given by Patterson (2011:81-84) as follows:

1. Student perceptions of the effectiveness of a constructivist approach in supporting their learning in science
    - The students appreciated the opportunity for social interaction between each other and the teacher.
    - The teacher's guided questions supported learning.
2. Impact of limited subject knowledge and cognitive load theory
    - Students who had limited knowledge in the subject area could not engage productively with the teacher and each other.
    - Nevertheless, collaboratively working in groups seemed to address part of the problem. Additionally, storing a lot of information was a challenge for such students with poor subject knowledge.
3. The significance of investigating students' own questions
    - This increased interest, relevance and enthusiasm and promoted intrinsic motivation.
4. The impact of group work on the development of understanding
    - If group work could cater for challenges associated with subject content knowledge, then it could also be able to create understanding.
    - Peer interaction in the form of cross-questioning and exchange of opinions and ideas promoted learning.
5. Tutor questioning as a means of supporting development of understanding
    - Open questioning by the teacher prompted further exploration and discussion with other students thus encouraging cognitive engagement with ideas.
6. Transformed practice
    - Modelling of a constructivist approach to teaching and learning; students appreciated teacher and peer engagement in a manner that promoted learning.

This study highlighted the ability of a constructivist approach to learning to engage students and teachers through a variety of ways; teacher guidance and open questioning, group work, support for poor subject knowledge and assistance with handling of information. This is a metacognitive approach and it led to self-regulated learning

A similar study was done by Kwan and Wong (2014) in Hong Kong but this time with high school students. They used the Constructivist Learning Environment Survey (CLES) to measure elements of constructivist and learning in the classroom. They also used a questionnaire which combined various dimensions of the CLES and Cornell Critical Thinking Test Level X (CCTT-X) to measure perceptions on constructivist learning environment and critical thinking ability Kwan and Wong (2014:195). The outcome of the study showed that the students perceived their learning environment to be moderately constructivist in nature and that such an environment was conducive for critical thinking to occur.

A closer look at these studies will show that certain contextual factors may have moderated the presence and effectiveness of a constructivist environment in the classroom. One of these is that the Liberal Studies course in which the focus group was enrolled in was undergoing reform in the country. Reform means change and this may have affected the flow of information and pedagogy in the classroom. The preceding study by Patterson (2011) revealed that deficiencies in knowledge of the subject area do affect students' effectiveness in class and reduce social interaction and participation. The other possibility alluded to by Kwan and Wong (2014) has to do with those students who were repeating the course. Such students are likely to have had a poor grounding in the subject. These may have found it difficult to engage in productive teacher and peer interaction particularly given the transitional period of the course they were doing.

This section has considered the value of theories of learning in terms of contributing to good professional practices. Ultimately good professional practice creates a proper environment for self-regulated learning to take place by way of positive student-teacher interaction. Constructivist learning theories have been deliberately selected because of their relationship to self-regulated learning. Several authors have agreed that there is no one constructivist theory of learning. The overlap between these theories is observed when for example students

are actively involved in the learning process can set their own goals and be able to make sense of assessment feedback.

Three constructivist theories that have been applied extensively to school learning are information processing, social constructivist, and social cognitive theories. An example of a social constructivist theory is Vygotsky's theory of development which explains learning in the context of social interactions and culture. An example of a social cognitive theory is Bandura's social cognitive theory which focuses on cognitive factors such as beliefs, self-perceptions and expectations. These two provide the context for the theoretical framework in this study. The theories that underpin this study will find their setting in constructivist theories of learning.

2.12. SELECTED THEORIES OF INTELLIGENCE

Theories of Intelligence will be a necessary inclusion in this study because of their relationship to metacognitive self-regulated learning. For example, self-regulated learners exhibit the ability to understand self (Intrapersonal intelligence) as well as the ability to understand other people and social interactions (Interpersonal intelligence). Here is shown the intersection between theories of learning, theories of intelligence and metacognitive self-regulated learning.

A brief synopsis of the concept of intelligence should help to put metacognition in the right perspective because both have something to do with the use of the mental faculties. Woolfolk et al. (2008) note that some theorists believe intelligence is a basic ability that affects performance on all cognitively oriented tasks. In spite of the correlations among various tests of different abilities, some psychologists insist that intelligence is an umbrella term (Woolfolk, 2008; Gardner, 1999). The notion that intelligence is an umbrella term is suggestive of its multi-faceted nature. This characteristic has further been examined by other scholars in the field of psychology. According to Kosslyn and Rosenberg (2003), psychologists have offered many definitions of intelligence all of which say almost the same thing. This is the ability to solve problems well and to understand and learn complex material.

Scholarship has wrestled with the concept of intelligence for many years. Kosslyn and Rosenberg (2003) contend that since there are different ways to solve problems, it seems reasonable to believe that there should be different forms of intelligence. This belief has been substantiated over the past century by several views from scholars on the nature of intelligence. One perspective on the nature of intelligence is propounded by Spearman (1927) who deduces that intelligence may be looked at as generalized ability (g), specialized abilities (s) or intelligence quotient (IQ). He asserts that when you perform a task, you are drawing on the general factor (g) as well as on a particular type of ability, (s) which is specific to that task. He gives the example of spelling as a task which draws on a specialized ability as well as on the general ability. The general ability is the one mostly reflected in one's IQ.

Another view on the multiple nature of intelligence is given by Thurstone and Thurstone (1941) who suggest that intelligence consists of seven separate primary mental abilities. These are verbal comprehension, word fluency (how well one can produce words), number facility (how well one can do arithmetic), associative memory, perceptual speed (for recognizing stimuli), reasoning and spatial visualization. They emphasise that these are the fundamental abilities that are the components of intelligence and that they are not outgrowths of other abilities.

Thus continuous study into the nature of the concept of intelligence has seen a variety of theories being propounded. According to Ekinci (2014: 626), the most widely accepted comparative theories of intelligence in recent literature are Gardner's (1993) Multiple Intelligences Theory and Sternberg's (1985) Triarchic Theory of Intelligence.

Possibly the theory of multiple intelligences by Gardner has developed a very influential view of intelligence. Gardner (1999: 2003) asserts that there are eight basic forms of intelligence as listed below with a brief description of each:

1. Linguistic intelligence- the ability to use language well.
2. Spatial intelligence- the ability to reason well about spatial relations.
3. Musical intelligence- the ability to compose and understand music.
4. Logical-mathematical intelligence- the ability to manipulate abstract symbols.
5. Bodily-kinesthetic intelligence- the ability to plan and understand sequences of movements.
6. Intrapersonal intelligence-the ability to understand oneself.

7. Interpersonal intelligence- the ability to understand other people and social interactions.
8. Naturalist intelligence- the ability to observe carefully.

It has been argued by some scholars that the theory of multiple intelligences is there to stay. A number of studies have been conducted to establish such notions. In one such study Adcock (2014) conducted a survey with seventy-five students who had completed a Master's degree in education. Each one of them had taken the course entitled Teaching using Multiple Intelligences (TMI). The following were the revelations according to what the survey determined to establish (Adcock, 2014: 52-53):

1. Background in multiple intelligence theory- for 88% of them it came from the course work and partially from workshops. They all had high intentions to incorporate it into their teaching strategy.
2. Value received from TMI course-class assignments were the most beneficial; these included preparing five different lessons using the eight multiple intelligences and then sharing the lessons with each other.
3. Application of TMI course-

- Meet the individual needs of their students.
- Helped them to learn how to increase student motivation and interest.
- Helped students develop more meaningful memory pathways that led to more effective learning.

The author concluded by arguing that the findings of the research indicated that the theory of multiple intelligences is still applicable today. She suggested that instructional and assessment approaches could include strategies that took multiple intelligences into account. Thus the theory of multiple intelligences allows for formative assessment to be set forth on a self-regulative platform for example by increasing student motivation and interest.

Apart from Gardner's multiple intelligences theory, another similar theory is known as Sternberg's Triarchic Theory of Intelligence (Ekinci, 2014). This theory according to Adcock (2014: 51) is a Triarchic scheme of analytical, creative, and practical intelligences. Table 2.9 shows the comparison between Gardner's multiple intelligences theory and Sternberg's Triarchic theory of intelligence.

Table 2.9 Gardner's and Sternberg's Multiple Intelligence Theories Compared

Gardner's Multiple Intelligence Theory	Sternberg's Successful Intelligence Theory
Mathematical/ Logical Linguistic Naturalistic	Analytical
Spatial Bodily/Kinesthetic Musical	Creative
Intrapersonal Interpersonal	Practical

Adapted from Adcock (2014)

One may reason that if Gardner's Theory of Multiple Intelligences is still applicable today, then Sternberg's Triarchic Theory of Intelligence is on the same token equally valid. A study was done by Ekinci (2014) to show the relationship between Gardner's multiple intelligences and Sternberg's Triarchic Abilities and especially how they affect the academic achievement of students. This involved 172 primary school children who completed two sets of instruments. They completed Gardner's Multiple Intelligences Inventory and Sternberg's Triarchic Abilities Test (STAT). He particularly intended to establish the predictive ability of Linguistic Intelligence and Logical-Mathematical Intelligence on the academic achievement of students in the subject areas of mathematics, science, social science, and foreign- language learning. Subsequently he wanted to compare this with the predictive ability of Sternberg's analytical, creative, and practical intelligences on the same set of subjects for the same group of students.

The results showed that the total scores on both instruments in the particular concentrations were significantly related. Hence the theory/theories of multiple intelligences need to be taken into consideration in formative assessment because this takes place in a classroom situation. It may be ideal to conduct similar tests to students at Solusi University as a way of strengthening metacognitive self-regulated learning approaches to formative assessment.

These intelligences show that the brain has many capacities for learning (Ekinci, 2014). This helps to reiterate the view that a metacognitive approach to assessment facilitates the discovery of these learning capacities. Assessment should not just be about recall of facts but rather it should explore the various intelligences in order to develop them. This is assessment for learning which enhances learning and not assessment of learning which screens students for their intelligence, (Harlen, 2006; Harlen, 2007b; Kidd and Czerniawski, 2010).

Practically intelligence should be exploited for learning purposes. According to Gouws, (2007:61) the multiple intelligence theories can be used to incorporate the respective intelligences into daily lesson planning for practical use in the classroom. These can help educators to change their teaching and learning strategies so that they will be able to accommodate differences or meet needs of individual learners.

Intelligence has been shown to be the ability to solve problems well and to understand and learn complex material. Comparative theories of intelligence have indicated possibilities of multiple intelligences in students. What is the implication of multiple intelligences to assessment? Assessment methods must take into account the diversity of intelligences. A metacognitive self-regulated learning approach to assessment should be able to cater for this variety of intelligences because in essence it informs pedagogy. Hence I wanted to find out in my research how the self-regulated learning approach could also weave in these theories of intelligence in the crafting of formative assessment activities at Solusi University.

2.13. QUALITY ASSURANCE IN EDUCATION

I chose to make quality assurance as a stand-alone topic because of the prominence that quality assurance is being given within higher education. I wanted to underline the distinct role of self-regulated learning to assure quality in education.

Higher education is expected to be a quality assurance arena. Several authors have attempted to define the concept of quality. According to Chung (2010:66), educational quality may be looked at in the context of the analytical framework proposed in Harvey and Green (1993) and further elaborated in Harvey and Knight (1996). Under this framework, the concept of quality in relation to post-secondary education can be viewed from the following perspectives which I have briefly analysed in relation to assessment:

To begin with Chung (2010:66) cites quality as exceptional, which is the traditional concept usually operationalized as exceptionally high standards of academic achievements. In this case all forms of assessment would be designed to result in such exceptionally high standards. The second perspective is quality as perfection (or consistency), which focuses on processes and their specifications and is related to the ideas of zero defects and getting things right first time. Quality as perfection (or consistency) ensures that assessment processes and their specifications are perfect and consistent. Thirdly quality may be viewed as fitness for purpose, which judges the quality of a product or service in terms of the extent to which the stated purpose is met. Quality as fitness for purpose ensures that both summative and formative assessments have met their stated purpose.

The fourth perspective is quality as value for money, which assesses quality in terms of return on investment or expenditure and is related to the notion of accountability. Accountability as well as transparency in the assessment system as a whole must be notable features. Lastly quality may be looked at as transformation, which sees it as a process of change with emphasis on adding value to students through their learning experience. Quality as transformation ensures that the process of assessment is innovative and results in self-regulated learning.

Each of the perspectives cited above by Chung (2010:66) have appropriately addressed assessment in the context of qualitative delivery. This includes both assessment of learning (summative assessment) and assessment for learning (Harlen, 2007b). Scholars concur with each other on the need for qualitative approaches to teaching and learning. Among these are Meyers and Nulty (2009:567) propound five curriculum design principles to maximise the quality of student learning outcomes. They suggest that teachers must develop courses in ways that provide students with teaching and learning materials, tasks and experiences which encapsulate these principles.

A closer look at these principles reveals that they are strongly related to the five perspectives of looking at quality as suggested above by Chung (2010:66). Table 2.10 shows how this may be so by comparing the five perspectives on quality (Chung, 2010:66) with the five curriculum design principles (Meyers and Nulty, 2009:567).

Table 2.10 The Relationship Between Quality Perspectives and Curriculum Design Principles

Perspectives on Quality	Curriculum Design Principles
1. Quality as exceptional, which is the traditional concept usually operationalized as exceptionally high standards of academic achievements;	Require students to use and engage with progressively higher order cognitive processes;
2. Quality as perfection (or consistency), which focuses on processes and their specifications and is related to the ideas of zero defects and getting things right first time;	Are constructive, sequential and interlinked;
3. Quality as fitness for purpose, which judges the quality of a product or service in terms of the extent to which its stated purpose is met;	Are all aligned with each other and the desired learning outcomes;
4. Quality as value for money, which assesses quality in terms of return on investment or expenditure and is related to the notion of accountability;	Are authentic, real-world and relevant;
5. Quality as transformation, which sees quality as a process of change with emphasis on adding value to students through their learning experience.	Provide challenge, interest and motivation to learn.

Adapted from Chung, (2010) and Meyers and Nulty, (2009)

Quality assurance in higher education has been brought on the limelight by several scholars. Many of these have specifically raised concern on how or whether teachers do promote learning (Biggs and Tang, 2007; Ramsden, 2003). These seem to place teaching and learning within the realm of quality assurance. Several other scholars also believe that 'high quality' learning outcomes should result from the interplay between students' learning efforts, the curricula and the teaching methods used (Meyers and Nulty, 2009:566). It is noteworthy that

attempts at ensuring quality evoke self-regulative efforts that should incorporate student-teacher-peer interaction. Tam (2014:159) puts it succinctly that in higher education a focus on quality assurance is tantamount to a focus on intended learning outcomes. Hence a self-regulated metacognitive approach to assessment must involve a collaboration of students' learning efforts, the curricula and the teaching methods being used.

Assessment is certainly a quality assurance matter because good assessment practices result in quality improvement of teaching and learning. According to Lomas (2004), two major approaches to quality improvement are quality assurance and quality enhancement. In his analysis of the two approaches and drawing from arguments by other scholars, he stated that quality assurance addresses the issue of product or service non-conformance. The aim is to prevent poor-quality products or services from being produced or delivered in the first place by focusing on processes and emphasising prevention rather than cure. When this is applied to continuous assessment the assumption is that it ought to result in self-regulated learning.

The observations of Walsh (1990) as well as West-Burnham and Davies (1994) infer that quality assurance involves ensuring fitness for purpose. Generally, quality assurance has been regarded as a means of improving overall quality and it is expected to give sufficient weight to teaching and learning (Middlehurst, 1997). Institutions of higher learning are established within certain parameters so as to maintain quality. Solusi University was established within the heritage of a Christian philosophy of education which gives special emphasis to the development of the individual's spiritual, mental, physical and social faculties. Part of the envisaged mental development which is self-regulated learning in nature includes helping students to develop analytical thinking skills and encouraging intellectual curiosity (2010-2012 Bulletin: 27-29). The absence of a comprehensive formative assessment model based on the self-regulated learning approach cast doubt on whether this aspect was being fulfilled.

Self-regulated learning should also result in quality enhancement. Lomas (2004) in unison with other scholars, deduce that quality enhancement is more transformative and it requires a deliberate change process- including teaching and learning- that is directly concerned with adding value, improving quality (Jackson, 2002) and implementing transformational change (Middlehurst, 1997). For the individual lecturer, enhancement is about improving their students' work based on the premise that they want their students to do well (Jackson, 2002). Research shows that when teachers develop a culture of metacognition in the classroom, it

increases self-regulation which results in higher student learning and achievement (Schunk, 2009).

It would be worth noting that some studies have been carried out to substantiate the implications of quality assurance to a classroom situation. Shawer (2013) conducted a two year self-evaluation of a language education programme to address accreditation standards of the National Commission for Academic Accreditation and Assessment (NCAAA) at King Saud University in Saudi Arabia. There are eleven NCAAA standards or criteria to be fulfilled and one of them is teaching and learning. The researcher used 10 questionnaires to collect data from 16 faculty members and five questionnaires to get data from 52 randomly-selected students. Semi-structured interviews were also used to collect data from the program director and five faculty members.

The findings presented a number of indications in various standards. As for the teaching and learning criteria it was discovered that the self-evaluation exercise brought forth some progressive innovations. A collaborative in-service training was offered on effective teaching, assessment of student learning and use of blended learning. All the participants were in consensus that teaching processes and student learning had improved as a result of responding to the self-study instruments over the two year period.

In other words, attempts at quality assurance led to self-regulated learning to become possible. This intentional approach to be compliant to accreditation standards is a present reality in many countries. Another study was carried out at ten Australian Universities in order to ensure threshold learning standards in accounting. In their research Watty, K., Freeman, M., Howieson, B., Hancock, P., O'Connell, B., de Lange, P. and Abraham, A. (2014: 462) intended to identify the benefits and limitations of employing a formal cross-institution calibration process for accounting discipline threshold learning standards as seen through the experiences of participants. The exercise according to Watty et al. (2014: 467) went through three stages. In the first stage the 30 participants attended a pre-workshop calibration activity. Here they assessed sample student written work and recorded their assessment on an electronic Self and Peer Assessment Resource Kit (SPARK). The assessment was to be aligned with the threshold learning standards for the course 'Communication Skills.'

In the second face-to-face workshop the participants held consultative discussions to foster a shared understanding of what constitutes the concept of a ‘fair and agreed assessment. Finally, in the third stage the participants were on their own to reassess the sampled student work using SPARK. This time it was left to the final result to show whether calibration had occurred as guided by the shared understandings from the workshops.

In their concluding remarks Watty et al. (2014: 474) acknowledge the role of social moderation in arriving at a shared understanding of the accounting threshold learning standards, and to design valid assessments to assess those standards. The combined effort in the three stages of the research allowed for exchange of information, learning new ideas and calibration of standards hence ensuring quality and compliance.

The steps that were followed in this study gave opportunity for formative assessment to be approached from a different perspective. Moderation of important assessments such as research papers and mid-semester examinations is possible to be implemented following similar but contextualised calibration opportunities. Such could be passed on and shared with other institutions of higher learning so as to assure quality in teaching and learning.

What comes out from the foregoing is that quality assurance in education should be associated with both accountability and institutional improvement (Mhlanga, 2008). The concepts of quality assurance and quality enhancement in the context of assessment require that assessment practices be based on some defined quality standards. Ideally the need to improve the quality of student learning is one of the drivers of diversity and innovation in assessment (Mafenya, 2013). This study was motivated by the desire to reposition continuous assessment at Solusi University to make it more qualitative and consistent using a metacognitive self-regulated learning approach. Given the importance of quality assurance in education I wanted to find out whether there were any attempts at ensuring that it was given prominence in the formative assessment practices at Solusi University.

2.14. SUMMARY

In this chapter I reviewed literature on the concept of assessment in general and formative assessment in particular linking it to self-regulation and self-regulated learning. Formative and summative assessments were reviewed side by side respectively. The former is usually

associated with assessment that is done during the course of a learning period while the latter often has to do with assessment done at the end of a learning period.

Summative assessment has been referred to as assessment of learning because it is used to grade students at the end of a learning period. Formative assessment on the other hand has been referred to as assessment for learning because it is meant to enhance learning during a given period. The practice of continuous assessment is basically the practice of formative assessment and the two terms may be used synonymously. Assessment as learning is the complex interplay of assessment, teaching and learning in which pupils are active in both learning and assessment.

The distinctive feature of formative assessment is that it assumes a student-cantered approach to teaching and learning. In this approach formative feedback to improve learning is provided to each student. Effective feedback should offer guidance on the knowledge and skills that students possess and crucially act as a motivational instrument for future work.

Metacognition is important and consequential for learners of all ages. It was discovered that educational psychologists have long promoted the importance of metacognition for regulating and supporting student learning. The skills and processes associated with self-regulated learning will customarily exhibit metacognitive skills and therefore are often couched in terms of metacognition. Any assessment system needs metacognitive initiatives to engage students on a more productive level. It may thus be deduced that students can be described as self-regulated to the degree that they are metacognitively, motivationally and behaviourally active participants in their own learning process.

Constructivist theories of learning are worth considering in the context of formative assessment because of their relationship to self-regulated learning. In the context of assessment, Vygotsky's theory presupposes that assessment methods must take into account the zone of proximal development. Constructivist theories of learning focus on how people make meaning out of given concepts and ideas. In addition to that, an examination of theories of multiple intelligences shows that the brain has many capacities for learning. The multiple intelligence theories can be used to incorporate the respective intelligences into daily lesson planning for practical use in the classroom.

Assessment is certainly a quality assurance matter because good assessment practices result in quality improvement of teaching and learning. The concepts of quality assurance and quality enhancement in the context of assessment require that assessment practices be based on some defined quality standards. Quality is preceded by a practical knowledge of well-tested principles and guidelines for assessment. The qualitative methods and approaches that ensue should be able to meaningfully involve students in the teaching and learning process. Literature revealed that students become better educated if they are motivated to be actively involved in the educational process.

In a nutshell therefore this literature review brought out some important aspects that added value to my study. It was shown that assessment is about making judgements on the quality of students' performance and therefore it helps to determine progress in teaching and learning. It acts as a mirror for both lecturers and students. There is a possibility for self-regulated learning to take place in the collaborative use and management of formative assessment for summative purposes. This is especially possible in the context of continuous assessment where both in course and end of course assessment is used for grading purposes. Such use of assessment renders continuous assessment to become a variety of formative assessment.

Self-regulation which leads to self-regulated learning is the main goal of assessment. Self-regulated learning skills are expressed in metacognitive terms. This justifies the need for a metacognitive self-regulated learning approach to assessment. The formative nature of continuous assessment simulates a student-centred approach to teaching and learning in which formative feedback is used to improve learning. Effective feedback should offer guidance on the knowledge and skills that students possess and crucially act as a motivational instrument for future work.

The various concepts that have been covered in this chapter such as self-regulated learning, metacognition and formative feedback equally give emphasis to intrapersonal and interpersonal awareness by students. This is mainly addressed in constructivist learning theories. Since constructivist theories of learning focus on how people make meaning out of given concepts and ideas they should provide the setting for the theories that underpin this study.

CHAPTER THREE

THEORETICAL FRAMEWORK

3.1. INTRODUCTION

This chapter reviews literature on the theories that inform this study. In this case literature was reviewed to identify relationships between ideas and practices and to relate ideas and theory to applications (Hart, 1998, Cooper, 1988) cited by Joubish et al., (2011). Likewise, Randolph (2009: 3) postulates that literature reviews can be focused on practices or applications. He notes for example, that a review might concentrate on how a certain intervention has been applied or how a group of people tend to carry out a certain practice. In this case I reviewed literature vis-à-vis the current assessment practices at Solusi University. I wanted to use the theoretical frameworks as a lenses through which formative assessment would be seen to lead to self-regulated learning.

This review addresses the two critical research questions of this study. These partly sought to find out what the true worth or value of formative assessment was at Solusi University in the context of self-regulated learning. They also sought to find out how the self-regulated learning approach could add value to formative assessment practices in this university Self-regulated learning is constructivist in nature because of its emphasis on the active involvement of learners in the classroom (Kwan and Wong, 2014; Zeidan, 2014). In that regard the theories that underpin this study were being reviewed in relation to how they resonated with constructivist learning theory. The informed position of this review was based on the assumption that constructivism is a theory of learning and not a particular approach to instruction, (Barret and Long, 2012: 75). Hence I categorised the theories that underpin this study as approaches to teaching and learning using constructivism as the paradigm. They were thus classified because both the lecturers and students may use any one of them as an approach to teaching and learning respectively.

The three main theories are Self-Regulated Learning, The BEAR Assessment System and Bloom's Taxonomy of Learning Objectives. The unifying idea in each of these approaches to teaching and learning is constructivism because their characteristics do manifest themselves through constructivist principles. Some approaches such as the deep and surface approaches to learning are examined in the context of constructivism. These are being compared to one

another within a teaching and learning environment so as to ascertain how they could be appropriately applied. The theories were being studied particularly to see how they could be used to view the current assessment practices at Solusi University.

3.2. UNDERSTANDING CONSTRUCTIVIST LEARNING THEORY AS A PARADIGM

Constructivist learning theory provided the platform for the theories that underpin this study. Constructivist learning theory recognises that the learners construct meaning out of an interactive learning environment that includes lecturers, peers and learning materials (Keengwe, J., Onchwari, G. and Agamba, J., 2013). According to Taber (2011), the constructivist perspective on learning is based on how people make meaning of their interaction with the environment. Barret and Long (2012: 76) likewise argue that a learner in a constructivist environment must actively build content and new knowledge. These assertions presuppose a learning environment in which the learners end up owning the knowledge. As a result, formative assessment should also test the teacher's ability to meaningfully engage the students in the learning process rather than just looking for simple recall of facts.

The crucial role of constructivist learning theory to the teaching and learning context cannot be overemphasised. Constructivism may be viewed as a form of pedagogy which refers to some types of instructional theories, such as collaborative learning, student-centred learning and authentic assessment (Kwan and Wong, 2014: 193). This implies that constructivist learning may become a reality through the application and implementation of various teaching approaches. One such approach is action learning. The term 'action learning' presupposes a constructivist approach to teaching and learning in which the learners are actively involved. It is defined as "development-oriented learning through collaborative engagement with real problems, based on questioning insight and critically reflective thinking," (Rand, 2013: 232). Action learning is thus an approach that should lead to self-regulated learning.

Studies carried out by several scholars have noted the role of action learning in enhancing student critical thinking. In one such study Kim, K., Sharma, P., Land, S. M. and Furlong, K. P. (2012) designed and implemented active learning modules by incorporating group-based learning with authentic tasks, scaffolding, and individual reports. Active learning is herewith

being likened to action learning. They adopted the definition of critical thinking as the ability to identify issues, analyse data and evidence, make judgments, critically and reflectively evaluate relevant elements, and draw conclusions, (Kim et al., 2012: 226).

One hundred and fifty-five undergraduate science students participated in the study whose context were two active learning instructional modules based on a topic about natural disasters. Each one of the modules (a) used current events and situations as contexts for the activities; (b) provided visible supports, or scaffolds, for student thinking; and (c) provided opportunities for students to engage in peer discussions and collaborative activities, (Kim et al., 2012: 227). At the end of in-class learning and vigorous group activities each student was asked to write a report to indicate their understanding in the following two areas:

Firstly, the report was supposed to give evidence of the student's ability to understand the concepts and integrate prior knowledge. Secondly the students were expected to show their ability to deal with scientific phenomena by critically and reflectively evaluating relevant elements, and drawing conclusions, (Kim et al., 2012: 226). The findings indicated significant improvements in scores for critical thinking between individual reports for the first and second modules. The authors concluded that active learning does actually enhance critical thinking. This supports the notion that active learning/action learning like all other approaches to teaching and learning, is premised on constructivist learning theory.

Elwood and Murphy (2015: 184) locate educational activities within the constructivist paradigm. They postulate that education as an area of social policy and practice is constituted by activities such as teaching, learning and assessing. They further argue that these activities within schools and the practices associated with them are part of the broader cultural systems of relations, and social structure in which they have meaning. I thus found the constructivist learning theory to be significant in relation to the various approaches to teaching and learning. It fitted in perfectly as a paradigm for my theoretical framework. In view of this import I identified two constructivist learning theories in order to gain an appreciation of their characteristics vis-à-vis the theoretical framework.

3.3. AN OUTLINE OF VYGOTSKY'S AND BANDURA'S CONTSRUCTIVIST LEARNING THEORIES

There were two constructivist learning theories that were singled out for the purposes of relating them to the theoretical frameworks. The objective was to solidify the assertions about the constructivist nature of the theories that guide this study. The first one is Vygotsky's social constructivist theory of development. The social nature of the theory implies that there is a strong emphasis on social interaction (collaboration and community in classroom activities) as hinted to by Devries (2008). Similarly, the constructivist nature of the theory suggests that it is premised by constructivist theory of learning which recognises that active, self-regulated learners can construct knowledge for themselves (Kwan and Wong, 2014). In Table 3.1 the prominent attributes of Vygotsky's theory (Devries, 2008: 1-189) are compared with the major characteristics of constructivist theory of learning as suggested by Kwan and Wong (2014: 193). In the centre column I listed suggested overlapping features of the two sets of characteristics in order to show that Vygotsky's theory is constructivist in nature.

A very important element in Vygotsky's theory is the Zone of Proximal Development (Vygotsky, 1978: 86). He defines it as,

> The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers.

The Zone of Proximal Development considers effective learning to be a product of individual efforts combined with collaborative efforts between students and their peers as well as lecturers. This shows the essential characteristic of constructivist learning in which students are active participants of the learning process through inquiry and exchange of ideas.

The second constructivist theory of learning is Bandura's social cognitive theory. The social aspect of the theory acknowledges the social origins of much human thought and action while the cognitive aspect recognizes the influential contribution of cognitive processes to human motivation, affect, and action (Bandura, 2012: 350). In the previous chapter in section 2: 11, I noted that social cognitive theory distinguishes between enactive and vicarious learning. Enactive learning is learning by doing and experiencing the consequences of your actions while vicarious learning is learning by observing others (Woolfolk et al., 2008). Enactive learning is a constructivist assumption that people are active learners who construct knowledge for themselves (Kwan and Wong, 2014; Schunk, 2008).

Table 3.1. Showing the Constructivist Nature of Vygotsky's Theory

Devries (2014) Vygotsky's Theory	Overlapping Features	Kwan and Wong (2014) Constructivist Theory
1. Children are active	1. Active students	1. Learners are active participants in their learning 2. Learners are self-regulated 3. Social interaction is necessary for effective learning 4. Individuals make sense of information for themselves
2. Rote learning should be avoided	2. Students are self-regulated and do not depend on rote learning	
3. The whole language approach to literacy is advocated	3. Language enables students to derive meaning from social interaction	
4. Collaboration of children in classroom activities is advocated	4. Collaborative group work enables students to make sense of learning material	
5. Establishing community in the classroom is important	5. Establishing community allows for social interaction and effective learning to take place in the classroom	
6. Curriculum should be based on children's interests	6. Designing curriculum based on the students' interests motivates them to become active learners.	
7. External rewards should not be used with children	7.Self-regulated learners are active participants in their learning and are not motivated by external rewards	
8. Pretend play is an important part of the curriculum	8. Role play is part of social interaction and allows learners to make sense of information by themselves.	

Adapted from Devries (2014) and Kwan and Wong (2014)

On the other hand, vicarious learning is also constructivist in nature because it emphasises the socio-cultural context in knowledge construction, (Kwan and Wong, 2014). Hence Bandura's

Social Cognitive Theory is a constructivist theory of learning. An empirical study was conducted by Khosa and Volet (2014) to find out the effects of collaborative learning on productive engagement in cognitive activity and metacognitive regulation. The aim was to examine the extent to which group differences in cognitive activity and metacognitive regulation during a collaborative learning activity could contribute to explaining differences in the group learning outcomes.

Two groups (Group A and Group B) of undergraduate students in Veterinary Medicine were given two science-learning tasks (Task 1 and Task 2) on an equal footing. They worked separately but somehow exhibited differing approaches to learning. In order to detect the outcomes, the authors instituted a coding scheme for analysing cognitive activity and metacognitive regulation. According to Khosa and Volet (2014: 301), the findings for Task 2 revealed some striking group differences, with Group B displaying high-levels for both cognitive activity and metacognitive regulation. Group A on the other hand engaged predominantly at low-level for cognitive activity and showed modest engagement for metacognitive regulation. Group B members were metacognitively self-regulated. This shows that collaborative learning which occurs in social environments falls in line with Bandura's Social Cognitive Theory.

Hence it became vital for this study to allow constructivism to illuminate the conceptual frameworks. This was to lay ground for the formative assessment system at Solusi University to be viewed through a constructivist lens. Therefore, Vygotsky's social constructivist theory of development and Bandura's Social Cognitive Theory were being used in this research to house the theories that underpin the study.

3.4. SELF-REGULATED LEARNING THEORY AS A CONCEPTUAL FRAMEWORK

Self-Regulated Learning was used to form the nucleus of this study for two reasons: Firstly, this study sought to investigate how formative assessment was valued using the self-regulated learning lens. Secondly, the other two theories to be considered later served as building blocks towards a self-regulated learning environment. Thus the bigger picture in this study was self-regulated learning.

Self-regulated learning is a constructivist teaching and learning approach. In a self-regulated learning environment, the learners are intentional and actively get involved in the learning process as they construct knowledge through problem solving and other activities (Zeidan, 2014). Self-regulated learning strategies are a simulation of constructivist learning theory. Schunk and Usher (2013: 1-2) use the term self-regulated learning interchangeably with self-regulation. They go on to state that in self-regulation, learners will systematically organise and direct their thoughts, feelings and actions to attain their goals. This conceptualises a teaching approach which is systematised to enable students to become active participants in the learning process.

Therefore, self-regulated learning is systematic and involves order, planning and flexibility. Consequently, the self-regulation model is a cyclical process in which the factors do change during learning and therefore need to be monitored, (Schunk and Usher, 2013: 13). The model is hereby presented in the form of a table with the characteristics of each factor clearly shown in Table 3.2):

Table 3.2. Self- Regulated Learning Model

Factor/Phase	Characteristics
a. Forethought (students prepare for educational endeavors)	i. Motivational beliefs ii. Task analysis processes (before performance, learning or problem-solving)
b. Performance (students monitor their learning)	i. Self-observation (metacognitive monitoring, self-recording) ii. Self-control processes (self-instruction, attention focusing, task strategies)
c. Self-reflection (after educational endeavors)	i. Self-judgments ii. Self-reflection (after performance, learning or problem solving)

Adapted from Moylan (2013)

The three elements in this model are forethought, performance and self-reflection. Forethought is the student's action and reaction during the preparation for learning stage.

Performance is the student's action and reaction during learning. Self-reflection portrays the student's action and reaction after a learning experience. Knowledge of the characteristics of these phases should enable the lecturer to support the learners if the self-regulated learning approach is adopted.

In terms of constructivism Bandura's Social Cognitive Theory is reflected in this model. The cognitive aspect which recognizes the influential contribution of cognitive processes to human motivation, affect, and action (Bandura, 2012: 350) may feature in each of the three phases. The characteristics of each phase reflect this relationship. In the forethought phase we find motivational beliefs; in the performance phase we find metacognitive monitoring; in the self-reflection phase we find self-reflection.

Similarly, the social aspect of Bandura's Social Cognitive Theory is also reflected in the Self-Regulated learning model. The social aspect of the theory acknowledges the social origins of much human thought and action (Bandura, 2012: 350). This implies that one's social background and environment have an impact in the way he/she prepares for learning (forethought), behaves during learning (performance) and after learning (afterthought).

In the forethought phase a student's task orientation process may be influenced by one's social environment. The student may have goal orientations or reasons for learning (Schunk and Usher, 2013: 14) which focus on getting a grade rather than learning a skill and this may be so because it is part of his/her forethought. In the performance phase the social aspect may entail focusing attention on certain role models such teachers and peers. In the self-reflection phase a student's social origins or the social interactions with peers may affect self-reflection either to one's benefit or failure. As such the Self-Regulated Learning approach should be systematic and not dogmatic so as to avoid stereotype teaching and learning.

Self-Regulated learning is characteristically metacognitive especially from the perspective that self-regulation is a strong component of metacognition (Lai, 2011; Papaleontiou-Louca, 2008). Research indicates that self-regulated learners have the skill and will to learn. They are positively disposed to transform their mental abilities into academic skills (Woolfolk, 2004; Murphy & Alexander, 2000; Zimmerman, 2002). Therefore, the study sought to use the Metacognitive Self-Regulated lens to investigate the quality and quantity of continuous assessment at Solusi University in the context of constructivist learning.

3.5. THE BEAR ASSESSMENT SYSTEM AS A CONCEPTUAL FRAMEWORK

The second theory that is being used alongside Self-Regulated learning is the Bear Assessment System. According to Wilson and Sloane (200: 182), the Bear assessment system is so named because it was developed at the Berkeley Evaluation and Assessment Research (BEAR) Centre. This is a comprehensive, integrated system for assessing, interpreting, monitoring, and responding to student performance. It provides a set of tools for instructors and students to:

- Reliably assess performance on central concepts and skills in curriculum,
- Set standards of performance,
- Validly track progress over the year on central concepts, and
- Provide mechanisms for feedback and follow up. (Wilson and Scalise, 2006: 644).

In that regard the BEAR assessment system is also anchored on a constructivist theory of learning. According to Wilson and Carstensen (2007: 313), the BEAR Assessment System is based on four principles which are:

1. A developmental perspective
2. A match between instruction and assessment
3. The generating of high-quality evidence
4. Management by instructors to allow appropriate feedback, feed-forward, and follow-up.

The characteristics of these principles are outlined in Table 3.3 to show how they relate to constructivism. There are some notable overlaps between the BEAR assessment principles and constructivist theory of learning. The first principle is on developmental perspectives as the lecturer selects goals and decides what to assess and how to assess it. Wilson (2009: 68) believes that quizzes, tests, or assignments are meant to investigate and document student progress in the classroom rather than them being one-shot testing situations for grading purposes. It is recognised that as learning situations vary so their goals and philosophical underpinnings take different forms or structure, (Wilson and Carstensen, 2007: 314). This complies for example with the constructivist characteristics of providing real-world settings

or case-based learning instead of following predetermined sequences of instruction (Zeidan, 2014).

The second principle which propounds a match between instruction and assessment is also constructivist in nature. This is the stage where the learning takes place and where quizzes or assignments are given and that these should be based on the content of instruction. This is done in line with the goals that were formulated during the developmental perspective stage. It characterises such constructivist principles as enabling context and content dependent knowledge construction as well as emphasising authentic tasks rather than abstract instruction (Wilson and Carstensen, 2007; Zeidan, 2014). This may for example counter the temptation to give or request for quizzes for the sake of recording marks even if the students do not build any contextual knowledge from the quizzes.

In the third principle, the management of assessment information by the lecturer must be done in relation to the instructional goals. At this stage it is expected that quizzes, tests or assignments are being marked by the lecturer. The motive is to gauge how far the goals of instruction have been achieved as opposed to simply awarding marks. Management of assessment information lays ground for effective feedback to take place. This emphasises the constructivist principles like supporting collaborative construction of knowledge through social negotiation between the lecturer, students and peers.

The last principle talks about providing high quality evidence. This is the stage for providing feedback. It calls upon the lecturer to establish procedures in order to ensure comparability of results across time and context, (Wilson and Carstensen, 2007: 313). Such endeavours recognise that students should be active participants in learning as they meaningfully interact with assessment feedback. Hence this supports the collaborative construction of knowledge through social negotiation. Assessment is for learning and this is evident in these principles.

Table 3.3. The Constructivist Nature of the BEAR Assessment System

Wilson and Carstensen (2007) BEAR Assessment Principles and Descriptions		Zeidan (2014) Constructivist Characteristics
Principle 1: Developmental Perspective	-Criteria (Goals) for development -What to assess and how to assess it - As learning situations vary, their goals and philosophical underpinnings take different forms	- Provides multiple representations of reality - Provides real-world settings or case-based learning instead of predetermined sequences of instruction - Enables context- and content-dependent knowledge construction
Principle 2: Match Between Instruction and Assessment	- Assessment and instruction must be in step -They must both be designed to accomplish the same aims of learning - Assessment tasks need to reflect the range and styles of the instructional practices in the curriculum - develop both the instructional materials and the assessment tasks at the same time - If assessment is also a learning event, then it does not take unnecessary time away from instruction	- Provides multiple representations of reality - Provides real-world settings or case-based learning instead of predetermined sequences of instruction -Emphasizes authentic tasks in a meaningful context rather than abstract instruction that is out of context. - Enables context- and content-dependent knowledge construction
Principle 3: Management by Teachers	- Information from the assessment tasks and the BEAR analysis must be couched in terms that are directly related to the instructional goals	-Emphasizes authentic tasks in a meaningful context rather than abstract instruction that is out of context. -Provides real-world settings or case-based learning instead of predetermined sequences of instruction. -Enables context- and content-dependent knowledge construction. -Supports collaborative construction of knowledge through social negotiation
Principle 4: High-Quality Evidence	-It allows teachers to interpret a student's proficiency in terms of average or typical performance on representative assessment activities - It takes into consideration the relative difficulties of the tasks involved in assessing student proficiency.	-Enables context- and content-dependent knowledge construction. -Supports collaborative construction of knowledge through social negotiation

Adapted from Wilson and Carstensen (2007) and Zeidan (2014)

3.6. BLOOM'S TAXONOMY OF LEARNING OBJECTIVES AS A CONCEPTUAL FRAMEWORK

The third theory underpinning the focus of this study is Bloom's Taxonomy of Learning Objectives. One of the basic principles of an assessment process is specifying the intended learning goals before selecting the assessment procedures to use, (Linn and Miller, 2005).

This is fully addressed by this taxonomy. The original form of Bloom's taxonomy has six stages namely knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom, 1984).

Bloom's taxonomy has been used by many scholars to underpin their studies. Up to this day, Bloom's taxonomy is arguably among the most recognized frameworks that guide learning and assessment (Hawk and Shah, 2014). Since its inception Bloom's original taxonomy has been used again and again in the field of education. Eventually educationists have made certain observations. One of the major areas of concern has been in the application of the categories and sub-categories to analyse test items. It has been observed that a heavy emphasis is placed on objectives that fall in the Knowledge category which require only recognition or recall of information (Krathwohl, 2002: 213). Because of this, Bloom's taxonomy has been revised to give it a more practical approach. According to Anderson and Krathwohl (2001), the cognitive domain in the learning taxonomy may be revisited to reflect a more active form of thinking. This is shown in Table 3.4 where the old cognitive domain is matched against the new one to indicate the changes.

Table 3:4- Bloom's Revised Taxonomy

Original Domain	New Domain
Evaluation	Creating
Synthesis	Evaluating
Analysis	Analyzing
Application	Applying
Comprehension	Understanding
Knowledge	Remembering

Adapted from Anderson and Krathwohl (2001)

The new domain has been further analysed in order to relate it to real life situations. Two notable innovations have been reflected in the revised cognitive domain of Bloom's Taxonomy of Learning Objectives. One is bound to deduce that these innovations reflect the importance that is attached to the taxonomy. Firstly, apart from renaming and repositioning some of the categories, these have also been assigned new sub-categories. This is shown in Table 3.5 in which a comparison is made with constructivist characteristics to show their relationship to the taxonomy.

Table 3.5- The Relationship of the Revised Bloom's Taxonomy to Constructivism

Category	Sub-Category	Constructivist Characteristics
Remember Retrieving relevant knowledge from long-term memory	- Recognizing -Recalling	-Thoughtful reflection on experience -Knowledge construction -Real-world settings
Understand Determining the meaning of instructional messages, including oral, written, and graphic communication	-Interpreting -Exemplifying -Classifying -Summarizing -Inferring -Comparing -Explaining	-Context and content dependent knowledge construction -Authentic tasks in a meaningful context -Collaborative construction of knowledge through social negotiation
Apply Carrying out or using a procedure in a given Situation	-Executing -Implementing	-Knowledge construction instead of knowledge reproduction -Real world settings/case-based learning -Context/content-dependent knowledge construction
Analyse Breaking material into its constituent parts and detecting how the parts relate to one another and to an overall structure or purpose.	- Differentiating -Organizing -Attributing	-Knowledge construction instead of knowledge reproduction -Authentic tasks in a meaningful context -Thoughtful reflection on experience
Evaluate Making judgments based on criteria and Standards	-Checking -Critiquing	-Thoughtful reflection on experience -Knowledge construction instead of knowledge reproduction
Create Putting elements together to form a novel, coherent whole or make an original product	-Generating -Planning -Producing	-Knowledge construction -Real world settings/case-based learning -Thoughtful reflection on experience

Adapted from Krathwohl, D. R. (2002) and Zeidan (2014)

Secondly, the new domain has also identified contextual sub-categories of the knowledge category. This is shown in Table 3.6.

Table 3.6- The Knowledge Category of Bloom's Revised Taxonomy

Factual Knowledge The basic elements that students must know to be acquainted with a discipline or solve problems in it	Conceptual Knowledge The interrelationships among the basic elements within a larger structure that enable them to function together	Procedural Knowledge How to do something; methods of inquiry, and criteria for using skills, algorithms, techniques, and methods.	Metacognitive Knowledge Knowledge of cognition in general as well as awareness and knowledge of one's own cognition
-Knowledge of terminology -Knowledge of specific details and elements	-Knowledge of classifications and categories -Knowledge of principles and generalizations -Knowledge of theories, models, and structures	-Knowledge of subject-specific skills and algorithms -Knowledge of subject-specific techniques and methods -Knowledge of criteria for determining when to use appropriate procedures	-Strategic knowledge -Knowledge about cognitive tasks, including appropriate contextual and conditional knowledge -Self-knowledge

Adapted from Krathwohl (2002)

The knowledge sub-category of the revised Bloom's Taxonomy is metacognitive in nature. This is because it contains metacognitive knowledge, regulation of cognition and metacognitive experiences (Wagener, 2013). For example, factual knowledge, conceptual knowledge, procedural knowledge and metacognitive knowledge all require that students portray knowledge of cognitive strategies and self-awareness. This becomes self-regulated learning when students become active participants in the learning process. The lecturer can craft these in the planning stages of a course when objectives are being drawn up.

It is noted that Bloom's taxonomy is intended to encourage a match between assessment and learning and teaching objectives. Bloom's Taxonomy of Learning (and Teaching) Objectives is thus constructivist in nature. The thrust of this study was partly to infuse constructivist teaching and learning approaches at Solusi University in order to actualize self-regulated learning. Each one of the theories that underpin this study was to be employed to determine how it could lead to self-regulated learning. Hence simply stated, Self-regulated learning is a constructivist teaching and learning approach. In my study I intended to explore evidences of

this approach by way of Bloom's Taxonomy of Learning Objectives in the instructional and assessment process at Solusi University.

3.6. SURFACE AND DEEP LEARNING APPROACHES WITHIN THE THEORETICAL FRAMEWORK

It is from the emphasis that is given by an assessment system that we get different approaches to teaching and learning. Weurlander et al. (2012) assert that assessments which focus on recall of factual knowledge tend to steer students towards surface learning. On the other hand, they insist that assessments which emphasise application and comprehension tend to encourage deep learning.

The characteristics of surface and deep learning are clearly articulated by Rust (2002: 8-11). In the surface approach to learning, the student reduces what is to be learnt to the status of unconnected facts to be memorized. In other words, rote learning is the order of the day. This means that the lecturer's focus is to make students reproduce the subject matter at a later date. Course characteristics associated with a surface approach are:

i. A heavy workload.
ii. Relatively high class contact hours.
iii. An excessive amount of course material.
iv. A lack of opportunity to pursue subjects in depth.
v. A lack of choice over subjects and a lack of choice over the method of study (p. 10).

When such characterise any assessment system then constructivist principles are ignored. Students are not active participants in the learning process thus being deprived of the opportunity to construct knowledge on their own. This approach does indeed require closer scrutiny so as to give opportunity to appraise it.

On the other hand, the deep approach to learning is student-centred. This is defined as the student attempts to make sense of what is to be learnt, which consists of ideas and concepts and involves the student in thinking, seeking integration between components and between tasks, and 'playing' with ideas (Rust, 2002).

Course characteristics which can foster a deep approach according to Rust (2002: 10) are:

i. The engendering of intrinsic motivation in the students; students wanting and needing to know.
ii. Learner activity.
iii. Interaction with others.
iv. A well-structured knowledge base – i.e. where content is taught in integrated wholes and where knowledge is required to be related to other knowledge.

The deep learning approach has been closely followed over the years by several scholars especially with the intention to re-echo its value in higher education. Among these Howie and Bagnall (2015: 351) associate the following characteristics to the deep approach to learning:

1. Students feel a positive regard for the program material.
2. Students enjoy the process of engaging with the program material.
3. Students require a requisite level of intention to engage with the program material.
4. Students' intention to engage with the program material may arise from;
   a) A student's own curiosity.
   b) A resolve to do well.
   c) Having relevant background knowledge.
   d) An ability to work at a high cognitive level
   e) A preference for working conceptually

The deep learning approach is cast in constructivism and therefore it should lead to self-regulated learning. Self-regulated learning is already constructivist in nature because of the approach that learners (and lecturers assume). According to Nussbaumer, A., Dahn, I., Kroop, S., Mikroyannidis, A., and Albert, D. (2015: 19), self-regulated learners are active and able to:

1. Control, monitor, and regulate their cognition.
2. Control, monitor, and regulate their motivational state.
3. Control, monitor, and regulate their behaviour.
4. Control, monitor, and regulate their context.

5. Set goals and try to achieve them through progress-monitoring.

There is thus a close relationship between the deep learning approach and self-regulated learning both of which are constructivist in nature. This may be conceptualised as shown in Table 3:7 in which the deep learning approach (Howie and Bagnall, 2015), is compared with constructivism (Kwan and Wong, 2014) and the self-regulated learning principles (Nussbaumer et al., 2015). Constructivist principles are sandwiched between characteristics of students who pursue the deep learning approach on one hand and those who are self-regulated learners on the other hand.

The table shows that learners who are active participants in their learning (constructivism) feel a positive regard for the program material (deep learning approach) and are able to control, monitor, and regulate their cognition (Self-Regulated Learners). They (Self-Regulated Learners) are able to control, monitor and regulate their cognition and thus enjoy the process of engaging with the program material (deep learning approach). Through social interaction (constructivism) students are able to control, monitor and regulate their behaviour (Self-Regulated Learners) and thus reach the requisite level of intention to engage with the program material (deep learning approach).

Still in Table 3.7, it is also shown that individual students make sense of information for themselves (constructivism) and are able to control, monitor and regulate their context (self-regulated learners) because of their own curiosity and the resolve to do well (deep learning approach). Such individuals can set goals and try to achieve them through progress monitoring (constructivism; self-regulated learners) because of their ability and preference to work conceptually and at high cognitive level (deep learning approach). Although the three sets of principles/characteristics may be crisscrossed, the comparison shown in Table 3.7 still portrays their close relationship.

Table 3.7- The Deep Learning Approach, Constructivism and Self-Regulated Learning Compared

Howie and Bagnall (2015) The Deep Learning Approach	Kwan and Wong (2014) Principles of Adopting Constructivism	Nussbaumer et al., (2015) Self-Regulated Learners
Students feel a positive regard for the program material	Learners are active participants in their learning	Control, monitor, and regulate their cognition
Students enjoy the process of engaging with the program material	Learners are self-regulated	Control, monitor, and regulate their motivational state
Students require a requisite level of intention to engage with the program material	Social interaction is necessary for effective learning	Control, monitor, and regulate their behavior
a) A student's own curiosity. b) A resolve to do well. c) Having relevant background knowledge.	Individuals make sense of information for themselves	Control, monitor, and regulate their context
d) An ability to work at a high cognitive level e) A preference for working conceptually		Set goals and try to achieve them through progress-monitoring

Adapted from Howie and Bagnall (2015), Kwan and Wong (2014) and Nussbaumer et al., (2015)

Several studies have been conducted with regards to the play, inter-play and counter-play between surface and deep learning approaches. Kyndt, E., Dochy, F., Struyven, K. and Cascallar, E. (2011) and other researchers conducted a study to determine the factors that can enhance or inhibit a deep approach to learning. The participants were 128 second year

undergraduate students in educational sciences. The researchers employed perceived workload and task complexity as the determinant factors.

It was hypothesised that a deep approach to learning would relate negatively to perceived workload, while surface approaches to learning would relate positively to perceived workload (Kyndt et al.; 2011: 397). Nothing was hypothesised for task complexity.

The students were given four tasks with various workloads and task complexities after which they filled out questionnaires on learning approaches, perceived workload and perceived task complexity (Kyndt et al.; 2011: 397). Although the students were given assignments to induce workload and task complexity, it was discovered that the lack of information turned out to be a discouraging factor for inducing a deep learning approach. This was so regardless of the induced workload and task complexity.

The results of the study by Kyndt et al. (2011) seem to confirm the assertions by other scholars in connection with the surface learning approach. According to Rust (2002), this is characterized by a heavy workload and an excessive amount of course material wherein students have a lack of opportunity to pursue subjects in depth (lack of information).

The surface learning approach may have been a near resort in the case of Solusi University where formative assessment was being used for summative purposes. In such a situation, students could opt to rote learning by use of mnemonic devices for the sake of getting good marks in a quiz or test. The study by Kyndt et al. (2011) is an eye opener in terms of knowing how to engage students and how to assess them in the learning process so as to avoid such occurrences.

The possibility of obliterating the surface learning approach at Solusi University may not have been immediate due to the prevailing practices and tradition. Nevertheless, the degrees of manifestation for these two approaches needed to vary so that the deep learning approach could get the pre-eminence. Scholars have suggested other innovative ideas intended to stimulate the deep learning approach to academic work. These include the Constructive Alignment theory (Biggs and Tang, 2007) and the ‘3P’ learning and teaching model (Biggs, 1987; Biggs, Kember, and Leung, 2001).

The following features of the constructive alignment theory are stressed by Wang, X., Su, Y., Cheung, S., Wong, E. and Kwong, T., (2013: 477):

1. Lecturers should clearly specify the intended learning outcomes.
2. Lecturers should design the learning activities appropriate for the intended learning outcomes.
3. Lecturers should design appropriate assessment tasks to enable students to construct their knowledge to achieve the outcomes.
4. Lecturers should establish assessment criteria and provide feedback to the learners for students' continuous improvement.

In like manner the '3P' (presage, process and product) learning and teaching model as proposed by Biggs, Kember, and Leung (2001) is depicted as follows by Wang et al., (2013: 478):

1. The presage stage refers to personal factors such as motivation, conceptions of learning, prior knowledge, ability, age and personality as well as situational factors such as the teaching and learning environment.
2. Process refers to the stage during which learning takes place – students are engaged and involved in active learning activities and instructors provide formative feedbacks for students to help them to reach the intended learning outcomes.
3. The product refers to various demonstrable learning outcomes, such as course grades, demonstrable changes in skills and attitudes, students' satisfaction and students' approaches to learning.

The two sets of characteristics do vividly manifest constructivist attributes in the constructive alignment theory and the presage, process and product ('3P') model respectively. This is displayed in Table 3.8 where the constructive alignment theory (CA), the presage, process and product ('3P') model are paired with constructivist principles (Kwan and Wong, 2014).

Table 3.8- The Constructivist Nature of The CA Theory and The '3P' Model

<table>
<tr><th>Biggs and Tang (2007)

CA Theory</th><th>Biggs, Kember, and Leung (2001)

'3P' Model</th><th>Kwan and Wong (2014)

Constructivist Principles</th></tr>
<tr><td>Clearly specified intended learning outcomes</td><td>The presage stage
-Personal factors, such as motivation, conceptions of learning, prior knowledge
-Situational factors such as the teaching and learning environment</td><td rowspan="5">- Learners are active participants in their learning

- Learners are self-regulated

- Social interaction is necessary for effective learning

- Individuals make sense of information for themselves</td></tr>
<tr><td>Designed learning activities appropriate for the intended learning outcomes</td><td>Process stage-learning takes place and students are involved in active learning</td></tr>
<tr><td>Designed appropriate assessment</td><td rowspan="2">The product stage-various demonstrable learning outcomes such as students' approaches to learning</td></tr>
<tr><td>Established assessment criteria and feedback to the learners</td></tr>
</table>

Adapted From Biggs and Tang (2007), Biggs, Kember, and Leung (2001) and Kwan and Wong (2014)

Each one of the constructivist principles should be assumed to equally apply to any of the characteristics of the CA theory as well as the '3P' model. For example, individuals can make sense of information for themselves (constructivist principle) being prompted by personal and situational factors such as motivation and classroom environment respectively, ('3P' model), in which intended learning outcomes are clearly specified (CA theory). Likewise, social interaction for effective learning (constructivist principle) can take place at the process stage where students are involved in active learning (('3P' model) since activities appropriate for the intended learning outcomes have been designed (CA theory). Accordingly, the CA theory and the '3P' model are constructivist in nature and should be able to induce deep learning in students.

A study to substantiate the role of Constructive Alignment theory and the '3P' learning and teaching model in relation to the deep and surface learning approaches was carried out in Hong Kong by Wang et al., (2013). A focus group was chosen from among a sample of lecturers and students from two different programs in a university. These were divided into two groups one of which was more akin to constructive alignment and the '3P' model. Students in group A with the help of their lecturers took courses which were more

constructively aligned than those in group B. The researchers analysed course syllabi and interview data from both students and lecturers.

The results indicated that students in group A adopted more of the deep learning approach and less of the surface learning approach. Those in group B exhibited more of the surface learning approach. It was thus concluded that the constructive alignment theory and the '3P' model played a significant role in inducing the deep learning approach to study in students.

The constructive alignment of teaching and learning outcomes, activities and assessment tasks creates an effective teaching and learning environment (Wang, 2013). I intended to examine how to infuse this into the application of the theories that underpin this study.

3.7. HOW THE THEORIES GUIDING THIS STUDY BLEND TO FORM THE THEORETICAL FRAMEWORK

From the foregoing discussions it is evident that the three theories that guide this study form a thematic unit. As such both teaching (the instructional process) and assessment (quizzes, tests and assignments) may be viewed from a different perspective in the context of the theoretical framework. The constructivist and interdependent nature of the three theories that underpin this study were to enable me to investigate several areas within the formative assessment system at Solusi University. There were four research instruments that had been designed for this study being prompted by the blended nature of the theoretical frameworks. These are:

1. The Course Outline Analysis Schedule.
2. The Lecturer's Interview Guide.
3. The Focus Group Interview Guide for Students.
4. The Quizzes, Tests and Assignments Analysis Schedule.

Each one of these will be discussed to show how they emanate from the three theories that guide this study. Firstly, the Course Outline Analysis Schedule plays an important role in both the instructional process and the assessment process at Solusi University. According to Woolcock (2006: 11), the course outline fulfils four main purposes. These are: aims and objectives; content and sequencing; assessment and evaluation; and administration and presentation. These four purposes may be looked at from the perspective of the theoretical framework.

I intended to examine the aims and objectives in the course outlines from the perspective of Bloom's Taxonomy of Learning Objectives. The course content and how it is sequenced should link it up with the learning objectives (BEAR Assessment System, Bloom's Taxonomy). Course content and sequencing should also help to reflect the various teaching strategies, student activities and assessment. As the students engage with the course content, self-regulated learning takes place via forethought (prior to learning), performance (during actual learning) and self-reflection (after the learning experience).

In terms of assessment and evaluation, I willed to check if the course content, student activities and objectives showed a match between assessment and instruction (BEAR assessment system, self-regulated learning and Bloom's Taxonomy). The fourth purpose acknowledges that the course outline is a learning tool (Bloom's Taxonomy, BEAR assessment system). As such it should show that students are being assisted to become self-regulated learners. This according to Parkes and Harris (2002) includes items such as Planning and self-management skills, Specific study strategies and availability of lecturer for continuous feedback and interaction with students.

Secondly, the Lecturer's Interview Guide was also born out of the principles of the unified theoretical framework. I wanted to investigate if these were evident in the instructional and assessment processes. The interview guide would help probe the lecturers' impression and expression of the role of assessment in learning, the teaching strategies and their involvement of students. This would reveal for example whether the objectives were properly classified (Bloom's Taxonomy), assessment was well-designed (BEAR Assessment System) and students were active participants in the learning process (Self-Regulated Learning). The same applies to the giving of feedback and how it is utilised by both lecturers and students.

The third research instrument was the Focus Group Interview Guide for Students which sought to investigate the role of students in the instructional and assessment processes. This instrument would for example help to establish if students were being given opportunities to self-regulate (forethought, performance and self-reflection). It would show how much knowledge they had of the course content, objectives and assessment procedures (Self-Regulated Learning, Bloom's Taxonomy and the BEAR Assessment System).

Fourthly, the Quizzes, Tests and Assignments Analysis Schedule was designed to investigate the extent to which assessment met the unified theoretical framework principles. It would be used as a checklist of stated objectives (in the course outline) against each quiz, test or assignment given. Therefrom it would make it possible to ascertain whether the stated objectives met the hierarchical criteria of Bloom's Taxonomy. The instrument would also help to check if there was a correlation between assessment, instruction and course content (BEAR Assessment System, Bloom's Taxonomy and Self-Regulated Learning).

Therefore, I have learnt in this chapter that the theories that underpin this study have a mutual relationship. They each can be used separately or together as a lens with which to view teaching (the instructional process) and assessment (quizzes, tests and assignments). In this study I intended to use the three theories in this collaborative way to understand the process of assessment at Solusi University.

3.8. SUMMARY

This chapter reviewed literature on the theories that underpin this study so as to apply them to the classroom situation. The three main theories that underpin this study are Self-Regulated Learning, The BEAR Assessment System and Bloom's Taxonomy of Learning Objectives. The theories that underpin this study are being reviewed in relation to how they resonate with constructivist learning theory.

Constructivist learning theory recognises that the learners construct meaning out of an interactive learning environment that includes lecturers, peers and learning materials. This leads to Self-regulated learning. There are three phases in the self-regulated learning model. These are forethought, performance and self-reflection and they are cyclical in nature. The Self-Regulated Learning model can be used effectively as an intervention to improve students' study skills, time management, and use of learning and help-seeking strategies as well as homework practices.

The BEAR Assessment System is based on four principles which are; 1) a developmental perspective, 2) a match between instruction and assessment, 3) management by instructors to allow appropriate feedback, feed-forward, and follow-up, and 4) the generating of high-quality evidence. Self-regulated learning should be a natural occurrence when assessment is

being guided by the BEAR Assessment System. For example, students can engage in the cyclical phases of forethought, performance and self-reflection during both instruction and assessment (principle 2) and when high quality evidence is given (feedback) to allow for feed forward and follow-up to be done (principle 4).

The third theory underpinning the focus of this study is Bloom's Taxonomy of Learning Objectives. It has got six hierarchical categories namely remember, understand, apply, analyse, evaluate and create. It is advised that assessment must be guided by these objectives in their hierarchy if self-regulated learning is to take place. The theories that underpin this study are closely related. They are constructivist in nature and therefore there is a cross-pollination of ideas and implementation of the distinct principles of each theory.

The surface and deep learning approaches come from the emphasis that is given by an assessment system. In the surface approach to learning, rote learning takes place as the student reduce what is to be learnt to the status of unconnected facts to be memorized. In the deep approach to learning the students actively engage with the programme material because of their curiosity and resolve to do well. The deep learning approach is constructivist in nature and should lead to self-regulated learning.

Scholars have suggested other innovative ideas intended to stimulate the deep learning approach to academic work. These include the Constructive Alignment (CA) theory and the presage, process and product ('3P') learning and teaching model. Studies have shown that the CA theory and the '3P' model are constructivist in nature and should be able to induce deep learning in students.

It is the questions related to pedagogical issues such as these that provoked this current study to be embarked upon. It was hoped that the conceptual framework of the study would be able to contribute to the overall development of strategies to enhance formative assessment practices at Solusi University. This was done in an attempt to reposition the university's continuous assessment in the context of metacognitive self-regulated learning. I intended to use this case study to contribute to the wealth of knowledge in the scholarly discussion and debate on the subject of assessment.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1. INTRODUCTION

The review of literature in chapters two and three produced recurring themes with regards to the self-regulated learning approach to teaching and learning. It emerged in both chapters that emphasizing the importance of adopting a self-regulated learning approach brings to fore the constructivist learning theory. The constructivist and interdependent nature of the theories that underpin this study was reviewed. This provoked certain pedagogical issues specifically in relation to the true worth or value of assessment practice at Solusi University. These included, inter alia, evidences of a match between instruction and assessment, proper classification of objectives and a correlation between assessment, instruction and course content. The ensuing methodology sought to facilitate the process if investigating such and other related issues.

This chapter describes the methodology to include the research paradigm, the research design as well as the sampling, data generation and data analysis procedures. Furthermore, a discussion of the study's trustworthiness and ethical considerations was done.

4.2. THE RESEARCH PARADIGM

This study is located within the constructivist-interpretivist paradigm. Joubish et al. (2011: 2083) point out that a paradigm is essentially a worldview, a whole framework of beliefs, values and methods within which research takes place. But, in the context of research methodology, the term has also come to mean a set of philosophical assumptions about the phenomena to be studied, about how they can be understood, and even about the proper purpose and product of research, (Joubish, et. al., 2011)

The constructivist-interpretivist paradigm stems from the qualitative research approach being followed by this study. Thanh, N. C. and Le Thanh, T. T. (2015: 25) concur with other scholars to note that the interpretivist/constructivist paradigm predominantly uses qualitative methods. The paradigm renders itself to constructivism and interpretivism. In Section 3.1, I argued that the unifying idea in each of the theories that underpin this study is constructivism

because their characteristics do manifest themselves through constructivist principles. The following summary by Crotty (1998) cited in Creswell (2009: 8) outlines three assumptions with regards to constructivism:

1. Meanings are constructed by human beings as they engage with the world they are interpreting. Qualitative researchers tend to use open-ended questions so that the participants can share their views.
2. Humans engage with their world and make sense of it based on their historical and social perspectives. Thus, qualitative researchers seek to understand the context or setting of the participants through visiting this context and gathering information personally.
3. The basic generation of meaning is always social, arising in and out of interaction with a human community. The process of qualitative research is largely inductive, with the inquirer generating meaning from the data collected in the field.

The Theoretical Framework is being used in this study to derive meaning from the findings of the research. Hence interpretivism pops-up as a matter of necessity. Interpretivism is dependent on constructivist ontology (Goldkuhl, G. 2012: 137). Likewise, Creswell (2009: 8) postulates that social constructivism is often embedded with interpretivism. He states further that social constructivists hold the assumption that individuals develop subjective meanings of their experiences because of the desire to understand the world in which they live.

Thus the current study sought to critically appraise the continuous assessment process at Solusi University beyond just its efficiency and rationality of design. It was expected to give an appreciation of the whole process to include issues of quality and control, collaboration and participation vis-à-vis the data that was collected. In this case I intended to use the theories that guide this study as lenses to view and understand the assessment practices at Solusi University as portrayed by the lecturers and students. Thereafter I intended to determine how to bring those theories to positively impact the assessment process in the university.

The Qualitative Research approach was adopted in this study. According to Cresswell (1994), as cited by Joubish et al. (2011: 2084), "A qualitative study is defined as an inquiry process

of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting." The current study intended to know and make sense of the formative assessment process at Solusi University from the perspective of the students and their lecturers. The research study was done in the natural setting of the university to give a vivid description of formative assessment.

There are some justifications for using the Qualitative Research approach. Leedy and Ormrod (2010: 136) posit at least four purposes for qualitative research studies. Each one of them is accompanied by an explanation of how it would apply to the current study:

1. Description: They can reveal the nature of certain situations, settings, processes, relations, systems or people.
   In this case I used qualitative research to explore the nature of the assessment system and process at Solusi University.
2. Interpretation: They enable a researcher to (a) gain new insights about a particular phenomenon, (b) develop new concepts or theoretical perspectives about the phenomenon, and (c) discover the problems that exist within the phenomenon.
   I expected to discover the problems that existed within the assessment practices at Solusi University because I would have gained new insights about it. Then I intended to propose new concepts or theoretical perspectives of formative assessment for the university.
3. Verification: They allow a researcher to test the validity of certain assumptions, claims, theories or generalizations within real-world contexts.
   I was able to ascertain if self-regulated learning was taking place through the various instruments (see section 4.4) and the theories that underpin this study.
4. Evaluations: They provide a means through which a researcher can judge the effectiveness of particular policies, practices or innovations.
   I was able to use the information gained from my research to judge the fairness and effectiveness of the assessment policies and practices at Solusi University.

The selection of the Qualitative Research approach was necessitated by the questions that were being raised in this study. The two-fold research question read: 1). What is the true worth or value of formative assessment in the context of self-regulated learning? This had the following two sub-questions: a). How do lecturers and students in the various Departments

characterise the quality of formative assessment practices? b). What do course outlines and related documents suggest regarding the quality of formative assessment and how does such evidence compare with staff and students' perspectives? 2). How can the self-regulated learning approach add value to formative assessment practices in this university?

The preceding questions required qualitative answers. Such are those which tend to be subjective in nature and varied in circumstance. Krauss (2005: 760) makes a general observation that qualitative research is based on a relativistic, constructivist ontology that posits that there is no objective reality. Each individual's responses do matter and need to be looked at in relation to the bigger picture; in the case of this study the bigger picture was Self-Regulated Learning.

Hence the study sought partly to understand how individual lecturers and students perceived the quality of formative assessment at Solusi University especially in view of the self-Regulated learning approach.

4.3. RESEARCH DESIGN

The Case Study research design was employed. Yin (2009: 18) defines a case study research method as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used. A similar definition is given by Bassey (2012: 156) in the context of education. He emphasises that it is conducted in its natural state within a localised boundary of space and time (i.e. singularity) into interesting aspects of educational work.

The Case Study research design was suitable for the current study because it focused on formative assessment as a contemporary phenomenon within its real-life context at Solusi University. There are several advantages of this research design over others. Bhattacherjee, (2012: 93) proposes the following advantages which fit into the context of the current study:

1. It can be used for either theory building or theory testing. In interpretive case research, the constructs of interest need not be known in advance, but may emerge from the data as the research progresses.

The three theories guiding this study have been shown in Section 3.7 to form a thematic unit. This was used as a lens with which to view the assessment practices at Solusi University.

2. The research questions can be modified during the research process if the original ones are found to be less relevant or salient.

   I was able to examine my research questions in relation to the progress of data collection made the needed modification.

3. It can help derive richer, more contextualized, and more authentic interpretation of the phenomenon of interest by virtue of its ability to capture a rich array of contextual data.

   I hoped that this would come from the interviews that were going to be conducted as well as from the analysis of the various documents being used for assessment purposes at Solusi University.

4. The phenomenon of interest can be studied from the perspectives of multiple participants and using multiple levels of analysis (e.g., individual and organizational).

   This was also to come from the processes outlined in number 3 above.

Literature shows that the case study research design has been used with success in carefully planned and crafted studies of real-life situations, issues, and problems. According to Soy (2009: 20), two such projects may be cited to show the successful use of Case Studies to improve the social conditions of people. One such project as cited by (Yin, 2009) is a book edited by Jonathan Crane (1998) that documents nine social programs as separate cases ranging from education to nutrition to health. These were used to describe and bring about certain innovations in real-life contexts (Yin, 2009: 20). Thus a case study research is contextual and deals with situations on the ground. The findings bring out certain realities that may not have been noticed.

It was hoped that the same would apply for Solusi University. While formative assessment is a major component of the teaching and learning process in the University, there was need for more knowledge regarding its effectiveness. Merriam (1988: 3) argues that, "research focused on discovery, insight, and understanding from the perspective of those being studied offers the greatest promise of making significant contributions to the knowledge base and practice of education." I anticipated that the findings of the current study would reveal the

strengths and weaknesses of the assessment process at Solusi University in terms of its ability to generate self-regulated learning. I envisaged that this would contribute to the knowledge base by development of a comprehensive model of assessment for the university.

4.4. PARTICIPANT SELECTION AND SAMPLING

The participants for this study were drawn from four of the five faculties at Solusi University. These are: 1). Faculty of Arts; 2). Faculty of Business; 3). Faculty of Science and Technology and 4). Faculty of Theology and Religious Studies. These operate on a conventional calendar of two semesters per year whilst the Faculty of Education operates on a Block-Release basis.

There are eleven Departments that operate within the four Faculties during the regular semester in the University. The participants came from the 175 (one hundred and seventy-five) second year students in the university. The breakdown in Table 4.1 shows the faculties, the relevant departments and the enrolment there in.

The second year students were selected on the basis that they would have had a full year of exposure to the formative assessment practices in the university. They stood to benefit from any improvements to the formative assessment practices because they would still have another two years to complete their studies.

Purposive Sampling was used to select the participants. Coleman (2012: 259) argues that this is the most strategic method in qualitative research. Individuals are deliberately selected on the basis of expertise or station in life. Purposive Sampling was adopted for two reasons: Firstly, the participants for this study were typical of a group that was directly involved in formative assessment and secondly they represented diverse perspectives on the issues being considered, (Leedy and Ormrod 2010: 212). Since the current study is qualitative in nature it became apparent that purposeful sampling would be more convenient to use.

Table 4.1- Participant Enrolment Breakdown According to Faculties and Departments

Faculty	Department	Number of Students
Arts	Languages and Communication	9
	History, Peace and Conflict Studies	13
Business	Accounting	43
	Computer and Management Information Systems	13
	Finance	13
	Management and Marketing	23
Science and Technology	Agribusiness	14
	Clothing and Textiles	3
	Environmental and Biological Sciences	7
	Food Science and Nutrition	5
Theology and Religious Studies	Theology	32
TOTAL		175

Adopted from Records in The Registrar's Office: Solusi University

One Department per Faculty was purposively selected on the basis of being able to provide first-hand information on the topic under investigation. Within the selected Departments, one core course (module) was purposively selected and all students taking that course (module) comprised the sample from that Faculty. All in all, there was a sample of 98 (ninety-eight) students and 4 (four) lecturers taking each of the four courses (modules).

4.5. DATA GENERATION INSTRUMENTS

There were two data generation instruments namely, interviews and document analysis. Under interviews there were two types namely, a Focus Group Interview Guide for Students (see Appendix 1) and an individual face-to-face Lecturer's Interview Guide (see Appendix

2). Under document analysis there was the Course Outline Analysis Schedule (see Appendix 3), and the Quizzes, Tests and Assignments Analysis Schedule (see Appendix 4).

Parts of the interviews were done with four focus groups of students. According to Leedy and Ormrod (2010: 148), these are composed of 10-12 people brought together by a researcher to discuss a specific topic and in which interaction among participants may be more informative. The Focus Group Interview Guide was used to guide the interviews that I had with representative students from each of the four modules. Interviewing is a flexible research tool that involves conversing and asking questions (Coleman, 2012: 250). The Focus Group Interview Guide was divided into three sections which are Role of Assessment in Learning, Range of Assessment Methods as well as Frequency and Timing. The first section sought to find out whether students understood the important role that formative assessment played in the learning process. Did they look at formative assessment as being used for grading purposes or as a means for concept formation or for both of these? (See Section 5.1 on the various responses).

The students in the focus groups disclosed the various methods that were used to assess them. There are some popular assessment methods such as simple recall questions which do not require deep thinking and also make marking easy. Rote learning is likely to be the outcome of such methods. Knowledge of the methods would also help to reveal the extent to which the students were active participants in the learning process. The questions in the interview guide opened up discussions to determine whether this was so (see Section 5.1 on the various responses).

The third section of the Focus Group Interview Guide sought to find out the frequency and timing of assessment. Together with the range of assessment methods, this was compared with the information in the course outline and the frequency of each method in the Quizzes, Tests and Assignments Analysis Schedule (see Section 5.1 on the various responses).

Interviews were also conducted with the individual lecturers who teach each of the four courses (modules) respectively. A face-to-face interview enables the interviewer to observe visual clues and body language which may provide clues on how to proceed (Coleman, 2012: 254). The Lecturer's Interview Guide (see Appendix 2) contained questions intended to collect nearly the same information as the one given by the focus group. The slight variation

was that it also sought to find out the lecturer's attitude and opinion on the relevance of the formative assessment process at Solusi University. The responses helped to point out areas needing address or redress (see Section 5.1 on the various responses).

Data was also generated through document analysis. One of the documents to be analysed was the course outline. The Course Outline Analysis Schedule (Appendix 3) was used to do this analysis. Woolcock (2005: 8) argues that an effective course outline which is pedagogically sound should establish clear relationships between course objectives, student assessment, and evaluations of teaching effectiveness. Such relationships were seen from a comparison of the Course Outline Analysis Schedule with other data collection instruments (see Table 5.3 on the summary of the data that was captured).

The Course Outline Analysis Schedule contained three sections. These are Course Outline as a Contract, Course Outline as a Permanent Record and Course Outline as a Learning Tool (Parkes and Harris, 2002: 56). When the course outline is considered as a contract it binds both the students and the lecturer to laid-down policies and procedures. These address such areas as grading components and weights as well as academic dishonesty. The course outline as a permanent record means that it is enduring without significant marked changes. This is the section where course objectives, the course content and assessment procedures are described. The last section of a course outline sets it as a learning tool. This gives tips on study skills and strategies as well as resource management.

Another instrument that was used for documents analysis is the Quizzes, Tests and Assignments Analysis Schedule (Appendix 4). This paired the objectives of each quiz, test or assignment given against the course objectives as outlined in the course outline. It was able to bring to fore how many objectives each class would have actually been assessed on (see Table 5.11 on the summary of objectives covered by the ranges of questions in the quizzes, tests and assignments for the four modules).

4.6. DATA GENERATION PROCEDURES

First, at the beginning of the second semester in September, 2015 I approached the four respective lecturers to seek their consent to participate in the research process. They each agreed to do so and proceeded to sign the informed consent form (see Appendix 8).

Explanation and discussion of the interview procedure was done at this initial meeting. I then requested each one of them to give me the course outline for the particular course that they were taking. The Course Outline Analysis Schedule (Appendix 3) was used to collect data from the course outlines. As the semester progressed these were analysed so as to allow for further consultation and inquiry (see Table 5.3 on the summary of the data that was captured).

I then arranged to conduct an interview with each one of the lecturers separately. These were face-to-face semi-structured. This was done whenever it was convenient as the semester progressed. The interview sessions went on for about an hour or more in order to allow for further probing and enough time for the respondents to express themselves. The Lecturer's Interview Guide as shown in Appendix 2 was used to collect the data from these interviews (see Section 5.1 on the various responses).

There were four focus groups from the students that were also interviewed. I arranged a meeting with the student participants through the respective Heads of Department. Each group was scheduled separately. There was an initial meeting at which the participating students signed the informed consent forms (see Appendix 9). Explanation and discussion of the interview procedure was also done during that meeting. A maximum of ten people (10) in each of the four core courses (modules) were interviewed so as to allow everyone enough chance to talk.

The interviews for the focus groups were conducted towards the middle of the second semester. Each session took not less than one hour because there were follow-up questions and inquiries apart from the ones in the interview guide. Every participant was allowed to contribute freely without cohesion or lack of opportunity to do so. This was done in a pre-arranged, quite, medium size seminar room. The data from these interviews was collected using the Focus Group Interview Guide for Students as shown in Appendix 1 (see Section 5.1 on the various responses).

I also asked the lecturers to provide me with the copies of all the quizzes, tests and assignments that were to be given to the students for the second semester, 2015. The categories of information from these documents were collected using the Quizzes, Tests and Assignments Analysis Schedule as shown in Appendix 4. These were examined and reviewed as the semester proceeded due to further consultations and inquiries that were done (see Table

5.11 on the summary of objectives and the ranges of questions in the quizzes, tests and assignments for the four modules).

4.7. DATA ANALYSIS

Since this study adopted the qualitative research approach, data was analysed using themes and sub-themes. According to Ryan and Bernard (2003: 87), themes are abstract, often fuzzy, constructs which investigators identify before, during, and after data collection. Themes mainly emerge from the empirical data during the process of investigation and later when it is being analysed. Therefore, thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data (Braun and Clarke, 2006: 6). Nevertheless, the researcher may have certain preconceptions of the topic usually from literature and from the researcher's prior theoretical understanding of the phenomenon being studied (Ryan and Bernard, 2003). These should help the researcher to notice the merging themes with ease especially in terms of making sense of the data. The situation on the ground should be able to dictate this operation.

The process of analysing the data followed the established methods in qualitative research approach. According to Cohen et al. (2007: 461), Qualitative data analysis involves making sense of data in terms of the participants' definitions of the situation, noting patterns, themes, categories and regularities. This process was facilitated by the two data generation instruments that I used namely, interviews and document analysis.

As an investigator I expected to interact with data throughout the interview processes with the students' focus groups and with the individual lecturers. This gave me a glimpse of how the responses from the interviews correlated with the information from the documents that I had analysed. Thus, I was analysing the data as I interacted with it. According to Ratcliff (2008: 120), data collection and data analysis in qualitative research form a cycle that repeats itself over and over until the data stops giving new information. Coleman, (2012: 262) contends that this should be on-going from the start of the interview process as the interviewer reflects on what they are hearing.

As such there was need for a well-coordinated way of data capturing and presentation. There are suggestions from various scholars as to how qualitative data may be organised and

presented for analysis. One of these is by Ratcliff (2008: 122). He argues that the initial analysis of data should be organised and presented as follows:

1. Review of the Data- for the current study this is data that would have been written or collected through the day during interviews or document analysis.
2. Determining the Unit of Analysis and Coding the Data- I intended to develop a number of codes in the interviews as well as document analysis.
3. Developments of Categories- the various codes that I developed were grouped to form categories.
4. Connecting Categories, Identifying Themes, and Creating Hypotheses- in this study I connected the categories in order to identify and create themes and sub-themes.

These four suggestions reminded me as a researcher of the importance of developing codes and categories. This is how they were then connected in order to identify and create themes.

Another suggestion takes note of the importance of the respondents, the issues that arise and the instruments being used in the research. Cohen et al., (2007: 467) proposes the following ways of organising and presenting data analysis:

1. By groups- in the case of the present study this would mean organising the data by each Focus Group from the four core courses (modules).
2. By Individuals- in the present study there were four individual lecturers who were interviewed.
3. By issue- a number of issues did arise from the interviews as well as from the various documents that were collected for scrutiny.
4. By research question- there were three sub-questions which were expected to respond to the main research question in this study as pointed out in section 4.1.
5. By instrument- in the case of this study data was organised according to the Focus Group Interview Guide for Students, the Lecturers' Interview Guide, the Course Outline Analysis Schedule and the Quizzes, Tests and Assignments Analysis Schedule.

Following on from the two sets of suggestions above and using interviews and document analysis as the two data generation instruments, I proceeded as follows:

A. Interviews:

Stage 1: During data generation: at the end of each interview session, I identified emerging themes, information gaps, reflected on own questioning techniques and planned to revise ways in the next session wherever needed.

Stage 2: After completing all interviews: I identified emerging themes and grouped data accordingly; I identified common responses within each question; I identified differences in views; then I identified patterns, did other similar processes and recorded accordingly.

Stage 3: I scrutinised themes in relation to research questions; I identified contradictions and shared responses; I did other similar processes and recorded accordingly.

B. Documents

Stage 1: I grouped data according to source such as course outlines and the themes therein.

Stage 2: I identified themes across document sources.

Stage 3: I scrutinised data in relation to research questions.

For each stage above I recorded accordingly.

C. Documents

Stage 1: I grouped data according to source such as course outlines and the themes therein.

Stage 2: I identified themes across document sources.

Stage 3: I scrutinised data in relation to research questions.

For each stage above I recorded accordingly.

D. All Data Sources Together

Stage 1: I identified any common themes, contradictions, differences, inter alia.

Stage 2: I scrutinised all data in relation to research questions.

Stage 3: I made meaning of the data.

Stage 4: I created themes for the data presentation chapter (see Sections 5.1 and 5.2)

I then recorded accordingly for each stage above.

4.8. TRUSTWORTHINESS

The current study followed the qualitative research approach wherein the demand for trustworthiness became an absolute necessity. Dimmock and Lam (2012: 188) postulate that trustworthiness has to do with issues of validity and reliability. For this study I will adopt four criteria as noted by Shenton (2004: 64) citing Guba (1981) for use to ascertain trustworthiness. These are credibility (in preference to internal validity), transferability (in preference to external validity/generalisability), dependability (in preference to reliability) and confirmability (in preference to objectivity). From the next paragraph I indicate how each one of them was achieved in the case of the current study.

The first element by which to ascertain trustworthiness in research is credibility. I contend that credibility was unavoidable if this study was to be authentic. The term credibility refers to the factual accuracy of the research findings (Fitzgerald, 2012: 301). In the case of the current study it relates to the validity of the data within the confines of Solusi University. This implies that there needed to be a continuous examination or review of the information that would be coming from the interviews and the documents. In line with this I adopted the following strategies as suggested by Leedy and Ormrod (2010: 100) as a way of ensuring trustworthiness of my findings:

a. Extensive time in the field- apart of my ten years of academic experience at Solusi University, I used the second semester of 2015 (September to December) to uphold or correct certain tentative insights that I had formed over the years. I did this by comparing these with the information that was given by the various respondents and groups. The varieties of responses were compared with each other. The determination was based on the accuracy, applicability and truthfulness of the evidence.
b. Negative case analysis- I used the semester to continually improve upon my existing insights and assumptions by eliminating the contradictory ones. This largely involved a continuous comparison of the various components of my on-going analysis. Each episode and the distinct responses or evidences from the

documents were treated separately and compared with each other. This was so in order to establish consistency in my analysis. The inconsistent ones were either revised or abandoned completely.

c. Thick description- I acquired sufficiently rich and informative detail from my investigations. The resultant data was presented in a detailed mode that is transparent and self-explanatory. This should enable any reader to comprehend the data (see Sections 5.1 and 5.2).
d. Feedbacks from others- Conclusions have been drawn from the data that was presented. These needed feedback so as to regulate and modify their credibleness. There are other lecturers and senior staff such as those in the Registrar's office who were not part of the participants in the current study. As such I did interface with such colleagues so as to get their opinion on my treatment of data.
e. Respondent validation- The lecturers and students who were interviewed form the actual players of the situation being described. I did communicate my findings to them in order to get their opinion on the correctness and truthfulness of my conclusions.

The second element by which to ascertain trustworthiness in research is transferability. One must be able to carry into action the conclusions of the research. This refers to the possibility of having other readers to draw inferences from the research findings after applying them to their own contexts and situations (Dimmock and Lam, 2012: 202). In other words, my conclusions will need to be valid in other stations or organisations other than Solusi University. This however does not necessarily mean that the conclusions of any qualitative study can be generalized to all situations. The distinctive characteristic of qualitative research is particularity (Creswell, 2009: 193). As such the descriptions and themes in this research have been developed in the context of a specific site, namely Solusi University. The readers of the conclusions to this research will decide for themselves whether the results speak to their situation and experience (Pitney, 2004: 27). Hence the breadth of my research has to be plausible for it to be valid externally.

Thirdly, dependability is another element by which to ascertain trustworthiness in research. Dependability together with confirmability has to do with issues of reliability of the findings of the study. According to Anney (2014: 278), this involves participants evaluating the findings of the study to make sure that they are all supported by the data received from the

informants of the study. This is possible where at least two methods have been used to collect data from the participants (Shenton, 2004: 71). In the current study the use of the face-to-face interviews with the focus groups and the individual lecturers ensured that dependability was achieved. The documents that I collected from the lecturers, namely copies of course outlines, quizzes, tests and assignments also served the same purpose.

The fourth element by which to ascertain trustworthiness in research is confirmability. This ensures that the findings of the research have been derived from the data that was collected and not from the biased notions of the researcher's experience (Anney, 2014: 279). A common feature between dependability and confirmability involves issues of consistency and solidity of the findings of the study. Therefore, I also used a common approach to ensure that dependability and confirmability were established. From start to finish I maintained the raw data as I collected more information. Then I made it as a rule to go over the data that I was capturing from the interviews and documents, making comparisons and double checking with the participants.

In addition to all of the above four measures I factored in two concepts which have been recognised by scholars in dealing with validity and reliability in qualitative research. These are triangulation and member checking. They are considered to be part of the most powerful and common ways of ensuring that trustworthiness is met ((Dimmock and Lam, 2012: 202). In other words, they may be applied to the whole exercise of making certain that there is trustworthiness in research.

Triangulation is common and relevant to the applicability of the four elements namely credibility, transferability, dependability and confirmability of qualitative research. It augments the validity and reliability of research information by use of more than one source of data (Bush, 2012: 84). This was applied to the current study by the interviews as well as the document analysis that were done. Interviews were done with four different lecturers and also four different focus groups. Document analysis was done on four different sets of documents in the form of course outlines and quizzes, tests and assignments. These were able to provide a variety of data sources.

Member checks are also relevant and common to the applicability of the four elements namely credibility, transferability, dependability and confirmability of qualitative research.

According to Kornbluh (2015: 397), they consist in making follow ups with the participants to verify whether the researcher's perception of the data is compatible with their input and intended meaning. As such the process of data collection, recording, categorising and classification of themes was on-going from the beginning. During that process I conferred with the participants to check if they went along with what I had captured and given a certain meaning. This ensured trustworthiness of the study.

4.9. ETHICAL CONSIDERATIONS

Research work of whatever form cannot be done without taking care of issues of ethics. Ethics in research may be looked at from various perspectives. Punch (2014: 36) postulates that while ethics deals with what are good, right or virtuous courses of action, research ethics is a branch of applied ethics. It is focused on the specific contexts of planning, conducting, communicating and following up research. For Bhattacherjee (2012: 137) ethics are principles to guide researchers in data collection, analysis, and interpretation procedures. On the other hand, Wang (2013:763) argues that ethics are principles to guide in the interrelationships between the researcher and the researched. This sample of definitions recognises the strong tie that exists between a researcher and the participants as well as with the data in the research study.

Initial planning for the current study included a request for permission to conduct research with Solusi University as a case study. The copy of the letter for this request is shown in Appendix 5- Request for Permission to do Study. This was granted by the Faculty Research Committee of Solusi University on 6 March, 2015 as shown in Appendix 6- Letter Granting Permission to do Study. Additionally, Universities have policies that require ethical clearance for their students doing research at any level. This serves to offer protection from redress in case of any eventualities (Drake and Heath, 2011: 52). The current research was granted ethical clearance by the University of South Africa on 13 May 2015 as shown in Appendix 7- UNISA Ethical Clearance.

The granting of ethical clearance by the University of South Africa gave the impetus for the current study to go on. As a researcher there are some fundamental ethical values that one should uphold. According to Bhattacherjee (2012: 137-139), the following are the widely accepted ethical values together with comments on their application to the current study:

1. Voluntary participation and harmlessness- The participants in a research project must be aware that their participation in the study is voluntary, that they have the freedom to withdraw from the study at any time without any unfavourable consequences, and they are not harmed as a result of their participation or non-participation in the project.

   This information was communicated to each participant through a letter to which was attached an Informed Consent Form (see Appendix 8- Consent Letter For Lecturers and Appendix 9- Consent Letter for Students). This was written to them for their attention prior to the face-to-face meeting with them.
2. All participants must receive and sign an informed consent form that clearly describes their right to not participate and right to withdraw, before their responses in the study can be recorded. This was followed in the current study. A copy of the Informed Consent Form for Lecturers is shown in Appendix 10 and the one for students is shown in Appendix 11.
3. Anonymity and confidentiality- In the letter to each participant it is stated that anonymity and confidentiality will be maintained.
4. Disclosure. Apart from the letter that I served each participant, I also held a session to explain the nature of my study and the investigation to be carried out. I also gave them opportunity to ask questions and seek further clarification.
5. Analysis and reporting- I informed the participants that data from my findings would be reported using the qualitative research study approach and explained what that means.

4.10. SUMMARY

In this chapter I intended to deal with the methodology that would lead to data collection and analysis. There are two data generation instruments that were used. These are interviews and document analysis. The interviews were done with four lecturers, one from each of the four selected modules (core-courses) and a focus group from each of the four modules. The data was analysed using themes and sub-themes. Since the qualitative research approach was being used, I ensured that trustworthiness was established by the credibility, transferability, dependability and confirmability of the findings of my research. The fundamental ethical values in research were also strongly upheld.

CHAPTER FIVE

DATA PRESENTATION AND DISCUSSION

5.1. INTRODUCTION

This chapter seeks to present and discuss data that was generated during the research process. This is done through the themes and sub-themes that have emerged from the data. The generation of data was done using two instruments namely; interviews and document analysis (see Chapter Four). Hence the presentation and discussion of data is being done as the data from the different instruments converge to address a theme or sub-theme. Such should be able to yield some insights from the analysis that will help to make interpretations to the emerging patterns.

To begin with, I document some notable features that arose from the data on how the participants characterised the formative assessment process at Solusi University. These come first from the interviews that I had with the students' focus groups as well as those I did with the individual lecturers. They are hereby presented and discussed in order to address the first part of the first research question. The first research question reads, "What is the true worth or value of formative assessment in the context of self-regulated learning?" The first part of the first research question sought to find out how the lecturers and students in the various Departments characterised the quality of formative assessment practices.

Secondly, the outstanding features are noted and discussed from the analysis that I did on the documents that are used in the assessment process at Solusi University. They are presented and discussed in order to partially address the second part of the first research question in this study. It reads "What do course outlines and related documents suggest regarding the quality of formative assessment?"

The outstanding features from the two data sources are analysed and presented to result in four major issues to be discussed: (1) Performance, (2) Assessment of Learning, (3) Assignments, and (4) Course Objectives. This will help to address the second element of the second part of the first research question on how the evidence from the course outlines and related documents compares with staff and students' perspectives.

It is worth noting that qualitative data analysis begins at the same time that data is being generated (Creswell, 2009: 184). I was able to analyse the data as I was generating it from the focus groups' interviews together with the lecturers' interviews as well as from the documents. In each case I analysed the data for categories, trends, and connections between categories of what I heard and recorded from the interviews, (Ratcliff, 2008:120). This was done during the course of the interviews and later when all the data was being synchronised.

As for the documents, I did them course by course as each document was made available by the lecturer. I used the Course Outline Analysis Schedule to record for each course whatever item as per the schedule, (see Appendix 3). After that the information was combined in one Course Outline Analysis Schedule and analysed as was done for the interviews. I used the Quizzes, Tests and Assignments Schedule to capture the number of Quizzes, Tests and Assignments that were given for each course. The same was used to record the number of objectives according to Bloom's Taxonomy of Learning Objectives for each quiz, test and assignment that was given. These were tallied for frequency of occurrence.

5.2. CHARACTERISING ASSESSMENT PRACTICES IN THE UNIVERSITY

In this section some outstanding features on how the formative assessment process is characterised at Solusi University are discussed. These features address the first research question regarding how lecturers and students characterised the quality of formative assessment. This way of organising data according to research question is the most pragmatic because the data is narrowed down to the researcher's focus area, (Cohen et al., 2007: 468). Providently the issues being explored by the questions are all accessible because of proximity.

There were two sets of interviews that were done. The first set of interviews was done face-to-face with the students in focus groups. There were four focus groups of students representing the four core courses (modules) that were selected for this study. Each group was made up of ten students who volunteered to participate (see Appendix 1- Focus Group Interview Guide for Students). The focus groups are referred to as Focus Group 1(FG1), Focus Group 2 (FG2), Focus Group 3 (FG3) and Focus Group 4 (FG4) respectively. The second set of interviews was done with each of the four lecturers from the four selected core

courses/modules (see Appendix 2). The lecturers are referred to as Lecturer 1 (LEC1), Lecturer 2 (LEC2), Lecturer 3 (LEC3) and Lecturer 4 (LEC4) respectively.

The Focus Groups' interviews will be considered first. There were three sub-sections to the Focus Group Interview Guide. These are The Role of Assessment, Range of Assessment Methods and Frequency and Timing. Each question in the sub-sections sought to probe how the respondents characterised formative assessment practices at Solusi University. Thus a discussion of the three sub-sections will help to display the focus areas.

5.2.1. DESCRIPTION OF THE FORMATIVE ASSESSMENT APPROACH

The sub-section on the role of assessment in learning asked six guiding questions. These dealt with such issues as a description of the formative assessment approach, noting its advantages and disadvantages, the role of students and how this contributed to their learning. To begin with, I asked each focus group how they would describe the formative assessment approach used in the university. Two key responses emerged from FG1. One was that the assessment approach was very good for students. In this regard, one participant had the following to say:

> "*The formative assessment approach being used in the university is suitable for us as students. We are able to regulate our work by getting used to continuous assessment. It teaches us to work hard and be prepared all the time."*

A second issue from FG1 was that the system enabled students to excel in their studies. Here is what one participant said:

> "*For me the formative assessment system being used gives me a push to do better. I am able to know the areas of improvement after each quiz so that I can do better next time around."*

Coming on to FG2, one key issue was raised namely that the formative assessment system was very good and informative. In this regard one participant said:

> *"The formative assessment system at Solusi University is very good because it tests you on what you have learnt time and again. It gives a picture of how you did so that you are up to date with information."*

A common issue that emerged in FG3 is that the formative assessment approach being used at Solusi University is very good. It allows students to check their progress. One of the participants said:

> *"The formative assessment approach helps you to gauge yourself. It gives one a benchmark so that you know where you lie."*

Coming on to FG4 it was the common feeling that the formative assessment approach being used at Solusi University was very helpful to everyone even the low performers. This was particularly echoed in the words of one of the participants who said:

> *"I find the formative assessment system to be user friendly for all of us. The short quizzes enable me to concentrate in a specific area but above all, we are given make up quizzes and tests if we do not do well."*

In interviewing the individual lecturers, I followed a similar pattern as I did with the focus groups. I began by asking each lecturer how they would describe the formative assessment approach being used in the university. Several key issues were raised by the lecturers. One key issue was raised by LEC1 namely that the formative assessment system was fine in terms of the percentage allocated towards the final grade. The lecturer said:

> "*The system of giving students a number of assessment exercises on a continuous basis is fine percentage-wise. It gives each student a chance to do well at the end of the day. They will be left with only 50% to work for in the final examination while already having a good continuous assessment mark."*

Coming on to LEC2 the key issue raised was that the formative assessment approach was very effective as it kept students occupied. This is what the lecturer said

> *"The formative assessment system at Solusi University is effective. I give my students weekly quizzes. Then I give tests and assignments at the end of every topic. This keeps students on their toes."*

There was also one key issue raised by LEC3 namely that the formative assessment approach being used at Solusi University was very good in terms of performance indicators. Here is how the lecturer put it:

> "*I can say it is very good. It gives me a picture of how the students are performing. I do not have to wait for the final examination to see how they are doing in the course."*

For LEC4 also the formative assessment approach at Solusi University was very good as it provided leverage for all students to do well. The lecturer echoed the sentiments made by LEC1 in terms of students working for the continuous assessment mark in small manageable doses of quizzes, tests and assignments.

As can be seen from the responses there was a similar trend of thought between the lecturers and the students. There was a slant toward perceiving formative assessment as an anchor for performance. Both the lecturers and students were preoccupied with marks and grades more than with learning outcomes.

5.2.2. DISADVANTAGES OF THE FORMATIVE ASSESSMENT SYSTEM

I moved on and asked the focus groups about what disadvantages if any they saw in the formative assessment system. An outstanding issue that emerged in all the groups was that the formative assessment approach being used at Solusi University was vulnerable to cheating. In this regard a participant from FG2 had the following to say:

> *"It is disturbing to note that some students use their notes to answer the questions in the quizzes and tests just to avoid failure. This happens especially in big classes where the lecturer cannot possibly see what is happening in very corner."*

Likewise, another participant in FG3 observed that the quizzes and tests were shorter and covered specific areas. As such it was easy for a student to summarise the key points on a small piece of paper that could be hidden during assessment exercises.

In spite of this the students were contented that the formative assessment approach in the university was tailor-made for their benefit. As can be seen from the responses they did not find many set-backs to the approach being used for in-class assessment. Nevertheless, there was something in the form of scores that diverted the students from focused learning. Instead of using the formative assessment activities to improve their knowledge, some students cared more about getting more scores.

I then asked the lecturers for any disadvantages that they saw to the formative assessment approach that is being used at Solusi University. The responses were similar in many ways to

those of the students. One common key issue raised by all the lecturers was that the system could be susceptible to academic dishonesty. In this regard LEC4 observed thus:

> "*The formative assessment system is very good but it is difficult to manage in large classes. Students may resort to copying in quizzes and tests and also they may plagiarise their research assignments if one does not check carefully."*

In addition to that there were two other key elements that emerged from the lecturers in relation to the disadvantages of the formative assessment system at Solusi University. One of these is that there could be some side effects in terms of student morale. In regard to this LEC1 had this to say:

> "*I have come to realise that at the end of each semester I have to address certain side effects of the formative assessments that will have taken place. I notice that students may relax if the continuous assessment mark is high while those with low marks may be discouraged. These two issues must be addressed before the students sit for the final examination."*

Another key disadvantage that was raised is that the formative assessment approach at Solusi University could be open to rote learning. In this regard LEC3 commented as follows:

> "*For me the biggest disadvantage of the formative assessment system that we use is that it may encourage rote learning. In the process of preparing the quizzes and tests there is the danger that students may just cram notes to reproduce facts. I usually use a variety of approaches to curb this tendency."*

The aforementioned disadvantages may come as a result of the emphasis that is given to the whole process of formative assessment. An overt preoccupation with marks and grades by both the lecturers and students negates Self-Regulation and tends to stereotype teaching and learning (See Chapter Two, Section 2.6 and Chapter Three, Section 3.3). Thus formative assessment activities may even be susceptible to deceptive tendencies.

5.2.3 THE ROLE OF A STUDENT IN THE FORMATIVE ASSESSMENT PROCESS

I proceeded to ask the focus groups what the role of a student was in the formative assessment process and its implications for learning. One key issue emerged from all the focus groups. Students considered themselves to be the ones to implement and then benefit from the assessment system. In this regard one participant in FG1 said:

"My role as a student is to participate by writing the quizzes, tests and assignments that will have been given. This helps me to do better in my school work."

Apart from writing the given assessments, the element of having the opportunity to study and understand the concepts was pointed out by FG3. It was felt that this contributed to the overall performance of each student. Another participant in FG4 succinctly put it this way:

"*My role in the formative assessment process is to meet requirements. One must be faithful and do justice on your assessment. It removes bottlenecks in assessment performance because you do not have to wait for the final examination."*

Another benefit of formative assessment to students was the actions and activities expected of them. It turned out that the students were contented to do anything in class as long as it gave them marks. This is one of the conspicuous features that may be observed in the way the formative assessment process at Solusi University was being portrayed. There was a general acceptance by the students of being recipients and performers of the assessments.

The impression that students had of their role in formative assessment was also clearly expressed by the lecturers themselves. I asked them to explain what the role of a student was in the formative assessment process. The following were the key responses by each lecturer:

LEC1: "*The students must demonstrate maximum potential in all the quizzes and exercises."*

LEC2: "*It rests with the students to take responsibility to learn and do well."*

LEC3: *"They are stakeholders and participants. They must understand questions and respond accordingly."*

LEC4: *"The students must complete given work within given time for a good result."*

Hence both groups of participants shared similar sentiments on this aspect. The responses from the lecturers also show that students were expected to do the quizzes, assignments and tests for scores. This leaves out the fundamental features of self-regulated learning which go beyond theoretical knowledge (see Chapter Three, Sections 3.3 and 3.4).

The overall picture therefore suggests that the role of formative assessment in learning was to apprise the students of their performance (getting a good mark or grade). This is reflective of

a scenario in which formative assessment emphasises content competency to the exclusion of metacognitive self-regulatory strategies, (Hudesman et. al., 2013: 3). Such is the case especially in quizzes when students can merely reproduce the subject content in order to get good marks. Rather students should also be tested for their ability to implement new knowledge and adapt the acquired skills to varying conditions. Self-regulated learning strategies account for efficient deep learning which equips the learner for real world settings (see Chapter Two, Section 2.6 and Chapter Three, Section 3.6).

I went on to ask the focus groups whether they knew of any document that informed them about assessment practices in the university. I gave them the option of mentioning the nearest one if there was no such document. One common issue that emerged from all the groups was that there was uncertainty as to which document was being used to guide assessment practice in the university.

Nevertheless, two documents were mentioned as being the nearest to guide the assessment process. In connection with this the participants in FG1 and FG3 considered the Course Outline to be the document that informed them about assessment practice. On the other hand, participants in FG2 and FG4 unanimously agreed that the Academic Bulletin was the document that was being used to guide assessment practice. The Course Outline and the Bulletin are the very important documents that are in the hands of students and their lecturers. The students were aware of the areas in these documents which speak directly to formative assessment.

I also asked the lecturers to indicate whether they knew of any document that informed them about assessment practice in the university. They all responded alike that there was no document to guide assessment practice in the university. The Bulletin though was mentioned in relation to the percentage allocated to formative assessment vis-a-vis the final examination. The major portion of the Bulletin is about course descriptions for the various programmes of study. In this regard LEC1 had the following to say:

> *"No, except for the Bulletin wherein are the percentages for continuous assessment. It's ok that way I think."*

These responses by the lecturers and the students were an indication that there really was no document to guide formative assessment practice at Solusi University. What seemed to be

embedded in the minds of the respondents though was tied to marks and grades. This could be seen from the references to percentages for mark allocation in the Bulletin to be used to guide assessment practice.

5.2.4. KNOWLEDGE OF THE COURSE OUTLINE

I further asked the focus groups to identify the most important section of the Course Outline in terms of guiding formative assessment and to give reasons for that. Common issues emerged in the responses but with a variety of reasons being given. Two key responses emerged in FG1. One was that the course objectives were the most important section in the Course Outline in relation to formative assessment. In this regard one participant in the group said:

> "*Course objectives are the most important section in the Course Outline because they are the guidelines for assessment. They help to show what is to be given to you in which case you get prepared."*

The second key response given in FG1 was that the grading schedule was the most important section in the Course Outline to guide formative assessment. This is how one participant put it:

> "*The mark allocation or grading schedule is the most important section of the Course Outline because it shows areas of concentration. It gives the breakdown in percentages for each type of assessment and shows the areas in which to put extra effort."*

There were also two key responses that emerged in FG2. The first one was that course objectives were the most important section in the Course Outline to guide formative assessment. One participant said the following in connection with this:

> **"***I find the section on course objectives to be the most important because then I can read ahead of the lecturer*."

In regard to the second key response in FG2 it emerged that the course description or course content was the most important section in the Course Outline to guide formative assessment. Here is what one participant said:

"The course content is the most important area of the Course Outline because it helps me to see areas of concentration."

Coming on to FG3 and FG4 the common key response was that the section on course objectives was the most important in the Course Outline in terms of guiding formative assessment. In regard to this one participant in FG3 said:

"*I consider the course objectives to be very important because I can check on the content to be covered. This helps me to prepare for the quizzes."*

Likewise, a participant in FG4 had the following to say:

"The course objectives are the most important section in the Course Outline because they guide in checking progress. I have seen that the quizzes and tests cover the objectives in the Course Outline. This helps me to check on the progress I have made in my study and preparation."

The importance of the course objectives and content was seen in relation to the extent to which they could lead to a vantage point in terms of assessment. This was perceived in reference to achievement of a higher mark or grade in quizzes, tests and assignments.

I also probed the lecturers into the most important section of the Course Outline in relation to formative assessment and the reasons for it. There were several views that were expressed in this regard. The key issue that emerged was that the section on Course Objectives was the most important aspect in the Course Outline. Lecturer 1 had this to say:

"The Course Objectives form the most important section in the Course Outline. They give direction on what to assess and you can use them concurrently on the exercises, quizzes and assignments."

The other three lecturers gave somewhat similar reasons as to why the Course Objectives were the most important section in the Course Outline. The following issues were raised by the lecturers:

LEC2: *"Each objective links to a certain type of assessment that is given and the topics to be covered during the semester."*

LEC3: *"When the students look at the objectives in the Course Outline it allows them to read ahead of the assessments."*

LEC4: *"Yes every objective is earmarked for student achievement. It gives the students a leeway to navigate through the assessments.*

Evidently the lecturers' responses were in sync with those of the students in the focus groups. Objectives were certainly considered to be a very important section in the Course Outline. These also should be linked to the various assessments that may be given. Nonetheless the whole essence of Course Objectives is not limited to awarding or receiving a good mark or grade. The learners should be self-regulated to construct knowledge through problem solving and other activities. Therefore, the deep learning approach should give students the ability to use the objectives to set their own goals. By so doing they should be able to work conceptually and at high cognitive level as they monitor their learning. (See Chapter Three, Section 3.6 and Table 3.2).

5.2.5. RANGE OF ASSESSMENT METHODS

I then moved on to the second sub-section on the Range of Assessment Methods. This was intended to find out the formative assessment methods which were being used, the preferences and justification for doing so. The list of assessment methods included quizzes, tests, simulations, assignments, presentations, projects and term papers. Except for quizzes and tests the other methods are all varieties of assignments. I asked the focus groups to select one preferred method among those that were used to assess them and to justify their choice.

The key response in all the focus groups was that assignments were their preferred method of assessment. As for the reasons given for their preferences, one common issue emerged from all the four groups. All the focus groups were in unison that assignments gave more marks because they allowed them to collaborate, research and do well. In this regard a participant from FG1 had the following to say:

"*Most of us prefer assignments because you get more marks. When we are given assignments and group presentations there is ample time to discuss and thereby correct one another. Even for individual assignments one can take it to a discussion for more ideas."*

In the same vein I asked the lecturers to give their preferences and reasons for the assessment methods being used. It was unanimous to all of them that assignments were the preferred

method of assessment. Several issues emerged with regards to the reasons for this preference. LEC1 had this to say:

> *"I prefer assignments because they open the minds of students. They facilitate for creativity and innovation in the students."*

One key issue was raised by LEC2 namely that assignments could be done in a more protracted manner. This is what the lecturer said:

> *"Assignments can be lengthy so that students can be able to present all the steps in a formal sequence such as the preparation of journals and accounts. This is more than in a quiz where only a small section is presented."*

According to LEC3 assignments were said to give opportunity for knowledge construction more than knowledge reproduction (see Chapter Three, Section 3.4). The lecturer said:

> *"Assignments in this course give students the chance to do field work. This allows them to apply their knowledge as they analyse and put facts together in a project."*

There were two issues that were raised by LEC 4. These were that while assignments allowed students to research, class size was a big hindrance to giving more of these. This is how the lecturer put it:

> *"I prefer assignments primarily because students get to research and get more information. This enhances learning. However, the number of assignments is reduced when one has a big class because of challenges of marking."*

The reasons put forward by the lecturers give room for students to produce knowledge instead of just reproducing knowledge. The students in the focus groups however focused more on the immediate reward for doing assignments more than Self-Regulation, (see Chapter Three, Section 3.3 and 3.4).

The assertions by LEC4 in the response above are somewhat reflected in the third sub-section on the frequency and timing of the various assessment methods. It was clearly shown from the interviews that there were more quizzes than assignments given. Here are the responses to the frequency and timing of the quizzes, tests and assignments. Thus they also represent the views of the lecturers. The figures indicate the number of times in the semester that these were to be given group by group. Since the semester was still in progress, some of these were anticipated to be given later hence the ranges in some of the groups:

Table 5.1- Frequency and Timing of Quizzes, Tests and Assignments

Focus Group	Assignments	Presentations	Projects	Quizzes	Tests	Mid-Semester Examination
FG1	5	1		2		1
FG2	2-3	2		12-14	3	1
FG3	1-2	2	1-2	6-8		1
FG4	3	1-2		4-5		1

Source: Focus Group Interview Guide

Although assignments were the preferred method of assessment, more quizzes were given to students than assignments. If the quizzes and tests are to be lumped together while all the forms of assignments (research papers, book reviews, presentations, projects) are also put together, the assignments were still less in number. This in a way is indicative of what may be the reality on the ground. The reasons for this could be many and wide-ranging. The students have already indicated that assignments allowed them to collaborate and thus give them high marks or scores. The lecturers have also indicated the importance of assignments in inducing research skills in the students. Nevertheless, another set of responses from the lecturers in the sub-section on the range of assessment methods showed certain dispositions.

I asked the lecturers to give the justifications for each assessment method that they use. A set of similar and varied reasons emerged from the responses. There was one key issue that was raised by LEC1 namely ease of marking. Here is how LEC1 responded:

> "*I give quizzes and exercises simply because they are easy to mark. Sometimes I allow the students to swap papers to mark for each other."*

Coming on to LEC2 the common issues raised had to do with fulfilment of formalities more than realising self-regulated learning as is shown in the following words:

> *"I give quizzes for quick recall of facts while the tests help me to cover the topic content."*

There were two key issues that emerged from the responses by LEC3 and LEC4 namely performance and display of knowledge. LEC3 said:

> "*I use tests and exercises to check on the performance of students."*

Similarly, LEC4 raised the two key issues by saying:

> *"In the tests and quizzes there is a display of knowledge. The students show how much they remember."*

Here is displayed a conspicuous tendency to use quizzes as the main method for formative assessment solely for marks or scores at the expense of self-regulated learning (see Chapter Two, Section 2.6). Quizzes should also be used for self-regulated learning purposes by evoking deep learning skills in students (see Chapter Three, Section 3.6). The responses though have shown that the big issue for formative assessment was to award or to be awarded marks. Even though assignments were mentioned, they also may not have been fully utilised for learning purposes as has been indicated in Table 5.1.

There is a fourth sub-section which is found only in the Lecturers' Interview Guide namely relevance of formative assessment. I asked the lecturers for their opinion on the effectiveness of the formative assessment process at Solusi University. One common issue emerged from the responses by all the lecturers. The effectiveness of formative assessment was mainly seen in its ability to keep students occupied with academic work whilst they got rewarded with marks or grades.

5.2.6. SUMMARY OF RESPONSES FROM INTERVIEWS

With these exhibits from the interviews with both the focus groups for students and the lecturers it is prudent to give a summary of all the key points being raised. These are captured in Table 5.2 followed by a discussion of each point. The summary intends to show the similarities and differences in the responses from the two groups of participants.

Table 5.2-Summary Of Responses For Students' Focus Group and Lecturers' Interviews

	Focus Groups' Interview	Lecturers' Interview	Similarities	Differences
1.	Role of Assessment -To apprise students on performance -Bulletin and Course Outline main documents to guide assessment -Students note the importance of Course Objectives and Course Content	Role of Assessment -Formative assessment is very effective because it promotes good performance -Course objectives guide assessment -No document to guide assessment	-Assessment places strong emphasis on performance -Course objectives and course content important	Bulletin and Course Outline Vs No document to guide assessment
2.	Range of Assessment Methods -Formative assessment is in the form of quizzes and assignments -Students prefer assignments because they can research and help each other	Range of Assessment Methods -Quizzes and assignments -Assignments give opportunity for research and application of knowledge	-Formative assessment is in the form of quizzes and assignments -Assignments preferred method -More quizzes than assignments	-Assignments give chance to help each other -Assignments for research and knowledge expansion
3.	Frequency and Timing -More quizzes than assignments -Feedback on Quizzes within a week for smaller classes -Students prefer more assignments than quizzes	Frequency and Timing -More quizzes than assignments (anchor performance) -Feedback within a week for smaller classes -Assignments preferred	-More quizzes than assignments (anchor performance) -More Assignments preferred -Formative assessment more effective in smaller classes	-Assignments give chance to help each other -Assignments for research and knowledge expansion

Source: Focus Group Interview Guide for Students and Lecturers' Interview Guide

Table 5.2 shows certain indications regarding how formative assessment is characterised. There was a strong emphasis on student performance by both groups of participants. This came as a result of the dominance of accountability in the assessment process at Solusi University, (Black, 2013: 209). The lecturers are accountable to the system to award marks or grades and submit a record of such for continuous assessment. The students are equally

accountable to get good scores in order to survive the chop. As a result, everyone does anything possible within the system to have the marks or grades to be available. The lecturers then resort to quizzes and short exercises. The students on the other hand succumb to cramming and even cheating in some instances. This however is not in line with the ideals of Self-Regulated learning especially in terms of the use of feedback (see Chapter Two, Section 2.8).

In the sub-section on the role of assessment, both the students and the lecturers were in agreement on two points. They agreed that formative assessment placed a strong emphasis on performance. They also concurred that course objectives and course content were important to formative assessment in assisting the students to read for quizzes. They however differed on the documents that guide assessment. The focus groups were uncertain about which document was being used. Some of them settled on the Bulletin while others resolved that the Course Outline was the nearest document that guided the process of assessment. On the contrary the lecturers reported that there was no document to guide the process of assessment. This in effect shows that there is no document to guide assessment at Solusi University.

In the sub-section on the range of assessment methods both sets of participants recognised the prevalence of quizzes and assignments as the assessment methods. Whilst both groups preferred assignments over other methods of assessment, they differed in the reasons for their preferences. The students perceived that assignments gave them chance to help each other. The lecturers considered assignments to be an opportunity for the students to research and expand their knowledge.

As for the third sub-section on the frequency and timing of the various methods of assessment, indications were that more quizzes than assignments such as research papers and presentations were being given. The main reason was that quizzes provided a better way to boost the performance of students. Formative assessment was considered to be more effective in smaller classes. As a way to improve the formative assessment system it was suggested that more assignments than quizzes should be given. The reasons for this were as different as was indicated in sub-section 2 on the range of assessment methods.

The findings from this study have brought out four conspicuous features on how formative assessment was characterised at Solusi University. Firstly, it was portrayed that the formative

assessment process placed a strong emphasis on students' academic performance. This came out in the responses in each one of the sub-sections of the Focus Groups' Interview Guide as well as the Lecturers' Interview Guide. There was an unconcealed engrossment with marks and grades while Self-Regulated learning strategies were being underplayed.

Secondly, course objectives were considered to be very important. These were identified by both the students and the lecturers from the Course Outline. The issues raised revolved around the link that course objectives have to the success of students in the quizzes, tests and assignments. There was however a limited understanding by both groups on the essence of course objectives vis-à-vis Self-Regulated learning; that is knowing that objectives can be used by both lecturers and students to evoke deep learning approaches as perceived in the Theoretical Framework (see Chapter Three, Section 3.6).

Thirdly, there was a paradox on which document was being used to guide assessment practice at Solusi University. The responses from the focus groups let out some uncertainty over which document was being used. The academic Bulletin and the Course Outline were said to be the nearest documents that could be used to guide assessment. The lecturers reported that there was no document that was being used to guide assessment practice in the university.

Lastly, both the lecturers and students preferred assignments over other methods of assessment but for somewhat different reasons between. The students found assignments to be a good source of marks and grades because they could collaborate and discuss the answers. The lecturers on the other hand considered assignments to be a good way of allowing students to become innovative in research and knowledge production.

It is crucial for both the students and the lecturers to have the correct view of formative assessment. "Formative assessment can be seen as the construction of shared and negotiated meanings between teacher and student," (Yin and Buck, 2014). While this is true such should be directed at self-regulated learning strategies on collaborative learning and deep learning (see Chapter Two, Sections 2.6 and Chapter Three, Section 3.6).

5.2.7. FORMATIVE ASSESSMENT DOCUMENTS ANALYSIS

The first element of the second part of the first research question in this study was about what the course outlines and related documents suggest regarding the quality of formative assessment. In this regard another set of data that was generated is from the various documents that are used in the assessment process at Solusi University. This part of the research question will be answered in this section on the basis of data from two important documents namely, (1) The Course Outline Analysis Schedule and (2) The Quizzes, Tests and Assignments Schedule.

The first set is composed of four copies of the Course Outlines representing each one of the selected core courses. The Course Outlines were analysed using the Course Outline Analysis Schedule (see Appendix 3). Table 5.3 shows the summary of the analysis for the four core-courses. Each tick represents evidence on the stated item from a Course Outline for a particular core course or module. For example, the item on "Clear and accurate course calendar" is "Not Included" in all the four Course Outlines.

There are three sections in the Course Outline Analysis Schedule. The first section covers the purpose of a Course Outline as a contract. In all the Course Outlines, grading and attendance policies were extensively included. The academic dishonesty policy was also given prominence. However, there was no clear and accurate course calendar and policies on make-up, incompletes and revisions were not included.

In the second section the Course Outline serves as a record of what was taught. In this section references and assessment procedures were extensively included. The course content was also described extensively. Nevertheless, the course objectives were partially linked to Bloom's Taxonomy of Learning Objectives which may be considered as professional standards.

Table 5.3-Summary of Data Capture for The Course Outline Analysis Schedule

Item	Not Included	Partially Included	Extensively Included	Main Point
Course Outline as a Contract				
Clear and accurate course calendar	√ √ √ √			No Calendar
Grading policies: components and weights			√ √ √ √	Grading given prominence
Attendance policy			√ √ √ √	Attendance emphasised
Make-up policy	√ √ √	√		No make-up policy
Academic dishonesty policy		√	√ √ √	Academic honesty a priority
Policies on incompletes and revisions	√ √ √ √			No policy
Course Outline as a Record of Coursework			√ √ √ √	References a priority
Required texts and other materials				
Course objectives, linked to professional standards		√ √ √ √		Objectives partially professional
Description of course content		√	√ √ √	Course content described
Description of assessment procedures			√ √ √ √	Assessment procedures a priority
Course Outline as a Learning Tool				
Planning and self-management skills	√ √ √ √			Not included
Time to spend outside of class	√	√ √ √		Partially prioritised
Specific study strategies	√ √	√ √		Barely prioritised
Tips on how to do well on assessments	√ √	√ √		Barely prioritised
Availability of instructor	√	√ √ √		Partially Prioritised
Campus resources for assistance	√ √	√ √		Barely prioritised
Relevance and importance of the course		√ √ √ √		Partially prioritised

Items adapted from Jay Parkes & Mary B. Harris (2002). "The Purposes of a Syllabus," *College Teaching*, 50:2, 55-61, DOI: 10.1080/87567550209595875

The third section of the Course Outline Analysis Schedule covers the purpose of the Course Outline as a learning tool. Over here planning and self-management skills were not included while the relevance and importance of the course was partially prioritised. Specific study strategies and tips on how to do well on assessments were barely prioritised and the availability of the instructor was partially prioritised. Hence the picture being portrayed here is that the Course Outline was not effectively utilised as a learning tool (see Chapter Three, Sections 3.3-3.5).

Consequently, the outstanding features from the three sections of the Course Outline Analysis Schedule are being noted in this summary. The extensive inclusion of grading policies and assessment procedures in the Course Outline implies a strong emphasis on performance. The dominance of the academic dishonesty policy implies that assignments were given preference also to a certain level. Nevertheless, the course objectives were partially linked to professional standards. Additionally, the Course Outline was not effectively utilised as a learning tool. The main role for students was just writing quizzes, tests and assignments. Thus it may be deduced that the self-regulated learning approach did not take centre stage in the formative assessment process at Solusi University (see Chapter Two, Section 2.6 and Chapter Three, Sections 3.3-3.5). The Course outline as a planning tool should incorporate self-regulated learning strategies. Weinstein and Acee (2013: 198) strongly advise on the critical role of Self-Regulated learning in the following words:

> "*Fostering both strategic and self-regulated learning is essential for developing lifelong learners who can survive and thrive in diverse educational settings and workplace training environments."*

5.2.8. THE QUIZZES, TESTS AND ASSIGNMENTS ANALYSIS SCHEDULE

In addition to the Course Outline Analysis Schedule, data was also generated using the Quizzes, Tests and Assignments Analysis Schedule (Appendix 4). The quizzes, tests and assignments were analysed together and the information is tabulated in Tables 5.4- 5.11. For each one of them the quizzes, tests and assignments have been grouped as follows;

Quizzes- Quizzes and Exercises
Tests- The Mid-Semester Examination and Tests
Assignments- Presentations, Projects and Assignments

The Quizzes, Tests and Assignments Analysis Schedule are being discussed first on the basis of each core course or module separately. Objectives are one of the main features of the Quizzes, Tests and Assignments Analysis Schedule. These were examined alongside the various assessment methods. The objectives were classified according to Bloom's Taxonomy of Learning Objectives (see Chapter Three, Section 3.5). The hierarchy of these objectives has six categories namely remembering, understanding, applying, analysing, evaluating and creating, (Kidwell et.al. 2013:49). The objectives were gleaned from the Course Outlines.

Wherever there is no space the six categories of objectives are labelled as follows;

Rem.-Remember	Anal.-Analyse
Und.-Understand	Eval.-Evaluate
App.-Apply	Crea.-Create

The four core courses have been coded as Modules A1, B1, C1 and D1respectively. These are being discussed separately and then later they will be combined to give a representation of the quizzes, tests and assignments that were given.

Table 5.4- Module A1 Quizzes, Tests and Assignments Analysis Schedule

Course Objectives	**Quiz 1**	**Quiz 2**	**Exer 1**	**Exer 2**	**Test 1**	**Mid-Semester Examination**	**Assignment 1**	**Assignment 2**
1.	√Rem	√Rem	√Rem	√Rem		√Rem		
2.	√Und	√Rem	√Rem	√Rem		√Remember		
3.	√ App	√ Und	√ App	√ Und		√ Understand		
4.	√Eval	√App	√ App	√ Und		√ Apply		√
5.	√Eval						√Apply	√Apply
6.							√Create	√Apply
7.							√Analyse	√Und
8.		√Eval						√Und
9.		√ Und					√ Remember	√ Remember
10.							√ Understand	√ Understand

There were ten objectives in the Course Outline for Module A1. Table 5.5 summarises the frequency of occurrence of the six categories of learning objectives in the range of questions. These questions came from four quizzes, one test and two assignments.

Table 5.5- Occurrences of Learning Objectives in the Questions (Module A1)

	Occurrences	Remember	Understand	Apply	Analyse	Evaluate	Create
Quizzes	4	7	5	4		3	
Tests	1	2	1	1			
Assignments	2	2	4	3	1		1
		9	10	8	1	3	1

Out of the four quizzes, one test and two assignments there is a total of twenty-seven instances where the range of questions addressed the first three categories of Bloom's Learning Objectives namely remember, understand and apply. There are five instances in which the ranges of questions were directed at the last three categories of learning objectives, namely analyse, evaluate and apply. The objectives are arranged from lower-order to higher-order levels of learning (IACBE, 2014-2016: 3). As such if we group the learning objectives into two divisions then the categories to remember, understand and apply may be considered as lower-order with the last three namely analyse, evaluate and create as higher-order levels of learning.

In that case for Module A1 the ranges of questions in the quizzes, tests and assignments covered lower-order levels of learning. The lower-order levels of learning have a limitation in terms of realising self-regulated learning. This will be emphasised as the discussion ensues.

As for module B1 there were only three objectives on the Course Outline. The students wrote six quizzes, four tests and two assignments. This is shown in Table 5.6.

Table 5.6-Module B1 The Quizzes, Tests and Assignments Analysis Schedule

Course Object	**Qui 1**	**Qui 2**	**Qui 3**	**Qui 4**	**Qui 5**	**Qui 6**	**Test 1**	**Test 2**	**Test 3**	**Mid-Sem Exam**	**Assign 1**	**Assign 2**
1.			√Rem	√Rem	√Rem	√App	√ App	√App	√Rem	√ Rem		
2.	√ Rem	√ Rem	√Rem	√Und	√Und	√App	√ Rem	√Und	√Und	√ Under	√ Und	√ Und
3.	√ Rem	√ Rem	√Rem	√App	√App	√App	√ Und	√Rem	√App	√ Apply	√ Apply	√ Apply

The frequency of occurrence of the six categories of learning objectives in the range of questions is summarised in Table 5.7

Table 5.7- Occurrences of Learning Objectives in the Questions (Module B1)

	Occurrences	Remember	Understand	Apply	Analyse	Evaluate	Create
Quizzes	6	9	2	5			
Tests	4	4	4	4			
Assignments	2	2	2	2			
		15	8	11			

There are a total of thirty-four instances in which the range of questions addressed the lower-order levels of learning categories of objectives in Bloom's Taxonomy of Learning Objectives. There is no question or assignment which addressed any of the higher-order levels of learning objectives. Thus in Module B1 the ranges of questions in the quizzes, tests and assignments covered only more lower-order levels of learning.

There were two quizzes, two tests and two assignments that were given to students for Module C1 as shown in Table 5.8. These were supposed to cover eight objectives.

Table 5.8- Module C1 The Quizzes, Tests and Assignments Analysis Schedule

Course Objectives	**Quiz 1**	**Quiz 2**	**Quiz 3**	**Test 1**	**Test 2**	**Mid-Semester Examination**	**Assignment 1**	**Assignment 2**
1.								
2.	√Rem	√Und				√Remember		
3.		√Rem		√Und		√Understand		
4.	√Rem	√Und		√App		√Apply		
5.						√Understand	√Understand	
6.							√ Apply	
7.							√ Evaluate	
8.								√ Create

The two quizzes covered the first two categories namely remember and understand while the two tests addressed the first three namely remember, understand and apply categories. The assignments on the other hand addressed both the lower-order and the higher-order categories. Thus in Module C1 the ranges of questions in the quizzes, tests and assignments covered both the lower-order levels and the higher-order levels of learning.

In Module D1 there were two quizzes, one test and two assignments that were given to students. This is shown in Table 5.9.

Table 5.9-Module D1 The Quizzes, Tests and Assignments Analysis Schedule

Course Objectives	**Quiz 1**	**Quiz 2**	**Quiz 3**	**Test 1**	**Test 2**	**Mid-Sem Exam**	**Assignment 1**	**Assignment 2**
1.	√ Rem	√ Rem				√ Rem	√ Remember	√ Rem
2.	√Und					√Eval		
3.	√Und					√Apply		
4.		√Und				√Analy	√Apply	√App. & Anal
5.		√ Apply					√Und and Apply	
6.							√ Und and analyse	

There are six objectives that were being addressed by the range of questions in the assessment. The frequency of occurrence of Bloom's six categories of learning objectives in the range of questions is summarised in Table 5.10.

Table 5.10- Occurrences of Learning Objectives in the Questions (Module D1)

	Occurrences	Remember	Understand	Apply	Analyse	Evaluate	Create
Quizzes	2	2	3	1			
Tests	1	1	1	1		1	
Assignments	2	2	2	3	2		
		5	6	5	2	1	

Out of the nineteen instances where the six objectives were being addressed, sixteen of these were based on the lower-order categories. There were three instances where the first two of the higher-order levels of learning objectives namely analyse and evaluate were being addressed. Thus in Module D1 the ranges of questions in the quizzes, tests and assignments covered more lower-order levels of learning.

Concisely therefore the objectives covered by the ranges of questions in the quizzes, tests and assignments may be summarised as appears in Table 5.11. The summary indicates that there are a total of thirty assessments that were given to students taking the four modules. Of these fourteen were quizzes, eight were tests and eight were assignments. The picture presented here is that there were more quizzes than assignments that were given to students.

Table 5.11- Summary of Occurrences of Learning Objectives in the Questions

	Frequency	Remember	Understand	Apply	Analyse	Evaluate	Create
Quizzes	14	21	12	10		3	
Tests	8	8	9	8		1	
Assignments	8	6	9	9	3	1	2
	30	35	30	27	3	5	2

Furthermore, there were one hundred and two instances in which the range of questions addressed the six categories of objectives according to Bloom's Taxonomy of Learning

Objectives. Out of the one hundred and two instances where the six objectives are being addressed, ninety-two were based on the lower-order categories. There were only ten instances in which the higher-order levels of learning categories of objectives were being addressed. Thus in Modules A1 through to D1 the ranges of questions in the quizzes, tests and assignments covered more lower-order levels of learning.

Likewise, these findings may also be testified to in the presentation of data for each module. In Modules A1 and D1 it was observed that the ranges of questions in the quizzes, tests and assignments covered more lower-order levels of learning than higher-order levels of learning. In Module B1 the ranges of questions in the quizzes, tests and assignments covered only lower-order levels of learning. It was only in Module C1 that the ranges of questions in the quizzes, tests and assignments covered both the lower-order levels and the higher-order levels of learning. Nevertheless, even in this case there are only two instances where the higher-order levels of learning are addressed as compared to thirteen for the lower-order levels of learning. Hence the picture being presented is still that the ranges of questions in the quizzes, tests and assignments covered more lower-order levels of learning than higher-order levels of learning.

Hence from the Quizzes, Tests and Assignments Schedule there are two dominant features to be noted. The first one is that there were more quizzes than assignments that were given. The second dominant feature is that the learning objectives that were formulated and the range of questions given covered the lower-order levels of learning.

5.3. A DISCUSSION OF THE MAJOR ISSUES

The observable features from the focus groups' interviews for students, the individual interviews with the lecturers and document analysis have yielded four issues. These are:

1. Performance- the evidences from the interviews as well as the document analysis indicated that the formative assessment process placed a strong emphasis on students' academic performance.
2. Assessment Guide- the evidences from the interviews as well as the document analysis suggested that there was no proper document that was being used to guide assessment practice in the university.

3. Assignments- the students and lecturers equally indicated preference for assignments as the best method of assessing students but for different reasons.
4. Course Objectives-these were considered to be the most important part of any course. Nevertheless, the evidences from the interviews as well as the document analysis indicated that these were not properly formulated.

These are intentionally being used to address the second element of the second part of the first research question. This sought to explore how the evidence from the course outlines and related documents compares with staff and students' perspectives. This means that a comparison is being made of the evidences from the two data sources namely interviews (with the focus groups and the individual lecturers) and document analysis.

The major issues are discussed one-by-one. In doing so, I note some important points regarding data interpretation as a final step in data analysis according to Creswell (2009: 189). These are:

1. It involves making meaning of the data.
2. It involves asking questions about what lessons were learnt.
3. These lessons could be the researcher's personal interpretation couched in the understanding from one's own culture, history, and experiences.
4. It could also be a meaning derived from a comparison of the findings with information gleaned from the literature or theories.

5.3.1. PERFORMANCE

"Performance" is being considered here to mean the act of sitting for a quiz or test or doing an assignment in order to achieve a mark or a grade. It was clearly demonstrated in all the data sources that performance was given a strong emphasis in the assessment process at Solusi University. Nevertheless, the method by which this was achieved leaves a lot to be desired. The quizzes seemed to carry the day as the method to use in formative assessment because of their convenience to generate marks or grades. However, it is noted from the responses in the interviews as well as in the document analysis that there are several other methods that may be used. These include assignments which may be in the form of among others presentations, research papers, book reviews and reports. The assignments could be for groups or individuals.

The obvious question to ask is, "Why quizzes?" It was the general feeling as was indicated in the responses that having more quizzes than other assessment methods was motivated by the easy generation of marks. Evidences showed that both the lecturers and their students were obsessed with quizzes as the method of formative assessment because they also facilitated faster feedback.

While feedback is critical in formative assessment, the one being referred to here is single-phased for purposes of giving grades. It is only one type of feedback among several others. As was pointed out earlier on (see Chapter Two, Section 2.8 on "The Role of Feedback in Self-Regulated Learning"), feedback should include responses to written assignments which encompass annotations and comments on drafts or on finalised assignments in addition to verbal dialogues prior to or after submission. Simply doing corrections based on marked scripts cannot allow the student to self-regulate and conceptualise what should be learnt. In the Theoretical Framework I argued in favour of the Constructive Alignment (CA) theory and the presage, process and product ('3P') learning and teaching model. These are constructivist in nature and should be able to induce deep learning in students to result in self-regulated learning, (see Chapter Three, Sections 3.3 to 3.5).

Quizzes were said to be easy to mark, allow for quick recall of facts and were relatively more convenient to use to check on performance. What this all means is that there was a narrow focus upon which performance was being conceived. While formative assessment is expected to raise student achievement it should also achieve the standards of learning, (Black and William, 2010: 81). In reality formative assessment is closely tied not only to achievement but also to learning. This symbiotic relationship between student achievement (of a mark) and student learning seemed to evade the implementers of formative assessment at Solusi University. This issue will be revisited later to be compared with the meanings derived from the other issues.

5.3.2. ASSESSMENT GUIDE

The second issue from both the interviews and document analysis is "Assessment Guide." This issue came about because it was not clear as to which document was being used to guide assessment. The common question to both lecturers and students was to mention any

document that informs them about assessment practice in the university. The common response with the lecturers was that there was no such document. There was a paradox with the focus groups as is to which document to guide assessment. Two key issues emerged namely that either the Bulletin or the Course Outline were being used as documents to guide the formative assessment process at Solusi University.

While the lecturers said that such a document did not exist, the students thought that either the Course Outline or the Bulletin was being used to guide assessment. Hence what is obtaining is that there is no document to guide assessment. Nevertheless, mark allocation and grading guides are the prominent features in these two documents. This leaves marks and grades to be the most convenient factors and guiding principles for the formative assessment process. For as long as marks or grades have been awarded (by the lecturers), or achieved (by the students) then it was assumed that formative assessment had been properly administered. As is argued in the next paragraph, it is doubtful if such an approach does result in effective teaching and learning.

In the Theoretical Framework in Chapter Three (see Section 3.4) it is noted that the summative use of formative assessment is meant to investigate and document student progress in the classroom rather than it being a one-shot testing situation for grading purposes. Formative assessment should accommodate the three phases of the self-regulated learning approach, namely forethought-as students prepare for educational endeavours; performance as students monitor their learning and self-reflection after a learning experience, (see Chapter 3, Table 3.2).

The absence of an assessment guide reveals a yawning gap in the whole system in terms of formative assessment or assessment for learning. As a starting point this can strategically be given priority if a document to guide assessment is part of the policy framework. There are several examples of assessment guides in some of the universities around the world. For this instance, it may be appropriate to find out what the rationale for the assessment guide is:

One of the examples of an assessment guide is from The University of Kent in the United Kingdom (UK). According to Cohen and Dean (2015: 1) the aims of the assessment guide among others is to promote principles of consistency of practice and sustainable assessment

so as to enhance students' learning experience. In other words, formative assessment practices ought not to deprive students of the self-regulated learning experience. When the whole assessment process is heavily dependent on one method then its sustainability is likely to be compromised. Therefore, some guidelines are needed per se to monitor formative assessment practice in terms of lecturer competencies and student orientations.

Another example of an assessment guide is from the University of Western Sydney in Australia. The rationale for the assessment guide is said to be a criterion and standards-based approach to assessment so as to shape effective student learning and teaching practice, and to assure quality, (Armstrong, S., Chan, S., Malfroy, J. and Thomson, R., 2015: v). In this approach also both the teaching and learning approaches are being guided. Thus the assessment guide provides to both students and lecturers the criteria and standards against which self-regulated learning is gauged.

Therefore, an assessment guide is a good starting point if self-regulated learning strategies are to be properly undertaken. The findings of the research show that this is not highly prioritised at Solusi University. The responses from the interviews are in tandem with the data from document analysis with regard to the limited or no use of self-regulated teaching and learning approaches. It is indicated in the document analysis that students are not equipped with planning and self-management skills, study strategies and time to spend outside class. These are necessary inclusions in the self-regulated learning approach. They enable the learners to be intentional and actively get involved in the learning process as they construct knowledge through problem solving and other activities (see Chapter 3, Section 3.3). Such is possible if an assessment guide is part and parcel of the assessment process. This issue is also connected to the next one on assignments.

5.3.3. ASSIGNMENTS

Thirdly "Assignments" come out as a common issue to both the interviews and document analysis. By assignments I mean those formative assessments which are not done under test or examination conditions. Quizzes and tests on the other hand are mini-examinations. It was clearly expressed by both students and lecturers that they preferred assignments over other methods of carrying out formative assessment. The issue with assignments is that even though they were the preferred method of assessment, they were not fully utilised.

Nevertheless, there was some indication from the interviews that all the respondents were aware of the major objective for giving assignments (see Section 5.1, pages 10- 13 above).

The responses indicate that there was on the part of both the students and lecturers, knowledge of the objective of assignments to inculcate self-regulated learning strategies. The lecturers expected that the students would be able to research and increase their knowledge base as they did their assignments. Such is appreciated as it leads to knowledge construction and reconstruction instead of knowledge reproduction (Zeidan, 2014). The students on the other hand thought that assignments allowed them to help each other to do well. This also is good as it facilitates collaborative construction of knowledge through social negotiation (Elwood and Murphy, 2015: 184). This would develop the necessary skills in the students to become effective learners in terms of constructivist learning theory (see Chapters Two and Three). Nevertheless, with the eminent preoccupation with marks and grades, it is anyone's guess if a justifiable job was being done with the assignments.

However, it is also encouraging to note that at least all the data sources have extensively recognized the policy on plagiarism. The academic dishonesty policy was extensively included in the Course Outline Analysis Schedule. The students and lecturers in the interviews also showed sensitivity to the same. There is thus a strong awareness of the need for dignity and integrity in the way assignments are done. There was though not enough ground to allow the nobility of this policy to be fully nurtured. It is discovered from both the interviews and document analysis that there were fewer assignments than quizzes given to students. This is an example of what Black and William (2010: 83) call "a poverty of practice." To emphasize this opinion, they posit, "There is a wealth of research evidence that the everyday practice of assessment in classrooms is beset with problems and shortcomings," Black and William (2010: 83). A much reduced number of assignments may be termed a short coming in the formative assessment process.

It need not be overemphasised that assignments are an important activity that facilitates self-regulated learning. One would expect therefore that even the objectives outlined in the Course Outline and the accompanying assignments would reflect this. Unfortunately, the documents that were analysed tell a different story as can be noted in the following extract from the Course Outline Analysis Schedule:

Table 5.12-Extract of Summary of Data Capture for The Course Outline Analysis Schedule

Item	Not Included	Partially Included	Extensively Included	Main Point
Course Outline as a Learning Tool				
Planning and self-management skills	√ √ √ √			Not included
Time to spend outside of class	√	√ √ √		Partially prioritised
Specific study strategies	√ √	√ √		Barely prioritised
Tips on how to do well on assessments	√ √	√ √		Barely prioritised
Availability of instructor	√	√ √ √		Partially Prioritised
Campus resources for assistance	√ √	√ √		Barely prioritised
Relevance and importance of the course		√ √ √ √		Partially prioritised

This sub-section dealing with the Course Outline as a learning tool is directly related to student activities. The evidence from all the Course Outlines was heavily slanting towards the non-inclusion of each of the items in this section. For example, the students were not given planning and self-management skills as they did their assignments. The Course Outlines did not include a schematic plan on specific study strategies and tips on how to do well in their assignments. In a nutshell assignments were not given the preference which they deserved for self-regulated learning to take place. As such assessment of learning becomes dominant in the process.

Assignments that are given to students from a self-regulated learning approach teach them to learn how to learn (see Chapter Three, Section 3.3). According to Schunk and Usher (2013: 18), the first two self-regulatory development levels are observation and emulation. They argue that the observation level strongly reflects the social cognitive emphasis on observational learning. It is in the interaction with peers that a student is able to discover some skills and knowledge of handling an assignment. Furthermore, the student can then emulate such behaviours on their own as a result of the feedback and encouragement that they receive at the observation level, (Schunk and Usher, 2013: 18). These levels are enshrined in the Self-regulated, Learning Model in the theoretical framework (see Chapter

Three, Section 3.3). Without these formative assessment runs the risk of emphasizing the summative aspect. This results in assessment of learning. The importance of course objectives is considered next as they are considered to be the main catalyst in formative assessment.

5.3.4. COURSE OBJECTIVES

The fourth issue that is common to both the interviews and document analysis is "Course Objectives." In both the interviews and document analysis the findings revealed that the objectives were partially linked to professional standards. As pointed out in the Theoretical Framework, when such is the case then assessments which focus on recall of factual knowledge will tend to steer students towards surface learning, (see Chapter Three, Section 3.6). Hawk and Shah (2014: 187) postulate that assessments should fit the character of the learning goal or task as well as the level of the learning goal. This is what deep learning is all about as presented in the Theoretical Framework (see Chapter Three, Section 3.6).

Nevertheless, most of the learning objectives were based on the lower-order levels of learning (see the Course Outline Analysis Schedule and the Quizzes, Tests and Assignments Schedule). This was testified to by the range of questions in the quizzes, tests and assignments. These were intended to yield content-based recall questions. Thus the range of questions addressed the lower-order levels of learning. The lower-order levels of learning as stated in Section 5.1 cover the objectives to "remember, understand and apply." The higher-order levels of learning objectives on the other hand are to analyse, evaluate and create, (IACBE, 2014-2016: 3). In the Theoretical Framework I argued that Bloom's taxonomy is intended to encourage a match between assessment and learning and teaching objectives (see Chapter Three, Section 3.5). If the objectives cover only the lower-order levels of learning, then there is a risk to render the whole assessment process to be inferior.

Practically therefore formative assessment cannot be divorced from course objectives. Assessment is a systematic process of determining the extent to which the learners achieve educational objectives (Muzumara, 2012: 151). The second principle of the BEAR Assessment System is "A Developmental Perspective." It describes the role of the lecturer to select goals and decide what to assess and how to assess it, (see Chapter Three, Section 3.4). If this step is not done with much care, then there is likely to be a mismatch between

assessment and instruction. This ignores the third principle of the BEAR Assessment System, (see Chapter Three, Section 3.3). If it is that way then there won't be enough ground to allow for Self-Regulated Learning to take place, (see Chapter Three, Section 3.3). It is therefore prudent to deduce that objectives go along with the other issues to form a certain link to describe how formative assessment was being characterised by both the students and the lecturers at Solusi University.

5.4. A COMPARISON OF THE MAJOR ISSUES

Consequently, the comparison of the issues from all data sources together as shown in Table 5.13 gives a distinct image. The evidences from the two data generation instruments namely, interviews and document analysis have a common missing element. When the image that is portrayed is seen through the Theoretical Framework as the lens (see Chapter Three) then one is able to see what was missing in the formative assessment practices at Solusi University. What was missing is the blending of the Theoretical Framework.

The four common issues namely Performance, Assessment Guide, Assignments and Course Objectives, all speak with one voice. When these are compared to one another in reverse order it may be seen that the blending of the Theoretical Framework is missing. It begins with not having the learning objectives in place. One of the characteristics of a good assessment programme is that it should be an objective-based process, (Muzumara, 2012: 158). If the course objectives are not properly formulated then the quizzes, tests and assignments are negatively affected. The issue on "Assignments" comes about because of the imbalance and toned down levels of quizzes, tests and assignments. There were more quizzes than assignments and all these were based on lower-order levels of learning.

Table 5.13-Summary of The Major Issues and Outstanding Features from all Data Sources Together

Data Source	Major Issue	Outstanding Features
Interviews	-Performance	-More quizzes than assignments -Content-based recall questions -Smaller classes preferred
	-Assessment Guide	-Differing perspectives -No document
	-Assignments	-Preferred over quizzes -Policy on plagiarism -Smaller classes preferred
	-Course Objectives	-Content-based recall questions
Document Analysis	-Performance	-Grading -Assessment procedures
	-Assessment of learning	-Concept formation not given prominence
	-Assignments	-Policy on plagiarism -More quizzes than assignments
	-Course Objectives	-Partially linked to professional standards -Lower-order levels

Intrinsically the level at which the course objectives are pitched affects the quality of the quizzes, tests and assignments. The instructor's choice of course learning goals and objectives is dependent on the instructor's pedagogical knowledge and competency, (Hawk and Shah, 2014: 182). This in turn influences the choice of assessment method to use, in this case quizzes. Such a state of affairs is strongly associated with either a lack of or reluctance to apply the necessary pedagogical skills. These may easily be summarised in the form of an

"Assessment Guide." Armstrong et al. (2015: 5) argue that the absence of an assessment guide deprives the lecturers and the students of a quality framework that defines and maintains academic standards. In such a situation assessment would then be perceived of in terms of a strong emphasis on the scores or marks that are awarded or acquired.

Thus "Performance" was the major issue in formative assessment at Solusi University. This was so because there was no "Assessment Guide" to inform on the criteria and standards to follow. Even though "Assignments" were preferred, more quizzes were being used so as to garner enough marks. These were then used to report on "Performance" or to check on one's "Performance" as the measure of success. If "Performance" is the major theme then the whole assessment process is planned with that in mind. This is seen in the "Course Objectives" that were partially linked to professional standards. They were based on lower-order levels of learning which dwell more on rote learning for the sake of grading or "Performance."

The issue of grading is provoked primarily by the demand to record the grades in the continuous assessment process. The students use these as a gauge to check their chances of completing a given course in a semester. The formative assessment process at Solusi University demands that students be given their grades at specified times. This according to Black (2013: 209) makes assessment to play only a marginal role in instruction because accountability is dominant. The net effect of this dominance is summarised in the word "Performance".

Therefore, if "Performance" is the major theme in formative assessment I contend that such a process is clogged with hiccups. These are in effect impediments to Self-Regulated Learning. As is stated in Section 3.3, paragraph 1, Self-Regulated Learning is the bigger picture of the current study. A little more can be said about the stance taken by the Theoretical Framework in Chapter Three with regards to "Performance." There is general consensus of most researched scholars that "Performance" poses certain challenges in formative assessment. Among these researchers are Black and William who have written many articles on formative assessment as testified by Bennet (2011: 12). In one of their articles Black and William, (2010: 82-83) bring forth the following issues about "Performance" as a problem poser in formative assessment, (I have infused my comments within each issue as it relates to the findings of the current study):

1. The First Issue is Effective Learning

The tests used by teachers encourage rote and superficial learning even when teachers say they want to develop understanding; many teachers seem unaware of the inconsistency.

Both data generation instruments, namely interviews and document analysis revealed that the range of questions in formative assessment was based on the lower-order levels of learning. They were mostly content-based recall questions supposedly intended to develop understanding. This compromises effective learning.

2. The Second Issue is Negative Impact

The giving of marks and the grading function are overemphasized, while the giving of useful advice and the learning function are underemphasized. Approaches are used in which pupils are compared with one another, the prime purpose of which seems to them to be competition rather than personal improvement; in consequence, assessment feedback teaches low-achieving pupils that they lack "ability," causing them to come to believe that they are not able to learn.

The findings of the current study show that "Performance" was overemphasized more than raising the standards of learning. The various assessment instruments were thus not fully utilised as learning tools. This gives the wrong motivation for learning. The students are in competition with each other for higher marks more than for self-regulated learning. Some of them end up cheating in the quizzes because these are not written under strict examination conditions. These issues are raised in the responses to question 1b in the Lecturers' Interview Guide.

3. The Third Issue is the Managerial Role of Assessments

Teachers' feedback to pupils seems to serve social and managerial functions, often at the expense of the learning function. The collection of marks to fill in records is given higher priority than the analysis of pupils' work to discern learning needs;

This was the case at Solusi University where summative assessment (assessment of learning) was given precedence over formative assessment (assessment for learning) thereby removing an interactive self-regulated learning environment. The Theoretical Framework resonates

with Constructivist Learning Theory which leads to Self-regulated learning. It recognises that the learners construct meaning out of an interactive learning environment that includes lecturers, peers and learning materials (see Section 3.8, paragraphs 1 and 2). Emphasising the managerial role of assessments only accommodates the third principle of the BEAR Assessment System instead of all the four of them (see Table 3.3).

5.5. SUMMARY

Finally, it is appropriate to recapitulate what has been covered in this chapter. It began with the presentation of data from the research findings. This was done according to the two data generation instruments namely, interviews and document analysis. The analysis of data was also done separately for the two data instruments. There were some dominant features which were observed so as to pave way for identifying the major issues to be discussed.

There were four conspicuous features in the data from the Focus Groups' interviews and the interviews with the individual lecturers. They were being discussed in order to address the first research question in the current study on how the formative assessment process was being characterised by the lecturers and students at Solusi University. These features are:

1. The formative assessment process placed a strong emphasis on performance.
2. Course objectives and content were considered to be important.
3. There was a paradox on which document was used to guide assessment.
4. Assignments were preferred but for somewhat different reasons between the lecturers and students.

Data from the Course Outline Analysis Schedule and from the Quizzes, Tests and Assignments Analysis Schedule was also considered. This was being used to address the first part of the second research question on how these documents portrayed formative assessment. Data from the Course Outline Analysis Schedule yielded the following outstanding features:

1. There was a strong emphasis on performance.
2. Assignments were given preference in relation to the academic dishonesty policy.
3. The course objectives were partially linked to professional standards.
4. The Course Outline was not effectively utilised as a learning tool.

On the other hand, data from the Quizzes, Tests and Assignments Analysis Schedule brought out two dominant features which are;

1. There were more quizzes than assignments that were given.
2. The learning objectives that were formulated and the range of questions given covered the lower-order levels of learning.

At the end of the day four major issues which are common to all data sources were presented and discussed. The issues were used to address the second part of the second research question on how the findings from the interviews and document analysis compared with each other. These are:

1. Performance
2. Assessment Guide
3. Assignments
4. Course Objectives.

Using the Theoretical Framework as a lens, the interpretation of data from all the sources together brought forth one major theme around which all the other themes revolve. The major theme that is sticking out is “Performance.” This is the obsession to award or receive a mark or score in the formative assessment process by lecturers and students respectively. Such an approach to have all themes revolve around “Performance” posed some challenges to the formative assessment process. These were identified and discussed on the basis of the theories that underpin this study in order to show their negative effects. It becomes imperative at this stage to explore the major contributions of the Theoretical Framework to formative assessment.

CHAPTER SIX

USING THE SELF-REGULATED LEARNING APPROACH TO ENHANCE FORMATIVE ASSESSMENT PRACTICES

6.1. INTRODUCTION

The main purpose of this study was partially to explore what the true worth or value of formative assessment was in the context of self-regulated learning. I specifically investigated the quality of formative assessment at Solusi University from the perspectives of both lecturers and students, and from studying key documents such as course outlines. I also sought to determine how formative assessment in the institution could be enhanced.

So far the findings of this report have shown how the quality of formative assessment is characterised by the lecturers and the students. The focus of this chapter is to discuss what I learn from the study regarding how formative assessment can be enhanced. But in order to do so I shall first summarise the research journey that I have travelled out of which came the key findings. It is from these findings that the major learnings will be gleaned. Subsequent to that in another section I will make the major recommendations on the basis of what I learn from this study and then the conclusions will be done in the last section.

6.2. A SUMMARY OF THE RESEARCH JOURNEY

As has been stated in the preceding section, part of my intention in this study was to explore what the true worth or value of formative assessment is in the context of self-regulated learning. This arose from the questions and observations that I had concerning assessment practices at Solusi University. In order to navigate through the process, it became necessary to do a literature review of the fundamental concepts related to assessment. More especially did it become absolutely essential to understand the characteristics as well as the relation between summative and formative assessment.

Summative assessment was identified as assessment of learning while formative assessment was named as assessment for learning. Formative assessment was noted for its ability to empower students as self-regulated learners. The three synonymous terms, that is to say metacognition, self-regulation and self-regulated learning took centre stage in the literature

review. I argued that self-regulation which leads to self-regulated learning is the main goal of assessment. The dominant role played by feedback in formative assessment for self-regulated learning was given much attention. Feedback was shown to be a two-way process of engagement where students are included as part of the learning and assessment that take place.

Furthermore, in order to cater for the presentation of a correct view of formative assessment practices at Solusi University, it was crucial to develop a theoretical framework premised on constructivist learning theory. Since self-regulated learning is constructivist in nature the theories that underpin this study were intended to reflect self-regulated learners who actively participate in their learning through social interaction. Three conceptual theories namely Self-Regulated Learning, the Bear Assessment System and Bloom's Taxonomy of Learning Objectives were selected for this purpose. Self-regulated learning formed the nucleus of this study because the other two theories served as stepping stones towards a self-regulated learning environment.

The blended nature of the theoretical framework enabled both teaching (the instructional process) and assessment (quizzes, tests and assignments) to be viewed from a different perspective. With respect to this four research instruments namely the Course Outline Analysis Schedule, the Lecturer's Interview Guide, the Focus Group Interview Guide for Students and the Quizzes, Tests and Assignments Analysis Schedule were designed. The Qualitative Research approach was adopted based on the questions that were being raised in this study.

The two-fold research question reads: 1). What is the true worth or value of formative assessment in the context of self-regulated learning? This has the following two sub-questions: a). How do lecturers and students in the various Departments characterise the quality of formative assessment practices? b). What do course outlines and related documents suggest regarding the quality of formative assessment and how does such evidence compare with staff and students' perspectives? 2). How can the self-regulated learning approach add value to formative assessment practices in this university?

Therefore, the Case Study research design was found suitable for purposes of generating data from a specific formative assessment environment namely Solusi University. Two sets of

interviews were conducted with a focus group for students and each one of the lecturers who taught the four selected courses respectively. Two data generation instruments namely the Focus Group Interview Guide for Students and the Lecturer's Interview Guide were used in the interviews. The resultant data was used to deal with the first part of the first research question regarding how lecturers and students characterised the quality of formative assessment.

The Focus Group Interview Guide for Students contained three sub-sections which were similar to the first three sub-sections in the Lecturer's Interview Guide. These are The Role of Assessment, Range of Assessment Methods and Frequency and Timing. The sub-section on the role of assessment in learning dealt with such issues as a description of the formative assessment approach, noting its advantages and disadvantages, the role of students and how this contributed to their learning. The responses from both the students and the lecturers indicated that the role of formative assessment in learning is to apprise the students of their performance (getting a good mark or grade). In addition to that the two groups of participants noted the course objectives as a very important section in the Course Outline.

The second sub-section on the Range of Assessment Methods probed the participants on the formative assessment methods which were being used, the preferences and justification for doing so. The key issue that emerged in the focus groups was that assignments were the preferred method. The justification for this was that assignments allowed them to collaborate, research and get more marks. Although the lecturers indicated that assignments were the preferred method of assessment, more quizzes were given to the students than assignments. This was confirmed in the third sub-section on the frequency and timing of the various forms of formative assessment. The justification for this was that these were easy to mark thus revealing an obsession for marks or scores more that metacognitive self-regulated learning.

The Lecturers' Interview Guide had a fourth sub-section which dealt with the relevance and effectiveness of formative assessment. This was mainly seen in the number of quizzes and tests given. These kept students occupied with academic work whilst they got rewarded with marks or grades. There was no indication of how assessment processes allowed for feedback geared at conjuring deep learning strategies in the students.

There were four conspicuous features in the data from the Focus Groups' interviews and the interviews with the individual lecturers. These features are:

1. The formative assessment process placed a strong emphasis on performance.
2. Course objectives and content were considered to be important.
3. There was a paradox on which document was being used to guide assessment.
4. Assignments were preferred but for somewhat different reasons between the lecturers and students.

The Course Outline Analysis Schedule and the Quizzes, Tests and Assignments Analysis Schedule yielded data to partially address the second part of the first research question. This intended to find out how the quality of formative assessment was being portrayed in the Course Outlines as well as in the quizzes, tests and assignments. The Course Outline Analysis Schedule was divided into three sections. These covered the purpose of a Course Outline as a contract, as a record of course work and a learning tool respectively.

It emerged from the analysis that the Course Outline was not effectively utilised as a learning tool. There was no due planning for self-regulated learning strategies such as specific study strategies, self-management skills and self-directed learning. The section on the Course Outline as a record of course work showed that the course objectives were partially linked to professional standards with an extensive description of assessment procedures. There was no inclusion of policies on revision and make ups in the section of the Course Outline as a contract. Instead grading and attendance policies were extensively included with no clear and accurate course calendar. Therefore, the data from Course Outlines was indicative of a low implementation of the self-regulated learning approach.

The data from the Course Outline Analysis Schedule yielded the following outstanding features:

1. There was a strong emphasis on performance.
2. Assignments were given preference.
3. The course objectives were partially linked to professional standards.
4. The Course Outline was not effectively utilised as a learning tool.

In the Quizzes, Tests and Assignments Analysis Schedule there was also evidence of less emphasis on the self-regulated learning approach. The ranges of questions in the quizzes, tests and assignments covered more lower-order levels of learning than higher-order levels of

learning. In addition to that the analysis revealed that there were more quizzes than assignments that were given to students.

Hence data from the Quizzes, Tests and Assignments Analysis Schedule brought out two dominant features which are:

1. There were more quizzes than assignments that were given.
2. The learning objectives that were formulated and the range of questions given covered the lower-order levels of learning.

There was some overlap and similarity in terms of emphasis in the issues that emerged from the analysis of data from the interviews as well as the documents being used for the formative assessment process at Solusi University. These were merged to become four major issues as follows:

1. Performance- the evidences from the interviews as well as the document analysis indicated that the formative assessment process placed a strong emphasis on students' academic performance.
2. Assessment Guide- the evidences from the interviews as well as the document analysis suggested that there is no proper document that is being used to guide assessment practice in the university.
3. Assignments- the students and lecturers equally indicated preference for assignments as the best method of assessing students but for different reasons.
4. Course Objectives-these were considered to be the most important part of any course. Nevertheless, the evidences from the interviews as well as the document analysis indicated that these were not properly formulated.

These were discussed in order to address the second element in the second part of the first research question. This sought to explore how the evidence from the course outlines and related documents compared with staff and students' perspectives. It emerged from the discussion that "Performance" is the major theme in the formative assessment process at Solusi University. This is the overemphasis that is placed on the giving of marks and grading of students by lecturers. The implications of such a scenario were identified and discussed in order to show the shortfalls that emanate in the formative assessment process. These included encouraging rote and superficial learning, undermining the giving of useful advice and the learning function as well as failure to analyse students' work to discern learning needs. There

are some major lessons that may be drawn from the findings which eventually substantiate the need for self-regulated learning approach to formative assessment practices.

6.3. LEARNING FROM THE FINDINGS

So far in this report, the two parts of the first research question have been addressed. The first part of the first research question inquired about how the formative assessment process at Solusi University was characterised by the students and lecturers. The second part of the first research question sought to find out how course outlines and related documents suggested regarding the quality of formative assessment and how this compared with the perspectives of students and lecturers. This chapter addresses the second research question which reads, "How can the self-regulated learning approach add value to formative assessment practices in this university?"

The last research question is the over-arching matter in this study because it seeks to determine how formative assessment in the institution could be enhanced. In order to deal with this the answers to the first research question will be scrutinised using the theoretical framework as the lens. This is made up of the three theories that underpin this study. These are Self-Regulated Learning, the BEAR Assessment System and Bloom's Taxonomy of Learning Objectives respectively.

The four key issues that emerged from the findings, namely performance, assessment guide, assignments and course objectives are in a real sense correlates of Self-Regulated learning. They can be used concurrently to enhance self-regulated learning as shown in the next section.

6.3.1. CORRELATES OF SELF-REGULATED LEARNING

There is a way in which the issues that emerged from the findings can complement each other to result in self-Regulated learning. These occurred because formative assessment had a context in the form of the various formative assessment activities that took place during learning. Nevertheless, the self-regulated learning approach recognises that students should be active participants in the learning process (see Chapter Three, Section 3.1). Yin and Buck, (2014) argue that formative assessment can be seen as the construction of shared and

negotiated meanings between teacher and student. This element was found to be missing in the formative assessment process at Solusi University. However, the four major issues namely Performance, Assessment Guide, Assignments and Course Objectives, can still be transformed in their quality. Instead of them being liabilities that inhibit self-regulated learning they can be turned into assets that enhance it.

Each one of the major issues will be discussed in order to show its competitive advantage to reinforce self-regulated learning. As such these issues will be rephrased to show their innovation. This is intended to reposition them so as to explicate the need for a self-regulated learning approach to formative assessment practices at Solusi University. Since these issues are correlated there will be an overlap of one or more issue over the other one in the discussion.

6.3.2. ENHANCED PERFORMANCE

One of the issues that emerged from the findings is "Performance," whereby the formative assessment process over- emphasised on the attainment of grades more than the actual learning function. Lecturers opted for easier methods of formative assessment such as quizzes so as to quickly award marks or scores to students. The students were also comfortable with assessment methods which allowed them to get the maximum marks or scores needed. Nevertheless, not much emphasis was placed on the use of formative assessment to enhance self-regulated learning.

The self-regulated learning approach is not limited to marks and scores. Cassidy (2011: 1990) cites Zimmerman (2001) to posit that self-regulated learning is considered to be separate from mental ability or academic performance skill. Thus, I coined the term "Enhanced Performance" from the assumption that the marks or scores from formative assessment lead to self-regulated learning. This presupposes that the students are motivated to do their best not just to reproduce knowledge so as to gain the marks or scores as was seen from the findings of this study. An over-emphasis on marks or scores may lure them to settle for mediocrity in order to satisfy grade requirements. Instead the formative assessment process at Solusi University should be premised on deep learning approaches which motivate the students to construct knowledge as they give their best performance.

If the self-regulated learning approach is to take centre-stage, formative assessment ought to be strategically designed for this. The findings of the research showed a yawning gap between the objectives in the Course Outlines and the assessments that were given. The objectives that were formulated did not fully inform the quizzes, tests and assignments that were given. This negates a relevant process as attested to by the third principle in the BEAR Assessment System, "Management by Teachers." It shows that information from the assessment tasks must be couched in terms that are directly related to the instructional goals (see Table 3.3). This characterises a formative assessment process in which opportunities are designed to collect quality evidence that informs teaching and improves learning, Wylie et al. (2012:27). The 'Evidence' is in the form of both instructional and assessment goals which should bridge the gap between instruction and assessment. If the evidence is properly utilised, it should be used to inform teaching and improve learning.

In addition to this the findings of this study show that performance was measured against poorly designed objectives which were based on lower-order levels of learning. Ideally the evidence to be collected should be of a quality that is pegged on credible standards and criteria (Armstrong et al., 2015: 1). In view of this the quality of the evidence should be determined by the instructional goals which will have been designed according to both lower-order and higher-order levels of learning (see the hierarchy of Bloom's Taxonomy of Learning Objectives in Table 3.5). It is also assumed that the three phases of the Self-Regulated Learning Theory which are cyclic in nature would be taking place (Table 3.2). The students will either have been or are being prepared for a variety of learning tasks, not just quizzes. In this case there is on-going dialogue between the lecturer and the students. They are monitoring their learning and also doing introspection. In every case the evidence should be useful for the lecturer in terms of assessment design and teaching strategy. It is also useful to the students in terms of assessment for learning and self-regulated learning.

The over-emphasis on performance in the findings may also be an indicator that the marks or scores do not have any other use than the rank ordering of students for the purposes of grading, (Wilson and Scalise, 2006). Nevertheless, enhanced performance can result if formative assessment is deliberately structured to give quality evidence that informs teaching and improves learning. For this to be realised the following steps as proposed by Wylie et al. (2012: 27) could be adopted in resonance with the theoretical framework as explained in my comments:

The first step is formative assessment at the launch of learning. This is the information gathering and preparation stage and it corresponds to the forethought phase of the Self-Regulated Learning Model (Table 3.2). Since it proposes formal and informal pre-assessments it accommodates this phase by way of motivational beliefs and task analysis processes which take place before actual learning or problem solving. It also conforms to the first principle of the BEAR Assessment System which is "A Developmental Perspective." This acknowledges that as learning situations vary, their goals and philosophical underpinnings take different forms (Table 3.3). It facilitates the formulation of criteria or goals for learning and not just assessment for grading purposes.

The second step is formative assessment while guiding students through learning experiences. Lecturers are able to align formative assessments with learning expectations so as to inform their teaching and assessment. This is in line with the second principle of the BEAR Assessment System to argue for "A Match between Instruction and Assessment," (see Section 3.5). Just as instruction may be individualised, it proposes for the same to be done with formative assessments to meet the needs of students. This is a self-regulated learning approach which is constructivist in nature.

The third step is formative assessment while checking for understanding. This allows for concept formation to occur instead of rote learning. A variety of assessment methods may be used to include the summative use of formative assessment are proposed. The variety of assessment strategies is a reflection of the cyclic nature of the Self-Regulated Learning Model. In this case the three factors namely forethought, performance and self-reflection are covered, (see Table 3.2).

The fourth step is assessment quality. This calls for assessments to be appropriate for the intended purpose. Assessment quality is closely tied to course objectives. Such is the whole perspective of the Theoretical Framework. Then there is the notion that lecturers should develop and evaluate assessments collaboratively. This requires that a working framework is in place to guide assessment practice. Ultimately formative assessment quality would be comparable across departments.

Performance should ideally refer to improved student success if formative assessment evidence is used to adapt teaching and learning to meet student needs. It should be a given

that there is on-going dialogue between the lecturer and the students throughout the whole learning experience.

6.3.3. INFORMATIVE ASSESSMENT GUIDE

The second issue that emerged from the findings was that there was no document specifically designed to guide formative assessment practice. With such a scenario both the lecturers and the students are likely to operate with a blurred image of formative assessment. For Solusi University this situation may be compounded by the absence of a teaching and learning centre for lecturers. Padro (2010:3) argues that the centres of teaching and learning (CoTLs) promote quality teaching by encouraging and providing capacity for academic staff to improve their instructional skills. As such an informative assessment guide may be a good starting point in terms of guiding the formative assessment process.

The findings of the current study indicate that the lack of an assessment guide posed challenges to both the lecturers and the students. These come especially due to insufficient information in terms of how to plan for and administer the various methods of assessing students. The logical consequence of this could be the following as pointed out by Black (2013: 209) followed by my comments on each:

Firstly, there would be confusion about the relationship between the formative and the summative tasks. When the roles of formative and summative assessment are not clear summative assessment goals will tend to feature much in formative assessment tasks. Summative assessment is intended to judge student performance at the end of a learning period. Formative assessment on the other hand is intended to monitor learning during the process of the learning experience.

In the case of Solusi University there ought to be a clear and distinct understanding of the dual use of formative assessment namely, (1) the marks and scores from the quizzes, tests and assignments should be used for the summative purpose of contributing to the final semester's grade; (2) the same marks ought to be used as evidence that informs teaching and improves learning, (Wylie et.al. 2012:27). When this happens it would also imply that the students are not just "test experts" but active learners in the formative assessment process.

In the Theoretical Framework the BEAR assessment system addresses this confusion regarding formative and summative assessments. The second principle in the BEAR

assessment system suggests that assessment must be in step with instruction. These two must also accomplish the same aims of learning, (see Chapter Three, Table 3.3). In the case of Solusi University, the assessment tasks were seemingly used solely to grade students without being used as part of the instructional process.

Secondly, there would be a misunderstanding of the criteria for the quality of any assessment. When there is such a misunderstanding the value of formative assessment is diminished. The findings of this study revealed that the course objectives as well as the range of questions addressed the lower-order levels of learning categories of objectives in Bloom's Taxonomy of Learning Objectives. The Theoretical Framework (see Chapter Three, Sections 3.3-3.5), contains suggestions on the criteria that may be used for judging the quality of formative assessment. This includes incorporating planning strategies that include well formulated objectives and matching instruction (Bloom's Taxonomy of Learning Objectives, The BEAR assessment system). These must be planned in such a way that students are active participants who can self-regulate the learning process in the form of instruction, assessment and most importantly, feedback (The BEAR assessment system, Self-Regulated learning).

Feedback evokes self-judgment on the part of the students thus fulfilling the self-reflection phase of self-regulated learning. It also raises the important attributes of deep learning which are premised on the constructivist learning theory (see Chapter Three, Table 3.7).

Thirdly, there would be a mistrust of teachers—justified in part by the profession's poor grasp of assessment principles. The evidence from the findings revealed a poor grasp of assessment principles in the way formative assessment was planned and implemented. This point authenticates the need for an assessment guide to unpack some of the principles of assessment. It may serve as a reminder to some of the lecturers while to others it may even be a training module on the principles of assessment. The Theoretical Framework may be used as a template with which to prepare such a guide. In addition to that more information having to do with pedagogy and instruction may need to be included. When such is the case then the self-regulated learning approach will be adopted without any mistrust by the concerned parties.

I consider an informative assessment guide as a credible source of information in terms of theory and practice. Student involvement would be one of the areas to be addressed. In another characteristic of formative assessment, Wylie et al. (2012: 27) argue that students

should be engaged in the assessment process and, to the extent possible, in planning their own next steps for learning. In the case of Solusi University, the students were mere recipients of quizzes and tests without any meaningful dialogue for instructional purposes.

In this characteristic by Wylie et al. (2012: 27) the role of students in the formative assessment process is given due consideration in line with the blended nature of the theoretical framework as will be outlined based on three components as follows:

The first component is Student Self-Assessment- This assumes that students have a variety of self-evaluation techniques. These are indications that the lecturer must have involved the students as from the planning stage. As such they are aware of the learning outcomes and the success criteria for the given course/module. Student self-assessment is in effect student self-regulation which is accommodated in the Self-Regulated Learning Model (see Chapter Three, Table 3.2).

The second component is Student Peer Assessment- The insinuations by students in the current study showed that this element was not given much priority in the formative assessment process. It presupposes that the learners are active participants in their learning (constructivism), who feel a positive regard for the program material (deep learning approach) and therefore can control, monitor, and regulate their cognition (self-regulated learning); (see Chapter Three, Table 3.7). Another example is in reference to the BEAR Assessment System (see Chapter Three, Table 3.3), whereby formative assessment enables context and content dependent knowledge construction. It also supports collaborative construction of knowledge through social negotiation.

The third component is Follow Through- Students can only follow if they have been given the direction to go. This is in the form of intended learning outcomes (Bloom's Taxonomy of Learning Objectives). It is done within the context of self-regulated learning (Self-Regulated Learning Model). Then assessment and instruction are designed along the same goals (Bloom's Taxonomy of Learning Objectives, The BEAR Assessment System). Thus this component insists that students are part of conversations about their own learning. Once this is so then self-regulated learning is taking place.

In the findings of the research such information was not readily available at Solusi University. There was no proper documentation of teaching strategies and guidelines and all

the participants did not disclose any such evidence. The logical consequence of this would be inferior approaches to formative assessment in which self-regulated learning suffers.

6.3.4. STRATEGIC ASSIGNMENTS

Another issue that emerged from the research findings was that there were fewer assignments than quizzes across the board that were used for assessment purposes (see section 5.2.3). The initial indication by the lecturers and students was that they preferred assignments over other methods of formative assessment. Nevertheless, students were given assessments that gave faster feedback in the form of grades. On the other hand, the assignments that were given to students were based on the lower-order levels of learning objectives. These are not good enough to facilitate self-regulated learning. This in and of itself undermines the quality of formative assessment in its entirety. The resultant feedback would also be of an inferior quality that would not meaningfully engage the students.

As a matter of fact, the feedback on assignments was simply a disclosure of marks or scores. This was evidenced by the lecturers' preferences for assessment methods that were easy to mark without any indication of their contribution to learning. Another characteristic of formative assessment talks about providing feedback that reflects the lecturers' understanding of contextual factors as well as learning expectations, Wylie et al. (2012:27). This would not be the case if the objectives are poorly formulated or targeting lower-order levels of learning. Formulating specific learning objectives and skills can be enhanced by knowledge of Bloom's Taxonomy of Learning Objectives as outlined in Tables 3.5 and 3.6. Formative feedback is aligned to the fourth principle, "High Quality Evidence" of the BEAR Assessment System (Table 3.3). Even though feedback comes after an assessment exercise this kind is not limited to grades but is intended to improve learning.

Feedback is intended to be appropriate and useful for students to improve their learning. This is the whole essence of the cyclic nature of the Self-Regulated Learning Model (Table 3.3). This shows that the students will go through forethought (to prepare for educational endeavours such as to revise and edit their work). They will go through performance to monitor their learning. They will also go through self-reflection to take note of their strengths and weaknesses.

6.3.5. WELL-FORMULATED COURSE OBJECTIVES

The fourth and final issue that emerged from the findings was that the course objectives were found to be only partially linked to professional standards (gauged against Bloom's taxonomy of learning objectives). All the Course Outlines that were examined had a semblance of not so well-formulated objectives because they targeted lower-order levels of learning. This in turn affected the questions in the quizzes, tests and assignments most of which tended to be based on the lower-order levels of learning. If the hierarchy in Bloom's taxonomy of learning objectives is adopted there is every possibility and opportunity for the course objectives to be designed according to professional standards. The course objectives are a correlate of self-regulated learning because of their contribution to the planning of instruction and assessment.

There was no single document to show that objective formulation was given due attention in the formative assessment process at Solusi University. A self-regulated learning approach to formative assessment is characterised by well-formulated course objectives. One of the best practices is to formulate these according to Bloom's Taxonomy of Learning Objectives (see Section 3.5). According to Wylie et al. (2012:27), another characteristic of formative assessment reads, "Intended outcomes of learning and assessment are clearly stated and shared with students." These include learning expectations (what students will learn in a lesson) and success criteria (expectations for performance). This accommodates planning for both instruction and assessment.

According to the findings there was no evidence of any opportunity to share the stated objectives in the formative assessment process at Solusi University. The objectives should be stated and shared in terms of their hierarchy (see Table 3.5). The idea of sharing the intended outcomes of learning and assessment is given in line with the self-regulated learning approach. This requires knowledge and understanding of the three theories that underpin this study namely Self-Regulated Learning, the BEAR Assessment System and Bloom's taxonomy of learning objectives.

The Self-Regulated Learning Model shows that students are prepared for educational activities in the forethought phase (see Table 3. 2). The forethought phase of the self-regulated model coincides with the first two principles of the BEAR Assessment (see Table 3.3). The first principle is "A Developmental Perspective," in which the lecturer decides on the criteria or goals for development, what to assess and how to assess it.

The second principle advocates for "A Match between Instruction and Assessment." It calls for these two to be designed to accomplish the same goals of learning. It follows that since assessment is for learning the intended outcomes should also be for both learning and assessment. These should be clearly stated and shared with students. This is what the Deep Learning Approach (see Table 3.7), the Constructive Alignment Theory (CA) and the'3P' (presage, process and product) learning and teaching model advocate (see Table 3.8). In the same vein Wylie et al. (2012:27) argues that there should be a shared understanding of quality work and performance guidelines between the students and their lecturers. This should serve as a deterrent against a lop-sided formative assessment process in which only performance in the form of marks and scores is emphasised more than the overall learning function.

In this sub-section I have presented arguments and reasons to show how the self-regulated learning approach can add value to the formative assessment practices at Solusi University. The issues that emerged from the study namely performance, assessment guide, assignments and course objectives were found to be convertible in their quality. This was on the basis of the theories that underpin this study namely, Self-Regulated Learning, the BEAR Assessment System and Bloom's Taxonomy of Learning Objectives respectively. These make up the Theoretical Framework which is a self-regulated learning concept in which students are also the major stake-holders. I have argued that formative assessment can undergo continuous improvement if it is informed by the Theoretical Framework. It allows for transparency and collaboration in the formative assessment process. This should result in students being clear about their learning expectations and their success criteria. With that in place strategic assignments would be given to result in enhanced performance.

6.4. RECOMMENDATIONS

The research findings have brought out some major issues that have far-reaching implications on formative assessment. Based on that, in this sub-section I make recommendations to improve formative assessment practice at Solusi University. Over and above that I also make some recommendations for further research vis-à-vis the findings of the current study.

6.4.1. RECOMMENDATIONS TO IMPROVE FORMATIVE ASSESSMENT PRACTICE

Given the outcome of this study that the formative assessment practices at Solusi University overemphasise the giving of marks and grading of students by lecturers while undermining self-regulated learning I recommend that:

1. The Solusi University administration takes it as a matter of priority to establish a Centre of Teaching and Learning (CoTL) at the university. According to Padro (2010: 3) the core functions of CoTLs include:
    i. Providing feedback to academic staff on their teaching.
    ii. Helping them determine changes to their teaching strategies.
    iii. Affording opportunities for implementing changes along with supporting materials.
    iv. Assessing the effect that adopted changes have on the degree of success students achieve.

All the lecturers who were interviewed in the current study have not been exposed to a centre of teaching and learning at any university let alone Solusi University. Only one of them is a trained high school teacher. This is almost representative of the rest of the faculty members in the university with a few who are trained to teach either in high school or primary school or both. The proposed CoTL would serve as both a training ground and a provider of refresher courses in pedagogy to teaching faculty. It would also serve as a unifier in terms of comparability of the self-regulated learning approach to formative assessment.

2. Since the CoTL would be a new innovation in the university there is most likely to be a massive training program probably beginning with those who may be the facilitators and also initiators of the programme. This would entail interfacing with other universities where such centres are in full operation. As such I wish to recommend that a line item be included in the university budget to fund this envisaged major project.

3. The proposed CoTL prepares as a matter of priority a model for formative assessment based on the self-regulated learning approach. It is this model that

would serve as an informative guide to formative assessment practices in the university.

6.4.2. RECOMMENDATIONS FOR FURTHER STUDY

The scope of the current study could not accommodate all possible areas of interest. The findings of the research have shown that formative assessment in the university has a strong link to the final grade. In view of this I wish to recommend that a longitudinal study be carried out to determine the predictive validity of the continuous assessment marks on the final Grade Point Average (GPA) of a student upon completion of studies. Such a study should then compare this with the predictive validity of the final examination marks on the final GPA of a student for the same period. This would be done for the three years of full time study with the attachment grade (third year) being tallied with the final year grades.

6.5. CONCLUDING REMARKS

I have learnt a number of lessons in this study. One of them is that it is important to continually take an introspection of whatever programme that you may be running. It has been also clearly demonstrated in this study that the best source of information is with the people on the ground. I also discovered that a subject such as the one being addressed by the current study requires that the researcher be also conversant with the situation on the ground. The dominant features and the major issues to be discussed and understood come from the data that has been generated. The use of themes and sub-themes is a plausible exercise in a Case Study because one continues making reference to the original source of information. There is need also to get rid of all biases in the process. It then brought forth an important lesson that it requires a theoretical framework to make any valid observations of an operational process such as formative assessment.

In conclusion I would like to reiterate the point that the self-regulated learning approach has the potential to transform formative assessment practices at Solusi University. Hudesman et al (2013:2) argue that effective formative assessment is an on-going instructional process that systematically incorporates assessment, as opposed to calling for a particular kind of assessment instrument or test. There should be a distinction made between formative assessment (in class assessment for learning) and summative assessment (final examination of learning).

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APPENDICES

Appendix 1-Focus Group Interview Guide for Students

A. PROFILE

- **Faculty……**
- **Department……**
- **Course Offering…….**

B. QUESTIONS

1. Role of Assessment in Learning

a. How would you describe the formative assessment approach being used in the university?
b. Are there any advantages or disadvantages to this approach?
c. Do you know of any document that informs you about assessment practice in the university?
d. Which is the most important section of the course outline? Why is it so?
e. What is your role as a student in the formative assessment process?
f. How does it contribute to your learning?

2. Range of Assessment Methods

a. What are the different methods that are used to assess you?
b. Which one do you prefer the most?
c. Give reasons for your preference.

3. Frequency and Timing

a. How often are you given each one of these assessments?
b. Are you given notice of upcoming quizzes or tests if any?
c. When is feedback provided?

Appendix 2- The Lecturer's Interview Guide

A. PROFILE

- **Faculty……**
- **Department……**
- **Course Offering…….**

B. QUESTIONS

1. **Role of Assessment in Learning**
   a. How would you describe the formative assessment approach being used in the university?
   b. Are there any advantages or disadvantages to this approach?
   c. Do you know of any document that informs you about assessment practice in the university?
   d. Which is the most important section of the course outline? Why is it so?
   e. What is the role of a student in the formative assessment process?
   f. How does this contribute to learning?

2. **Range of Assessment Methods**

a. What are the different methods that are used to assess your students?
b. What are the justifications for each method?
c. Which one do you prefer the most?
d. Give reasons for your preference.

3. **Frequency and Timing**
   a. How often do you give each one of these forms of assessment?
   b. Do you give your students notice of upcoming quizzes or tests? State your reasons for doing so.
   c. When is feedback provided?
   d. How do you use it to contribute to learning?

4. **Relevance**
   a. How do you use formative assessment to inform students of course objectives?
   b. How do you use formative assessment to stimulate recall of prior knowledge?
   c. Do you face any difficulties with the formative assessment approach being used in the university?
   d. In your opinion, how effective is the formative assessment process at Solusi University?

Appendix 3- The Course Outline Analysis Schedule

Faculty……

Course (Module)……

Item	Not Included	Partially Included	Extensively Included
Course Outline as a Contract			
Clear and accurate course calendar			
Grading policies: components and weights			
Attendance policy			
Make-up policy			
Academic dishonesty policy			
Policies on incompletes and revisions			
Course Outline as a Permanent Record			
Required texts and other materials			
Course objectives, linked to professional standards			
Description of course content			
Description of assessment procedures			
Course Outline as a Learning Tool			
Planning and self-management skills			
Time to spend outside of class			
Specific study strategies			
Tips on how to do well on assessments			
Availability of instructor			

Campus resources for assistance			
Relevance and importance of the course			

Items adapted from Jay Parkes & Mary B. Harris (2002). "The Purposes of a Syllabus," *College Teaching*, 50:2, 55-61, DOI: 10.1080/87567550209595875

Appendix 4- The Quizzes, Tests and Assignments Analysis Schedule

Course Objectives	**Quiz 1**	**Quiz 2**	**Quiz 3**	**Test 1**	**Test 2**	**Mid-Semester Examination**	**Assignment 1**	**Assignment 2**
1.								
2.								
3.								
4.								
5.								

NB: Checklist of stated objectives against each quiz, test or assignment given

Appendix 5- Request For Permission To Study

Request for permission to conduct research at Solusi University

1 March, 2015

University of South Africa

Student No: 49119036

Title: Towards a Comprehensive Model of Formative Assessment: Using Formative Assessment to Enhance Self-Regulated Learning.

Dr. Sophie Masuku

Solusi University

Office of Research, Information and Publications

Cell: +263 778940148

E-mail: smasuku@solusi.ac.zw

Dear Dr. Sophie Masuku

I, Christopher Newa Thebe am doing research in the Department of Educational Leadership and Management towards a Doctor of Education (DEd) degree at the University of South Africa. My dissertation topic is: ***Towards a Comprehensive Model of Formative Assessment: Using Formative Assessment to Enhance Self-Regulated Learning.*** My supervisor is Professor Vitallis Chikoko from the University of Kwazulu-Natal and his contact number is +27 31 260 2639.

The aim of the study is find out the true worth or value of formative assessment in the context of self-regulated learning. This is done in attempt to enhance self-regulation and self-regulated learning by developing a model for formative assessment.

May I be granted permission to conduct this study here at Solusi University. The study will entail conducting interviews with selected second year students and lecturers in at least one core course (module) per faculty in the first semester of 2015. It will also involve an analysis of the course outlines as well as the tests, quizzes and assignments in the respective core courses (modules).

All data gathered will be held in confidence and be used strictly for research purposes. Your favourable consideration in this regard would be appreciated.

Yours faithfully

Christopher N. Thebe

Cell: +263-712315938

E-mail: thebecn@solusi.ac.zw;thebe.chris@gmail.com

Appendix 6- Letter Granting Permission To Study

SOLUSI UNIVERSITY

A CHARTERED SEVENTH-DAY ADVENTIST INSTITUTION OF HIGHER LEARNING

P.O. SOLUSI
BULAWAYO
ZIMBABWE

Telephone:
Within Zimbabwe 09-885457/63345
Outside Zimbabwe (263)-9-885457/885484
Telegrams: "SOLUSI"

Fax Numbers:
Within Zimbabwe 09-885982
Outside Zimbabwe
(24 hour delay)

APPENDIX C – PERMISSION TO CONDUCT RESEARCH

6 March 2015

Pastor C N Thebe
Solusi University
P O Solusi
Bulawayo, Zimbabwe

Dear Sir,

Re: Permission to Conduct Research

The Faculty Research Committee met to consider your request to conduct research at Solusi University towards a Doctor of Education (D.Ed.) – Educational Management degree with the University of South Africa. Your request was granted and it is noted that the title of your Research is **"Towards a Comprehensive Model of Formative Assessment: Using Formative Assessment to Enhance Self-Regulated Learning."**

It is also noted that you will draw your sample from the different faculties and the following will be used to collect data:

i) The Course Outline Analysis Schedule
ii) The Lecturer's Interview Guide
iii) The Focus Group Interview Schedule
iv) The Quizzes, Tests and Assignments Analysis Schedule

We wish you God's blessings as you strive to finish your doctoral programme.

Sincerely,

SOLUSI UNIVERSITY
ZIMBABWE
06 MAR 2015
RESEARCH DIRECTOR

Sophie Masuku, PhD
Office of Research, Information and Publications
smasuku@solusi.ac.zw
Cell: 0778940148

Appendix 7- UNISA Ethical Clearance Certificate

UNISA university of south africa

COLLEGE OF EDUCATION RESEARCH ETHICS REVIEW COMMITTEE

13 May 2015

Ref #**2015/05/13/49119036/03/MC**
Student#: Mr CN Thebe
Student Number#:49119036

Dear Mr Thebe

Decision: Ethics Approval

Researcher: Mr CN Thebe
Tel: +263 9 882996
Cell phone: +263 712315938
Thebe.chris@gmail.com

Supervisor: Prof V Chikoko
Department of Educational Leadership and Management
College of Education
Tel: +27 031 260 2693
chikokov@ukzn.ac.za

Proposal: Towards a comprehensive model of formative assessment: Using formative assessment to enhance self-regulated learning

Qualification: D Ed in Educational Leadership and Management

Thank you for the application for research ethics clearance by the College of Education Research Ethics Review Committee for the above mentioned research. Final approval is granted for two years

For full approval: *The application was reviewed in compliance with the Unisa Policy on Research Ethics by the College of Education Research Ethics Committee on 13 May 2015*
The proposed research may now commence with the proviso that:

1) *The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*
2) *Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the College of Education Ethics Review Committee. An amended application could be requested if there are substantial changes from the*

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
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existing proposal, especially if those changes affect any of the study-related risks for the research participants.

3) *The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.*

Note:
The reference number [top right corner of this communiqué] should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the College of Education RERC.

Kind regards,

Kind regards,

Dr M Claassens
CHAIRPERSON: CEDU RERC
mcdtc@netactive.co.za

Prof VI McKay
ACTING EXECUTIVE DEAN

University of South Africa
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Appendix 8- Consent Letter for Lecturers

8 March 2015

University of South Africa

Student No: 49119036

Professor/Dr./Pastor/Mr./Mrs.----------

Solusi University

Faculty of----------

Department of----------

Dear colleague

You are invited to participate in a research study that has been approved by the University of South Africa. Selection of participants was done using purposive sampling in that all the one hundred and seventy-five (175) second year students in 2015 were selected. The lecturers for at least one core course (module) and the students in that core course (module) were selected based on the first semester course offerings for 2015. All in all a sample of 98 (ninety-eight) students and 4 (four) lecturers taking each of the four courses (modules)) is envisaged.

I am currently studying towards my Doctor of Education –Educational Management degree. My dissertation topic is: ***Towards a Comprehensive Model of Formative Assessment: Using Formative Assessment to Enhance Self-Regulated Learning.*** The name of my supervisor is Professor Vitallis Chikoko. His contact number is **+27 031 260 2639** and his email address is **chikokov@ukzn.ac.za**

The Faculty Research Committee met on 6 March 2015 and gave me permission to conduct the research and conduct interviews with second year students and lecturers in 2015. The

contact person with regards to any research related question is Dr. Sophie Masuku, Cell number +263 778940148 and E-mail: smasuku@solusi.ac.zw

I need to conduct two sets of interviews with students in the core courses (modules) that you are teaching in the first semester of 2015. I also need to examine course outlines, tests and quizzes for the first semester to be able to complete this research study. This study seeks to find out the true worth or value of formative assessment in the context of self-regulated learning at Solusi University.

Your role in the study will consist of the following:

- Signing this letter to give informed consent.
- Availing the following documents for the first semester 2015:
  - Course outline.
  - A copy of the quizzes, tests and assignments.
- Participating in an interview that I will conduct.
- Allowing me to access your students.
- Providing any other information pertinent to the research topic.
- Meeting to discuss the research study and to establish a relationship.
- You will be free to ask any relevant questions.

It should take a day for you to avail to me the stated documents and to participate in the interview that I will conduct. Nevertheless the total period of participation may extend up to six months while the information will be applied and analysed accordingly. Data collected during this study will be retained on a password protected computer for 12 months in my locked office.

There will be three other lecturers who are going to participate in this study. In addition to that there will be approximately ninety-eight (98) students who will constitute the sample of the second year students in the university. Kindly take note that privacy, anonymity and confidentiality will be maintained throughout the study. Your participation is purely voluntary and you may withdraw without penalty if you so wish.

The University of South Africa will guide and give ethical approval for this study. All information will be solely used for academic research, and will be treated anonymously and privately. There will be no benefits and no compensation or reimbursements since there are no expenses involved on your part. No risks or discomforts to any participant are envisaged in this study.

Please feel free to contact me by email at thebecn@solusi.ac.zw; thebe.chris@gmail.com or Cell: +263 712315938 if you are interested to participate in this research project or need to discuss this project further.

I hope you will be interested to participate in this important research study. If you accept my invitation to participate, I will request you to sign the consent form which follows on page 3.

Yours sincerely

Christopher N. Thebe

Appendix 9- Consent Letter for Students

8 March 2015

University of South Africa

Student No: 49119036

Mr./Mrs./Ms.----------

Faculty of----------

Department of----------

Dear student

You are invited to participate in a research study that has been approved by University of South Africa. Selection of participants was done using purposive sampling in that all the one hundred and seventy-five (175) second year students in 2015 were selected. The lecturers for at least one core course (module) and the students in that core course (module) were selected based on the first semester course offerings for 2015. All in all a sample of 98 (ninety-eight) students and 4 (four) lecturers taking each of the four courses (modules)) is envisaged.

I am currently studying towards my Doctor of Education –Educational Management degree. My dissertation topic is: ***Towards a Comprehensive Model of Formative Assessment: Using Formative Assessment to Enhance Self-Regulated Learning.*** The name of my supervisor is Professor Vitallis Chikoko. His contact number is **+27 031 260 2639** and his email address is **chikokov@ukzn.ac.za**

The Faculty Research Committee met on 6 March 2015 and gave me permission to conduct the research and conduct interviews with second year students and lecturers in 2015. The

contact person with regards to any research related question is Dr. Sophie Masuku, Cell number +263 778940148 and E-mail: smasuku@solusi.ac.zw

I need to conduct two sets of interviews with students and lecturers in the core course (module) that you are taking in the first semester of 2015. I also need to examine course outlines, tests and quizzes for the first semester to be able to complete this research study. This study seeks to find out the true worth or value of formative assessment in the context of self-regulated learning at Solusi University.

Your role in the study will consist of the following:

- Signing this letter to give informed consent.
- Participating in two interviews that I will conduct.
- Meeting to discuss the research study and to establish a relationship.
- You will be free to ask any questions relevant to the study.

It should take a day for you to participate in each of the interviews. Nevertheless the total period of participation may extend up to six months while the information will be applied and analysed accordingly.

There will be four lecturers who are going to participate in this study. In addition to that there will be approximately ninety-eight (98) students who will constitute the sample of the one hundred and seventy-five (175) second year students in the university. Kindly take note that privacy, anonymity and confidentiality will be maintained throughout the study. Your participation is purely voluntary and you may withdraw without penalty if you so wish.

The University of South Africa will guide and give ethical approval for this study. All information will be solely used for academic research, and will be treated anonymously and privately. There will be no benefits and no compensation or reimbursements since there are

no expenses involved on your part. No risks or discomforts to any participant are envisaged in this study.

Please feel free to contact me by email at thebecn@solusi.ac.zw; thebe.chris@gmail.com if you are interested to participate in this research project or need to discuss this project further.

I hope you will be interested to participate in this important research study. If you accept my invitation to participate, I will request you to sign the consent form which follows on page 3.

Yours sincerely

Christopher N. Thebe

Appendix 10- Informed Consent Form for Lecturers

I have read the information presented in the information letter about the study by Christopher Newa Thebe with the title "***Towards a Comprehensive Model of Formative Assessment: Using Formative Assessment to Enhance Self-Regulated Learning."*** I have had the opportunity to ask any questions related to this study, to

receive satisfactory answers to my questions, and add any additional details I wanted. I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses. I am also aware that excerpts from the interview may be included in publications to come from this research, with the understanding that the quotations will be anonymous. I was informed that I may withdraw my consent at any time without penalty by advising the researcher. With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

Participant's Name (Please print):

Participant Signature:

Researcher Name: (Please print)

Researcher Signature:

Date:

Appendix 11- Informed Consent Form for Students

I have read the information presented in the information letter about the study by Christopher Newa Thebe with the title "***Towards a Comprehensive Model of Formative Assessment: Using Formative Assessment to Enhance Self-Regulated Learning."***. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and add any additional details I wanted. I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses. I am also aware that excerpts from the interview may be included in publications to come from this research, with the understanding that the quotations will be anonymous. I was informed that I may withdraw my consent at any time without penalty by advising the researcher. With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

Course

Offering:……

……

	Participant's Name	Signature	Date

1			
2			