THE OPINIONS OF FINAL YEAR UNDERGRADUATE PHARMACY STUDENTS AT THE NORTH-WEST UNIVERSITY REGARDING ASSESSMENT

by

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in the

Division Health Sciences Education,
Faculty of Health Sciences at the University of the Free State

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DECLARATION

I, Cornelia Susanna Mostert, hereby declare that the content of this mini-dissertation is the result of my own independent work and that I have never submitted it at any other institution for the purpose of obtaining a qualification. Where help was sought, it has been acknowledged. I declare that this mini-dissertation has been submitted for the first time at this institution, University of the Free State, towards a Master's degree in Health Professions Education.

I hereby declare that I am aware that copyright of this mini-dissertation is vested in the University of the Free State.

I, Cornelia Susanna Mostert, hereby declare that all royalties regarding to intellectual property, which was developed during the course of and/or in connection with the study at the University of the Free Sate, will accrue to the University.

29/01/2018

C.S Mostert **Date**

DEDICATION

I dedicate this mini-dissertation to my Almighty Father, my loving husband Pieter, amazing children, Marius and Miliah, my Grandmother Suzie and my wonderful family, you are my life.

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I wish to convey my heartfelt gratitude and appreciation to the following persons:

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LIST OF ACRONYMS & ABBREVIATIONS

AaL	**Assessment as learning**
AfL	**Assessment for Learning**
AoL	**Assessment of Learning**
B.Pharm	**Bachelor of Pharmacy**
CAT	**Credit Accumulation and Transfer**
CHE	**Council of Higher Education**
COBES	**Community-Based Education and Services**
DoHET	**Department of Higher Education and Training**
ELO's	**Exit Level Outcomes**
EF	**EFFECT FACTOR**
GPES	**Good Pharmacy Education Standards**
HPE	**Health Professions Education**
HREC	**Health Research Ethics Committee**
HSREC	**Health Sciences Research Ethics Committee**
IPA	**Individualised Process Assessment**
LESA	**LEARNING EFFECTS OF SUMMATIVE ASSESSMENT**
MUSA	**Medicine Usage in South Africa**
NQF	**National Qualifications Framework**
NRF	**National Research Foundation**
NWU	**North-West University**
OBE	**Outcomes-Based Education**
OSCE	**Objectively Structured Clinical Examination**
OSPE	**Objectively Structured Practice Examination**
PCDT	**Primary Health Care and Drug Therapy**
RPL	**Recognition of Prior Learning**
SAPC	**South African Pharmacy Council**
SAQA	**South African Qualifications Authority**
SF	**SOURCE FACTOR**
SOP's	**Standard Operating Procedures**
UFS	**University of the Free State**

SUMMARY

Key terms: **assessment practices; policies; good pharmacy education standards; exit-level outcomes; assessment criteria; principles of good assessment; assessment methods, assessment types; learning**

In order to gain insight into final year pharmacy students' opinions regarding assessment at the North-West University (NWU) School of Pharmacy, a quantitative study was conducted.

Assessment in the (B.Pharm) programme at the NWU School of Pharmacy is governed by the Good Pharmacy Education Standards (GPES) as published by the South African Pharmacy Council (SAPC) and the policies and guidelines regarding assessment as supplied by the Department of Higher Education and Training (DoHET) and the NWU. The policies and guidelines provide the foundation for the constructive alignment of modules, the core principles of good assessment practices and guidelines for the implementation of different types and methods of assessment.

The goal of this study was to gather information on how fourth year pharmacy students view current assessment practices at the NWU School of Pharmacy, with the purpose to aid lecturers in enhancing the current assessment practices. By taking students' opinions into account when developing assessments, lecturers might be able to adjust their current assessment practices in order to support learning and enhance the learning experiences of students. As far as could be determined, undergraduate pharmacy students' opinions with regards to assessment and assessment practices have not yet been explored in this institution. There also seem to be no evidence on this topic considering pharmacy students within the broader South Africa.

A Literature review and paper-based questionnaire constituted the research methods in this study. The literature review served as a foundation for the study, conceptualising aspects of assessments, providing an overview of the setting in which the study was performed and information which contributed to the adjustments made to the selected questionnaire. The validity and reliability of this study was ensured by meticulous research design and methodology.

The findings in this study provided valuable insight into how students view assessment, contributing to knowledge in this field. Overall the current assessment practices at the NWU School of Pharmacy were viewed as positive, however findings of the study identified areas where improvements are required.

The researcher used the findings of the study in order to compile recommendations regarding the enhancement of assessment practices at the NWU School of Pharmacy, which could assist lecturers to adapt their assessment practices in order to enhance students learning and learning experiences. The results of this study also enabled the researcher to conceptualise recommendations for possible future studies into students' learning experiences.

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TERMINOLOGY USED IN THIS STUDY

The terms which are used in this study are defined, explained and/or described in the following section:

Assessment criteria: "The standards used to guide learning and assess learner achievement and/ or evaluate and certify competence" (SAQA 2014:4).

Assessment: "The process used to identify, gather and interpret information and evidence against the required competencies in a qualification, part-qualification, or professional designation in order to make a judgement about a learner's achievement. Assessment can be formal, non-formal or informal; assessment can be of learning already done, or towards learning to inform and shape teaching and learning still to be done" (SAQA 2014:4).

Assessment for Learning (AfL): "Assessment for Learning, also called formative assessment, is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there (Assessment Reform Group 2002:Online)"

Assessment of Learning (AoL): Assessment of Learning, also called summative assessment, is the process where evidence is collected and interpreted by teachers and learners in order to determine if learners indeed learned what was expected of them (The Glossary of Education Reform 2017:Online).

Assessor: "A person able to conduct high-quality internal and external assessment for specific qualifications, part-qualifications, or professional designations. Appropriately qualified lecturers, teachers, educators, trainers, examiners, moderators, chief markers, markers, Recognition of Prior Learning (RPL) specialists, and Credit Accumulation and Transfer (CAT) officials are all examples of assessors" (SAQA 2014:4).

Clinical Pharmacy: A discipline which involves the application of pharmacology in order to achieve specific therapeutic outcomes when treating diseases (UWC 2018b:Online).

Criteria: Principles or standards by which something may be decided or judged (English Oxford Living Dictionaries 2018:Online)**.**

Curriculum: A description of a qualification and gives a detailed account of the content, learning outcomes, learning opportunities, the educational environment in which a qualification will take place. The curriculum also depicts the educational and assessment strategies which are implemented in order to ensure that learners achieve outcomes which are stipulated (Harden in Dent & Harden 2013:8).

Diagnostic assessment: "Assessment conducted before teaching or training starts, for the purposes of identifying learners' strengths and weaknesses, in order to use the associated information for the purposes of creating suitable learning environments" (SAQA 2014:5).

Educator: "An inclusive term referring to teachers, lecturers, facilitators, assessors, moderators, and others teaching, educating, training, facilitating, assessing, or enabling learning in learning contexts across the board" (SAQA 2014:5).

Exit Level Outcomes: "Refer to the outcomes which define the level of performance according to which a candidate completing the qualification is assessed" (SAQA 2014:4).

Feedback: "Specific reporting from the teacher to the learner or between learners, on how they have performed in an assessment activity, regardless of the level of formality of the assessment activity. Feedback specifies what was done well, and why, and provides clear guidance regarding what is missing or still needs development in learners' texts, performances or demonstrations, in order to enhance learning" (SAQA 2014:5).

Formal assessment: "Assessment for which assessment processes, tools and results are recorded towards achievement of a qualification, part-qualification or professional designation." (SAQA 2014:5)

Formative assessment: "A range of formal, non-formal, and informal ongoing assessment procedures used to focus teaching and learning activities to improve learner attainment" (SAQA 2014:5).

Informal assessment: "Judgements made or feedback given in the course of teaching and learning activities. Informal assessments may be in written form but are not usually recorded" (SAQA 2014:6).

Learner: “An inclusive term referring to anyone learning, including pupils, students, apprentices, interns, learners in learnership, people doing training, and people learning non-formally and informally as well as people enrolled for particular qualifications or part-qualifications, and people learning in contact, distance, and self-study contexts at all levels in the system” (SAQA 2014:6).

Opinion: “A view of judgement formed about something, not necessarily based on fact or knowledge” (English Oxford Living Dictionaries 2018:Online).

Outcomes: “The contextually demonstrated end-products of specific learning processes which include knowledge, skills and values. Outcomes could be generic in that they could apply across many fields of learning (generic outcomes include aspects such as “ability to problem solve” or “understanding the world as a set of inter-related systems”) (SAQA 2014:7).

Perception: “The way in which something is regarded, understood, or interpreted” (English Oxford Living Dictionaries 2018:Online).

Pharmaceutical Chemistry: Also called medicinal chemistry, pharmaceutical chemistry is a fundamental discipline within Pharmaceutical Sciences. It constitutes the drug discovery process which involves lead finding, lead optimisation, and investigations in the structure-activity relationship by using various forms of technologies and knowledge from other disciplines of chemistry. Pharmaceutical Chemistry addresses important aspects of drug development and production by implementing Pharmaceutical/Biopharmaceutical analysis (UWC 2018a:Online).

Pharmaceutics: “A discipline that is interested in the formulation, manufacture, quality control and biological application of drug delivery systems” (Robinson in Borchard, Repta & Stella 1985:4).

Pharmacology: A discipline which involves “the study of the interaction of chemicals with living systems” (Trevor, Katzung & Masters 2002:1).

Pharmacy Practice: A discipline which includes subjects concerning social and administrative sciences, clinical sciences and practice experiences. The subject field aims to cultivate the professional attributes of pharmacy students by including content which encompass the ethos of the Pharmacy profession, the legal and ethical guidelines of Pharmacy practice, management and communication (UWC 2018c:Online).

Reflective Assessment: Assessment where students are required to reflect on a set of criteria or learning goals in order to create their own feedback, founded on their own evaluation of and reflection on the assessment task and results, and improve their own learning (White & Frederiksen 1998:9)

Preparation test: A type of an informal diagnostic assessment (cf. Terminology) administered to students before teaching commences, for the purpose of identifying what students already know about the subject of the lecture (SAQA 2014:5).

Principle: "A fundamental quality determining the nature of something" or "a general scientific theorem or law that has numerous special applications across a wide field." (English Oxford Living Dictionaries 2018:Online).

Proposition: A suggested framework, scheme or plan of action (English Oxford Living Dictionaries 2018:Online).

Small tests: A type of an informal diagnostic assessment (cf. Terminology) administered to students before or after teaching commences, for the purpose of identifying what students already know about the subject of the lecture (SAQA 2014:5). A small test for the purpose of this mini-dissertation is a test grading less than 10 marks and does not contribute to the participation mark of the students.

Summative assessment: "Assessment conducted at the end of sections of learning or at the end of a whole learning programme, to evaluate learning achievements related to a particular qualification, part-qualification, or professional designation" (SAQA 2014:8).

THE OPINIONS OF FINAL YEAR UNDERGRADUATE PHARMACY STUDENTS AT THE NORTH-WEST UNIVERSITY REGARDING ASSESSMENT

CHAPTER 1 ORIENTATION TO THE STUDY

1.1 INTRODUCTION

This research project enabled the researcher to perform a study in order to determine what the opinions are of fourth (final) year pharmacy students regarding assessment practices in the Bachelors of Pharmacy (B.Pharm) programme, an undergraduate degree at the North-West University (NWU) School of Pharmacy.

Research findings suggest that students' opinions about assessment have considerable influences on students' approaches to learning, but also vice versa, students' approaches influence the ways in which students perceive assessment (Struyven, Dochy & Janssens 2005). As far as could be determined, undergraduate pharmacy students' opinions with regards to assessment and assessment practices have not yet been explored in South Africa.

The aim of Chapter 1 is to orientate the reader on the research that was done. This study employed an explorative descriptive research method and was conducted within a quantitative framework using a questionnaire. Descriptive statistics were used in order to explore and describe how students experience assessment practices in the School of Pharmacy, NWU. To further achieve the outcomes of the study, a literature review was done to gain a deeper understanding of assessment, assessment practices and the impact of assessment on students.

1.2 BACKGROUND TO THE RESEARCH PROBLEM

In this study, the group of participants consisted of fourth (final) year students enrolled for the B.Pharm degree at the NWU School of Pharmacy in 2016. This study was performed with co-operation and permission of the NWU School of Pharmacy. The educational strategy of the NWU is Outcomes-based Education (OBE). According to Harden in Dent and Harden (2013:151) OBE is used by institutions in order to ensure that when students graduate, they possess all the competencies necessary to practice their chosen profession with confidence. In light of this, it is fair to assume that when students graduate with a

B.Pharm degree from the NWU School of Pharmacy, they will have mastered all the competencies necessary to practice successfully as pharmacists.

In order to determine if graduates have mastered all these competencies, they have to undertake a variety of assessments reflecting assessment criteria that are aligned with the exit-level outcomes (ELO's) of the course. Only on successful completion of an array of specific tasks during assessment, as determined by the assessment criteria, students will have proven that they have mastered the outcomes (Harden in Dent & Harden 2013:151).

Assessment has always been part of education. In recent years, the purpose of assessment in education has been evolving from the tool used to test and rank the ability of learners to memorise facts, to the drive and purpose of learning (Norcini & Friedman Ben-David in Dent & Harden 2013:288). Stiggins (2007:22) states that assessment should encourage learning and motivate students to achieve success. According to the South African Qualifications Authority (SAQA) (2014:4), the goal of assessment is to gather proof that learning took place. In order for learning to take place effectively and to be adequately assessed, it is also important that the assessment criteria are made known and clear to students before learning take place (Alkharusi, Aldhafri & Alnabhani 2013:1690).

Credible assessment is governed by the principles of fairness, validity, reliability and practicability (SAQA 2014:4). These principles are usually used by moderators to evaluate if assessors are complying with good assessment practices. Norcini, Anderson, Bollela, Burch, Costa, Duvivier, Galbraith, Hays, Kent, Perrot and Robberts (2011:206) elaborated on these core principles by outlining the qualities of good assessment. The qualities they outline include validity/coherence, reproducibility/consistency, equivalence, feasibility, educational and catalytic effect and acceptability. Many of these principles and qualities are evaluated by students including, but not limited to, fairness, acceptability, educational - and catalytic effect. Assessment is not an action performed or event taking place in isolation, but forms part of the process of learning (Gilmore & Smith 2008:2). By considering the above literature, it is clear that effective assessment has a distinct purpose and characteristics, and the way in which assessment is facilitated influences the way in which students experience assessment.

Various researchers have emphasised that impact that assessment has on learning is enormous (Elton & Laurillard 1979; Boud, Cohen & Sampson 1999, Cilliers, Schuwirth,

Adendorff, Herman & van der Vleuten 2010a:696). According to Biggs and Tang (2011:197), assessment determines the way in which students learn, and may encourage deep or surface learning. Similar findings by Lee, Azman and Koo (2010:29) showed that learning is greatly affected by assessment and the provision of feedback after assessment. Cilliers *et al.* (2010a:696) states that "assessment may well be one of the most powerful tools we have at our disposal to influence learning." When considering the above, it is clear that the way in which students view assessment, positive or negative, will therefore have an impact on their process of learning.

In a study done by Alkharusi *et al.* (2013:1687) in 2013, the results showed that students on average perceived aspects of assessment, including authenticity, transparency and diversity, in a positive light with the exclusion of student consultation. The findings in the study also emphasised the importance of developing valid assessments which were founded on classroom instruction and real-life scenarios. The study also determined that self-efficacy of students is enhanced if the assessment tasks are reflective of classroom goals.

Although there were some studies done internationally about students' views and experiences of assessment, there are limited studies on the opinions of students regarding assessment practices in South Africa Higher Education Institutions. Cilliers, Schuwirth, Adendorff, Herman and van der Vleuten (2010b & 2012) emphasis the impact of assessment on student learning and gap in literature regarding the relationship between assessment and student learning.

Researchers such as Black and Wiliam (1998) and Brookhart (1997) have done research that emphasise the phenomenal importance of taking students' perceptions and experiences into account when developing assessments. Studies have shown that when assessments are developed by taking students' perceptions into account, students are more motivated academically, self-efficient and perform better in achieving competency-related outcomes (Black & Wiliam 1998; Brookhart 1997, Brookhart 2013, Brown 2004, Crooks 1988).

In summary of the above findings, it is apparent that assessment has many purposes and characteristics, which may be absent or present in assessment practices and assessment practices directly affects learning. Findings of the studies above highlight the importance of research that seek to determine students' opinions about assessment, as it may serve as

means to determine how assessment practices affect student learning and assessment experiences. As further motivation for this study, it is evident from the work of various researchers (Alderson & Banerjee 2001; Lundeberg & Fox 1991, Segers & Dochy 2006 and Cilliers *et al.* 2010b & 2012) there is a need for more research regarding the relationship between assessment and learning. The current study is thus, in summary, motivated by the possibility that it might yield findings, which can determine how assessment practices affect student learning, students' assessment experiences and contribute to the knowledge pool regarding the relationship between assessment and learning.

1.3 PROBLEM STATEMENT AND RESEARCH QUESTIONS

At the NWU, no study has so far been conducted to collect information regarding the opinions of Pharmacy students in the final (fourth) year of study regarding assessment practices. As mentioned in the previous section (cf. 1.2), findings and statements by various researchers (Alderson & Banerjee 2001; Lundeberg & Fox 1991; Segers & Dochy 2006 and Cilliers *et al.* 2010b) support the researcher's notion that, although the effect that assessment has on learning is profound, there is definitely a gap in knowledge regarding the relationship between assessment and student learning, especially in the realm of health education and health sciences education (Cilliers *et al.* 2012:40).

Furthermore, there seemed to be no recent scientific literature on the opinions of pharmacy students with regards to assessment in South Africa. After an extensive literature review, it is clear that there are limited studies concerning the opinions regarding assessment of pharmacy students internationally.

Searches on the National Research Foundation's (NRF) website and the Nexus Database System, which contains information on South African dissertations, did not yield relevant dissertations or research on the opinions of pharmacy students on assessment. Research was also conducted on EBSCO, MEDLINE, EMBASE ERIC, Academic Search Complete and CINAHL databases to identify articles with relevance to this subject. The researcher did, however, find related studies in different disciplines or sections in studies considering students' opinions or experiences conducted in South-Africa and elsewhere.

References and acknowledgements were made of some helpful and informative sections in various dissertations/ theses and articles. By means of a literature review, the researcher determined that it is imperative to determine how students view assessment practices.

As the purpose of assessment is to enhance and evaluate learning (Stiggins 2007:33), it is no longer possible for Higher Education Institutions to ignore students' opinions regarding assessment, as the quality of education delivered depends on the impact of assessment on learning (Anwar & Hameed 2016; Biggs & Tang 2011; Boud & Falchikov 2006; Struyven *et al.* 2005; Pedder & James 2012). Lee, Azman and Koo (2010:29) showed that the way in which students view assessment, positive or negative, will have an impact on their process of learning.

This study statistically describes the fourth year pharmacy students at the NWU School of Pharmacy's opinions regarding assessment practices. There are also questions in study which enquires into the effects assessment has on students' lives, especially with regards to assessment anxiety. Findings may enable lecturers and those involved in managing the overall programme to enhance the current assessment practices to enhance the impact that assessment has on student learning.

The following research questions were asked in order to address the problem stated:

1. How can academic assessment be conceptualised and contextualised as the theoretical framework of this study?
2. What are the opinions of students regarding assessment practices at the NWU School of Pharmacy with specific reference to the following:

2.1 Communication practices in assessment
2.2 Formative assessment practices
2.3 Summative assessment practices
2.4 Assessment anxiety
2.5 Feedback practices after assessments
2.6 The overall effect that assessment has on the student

The field of assessment in health professions education and higher education is vast. It constitutes many aspects and elements. For the purpose of this mini dissertation only a few of the elements were considered, as detailed in the research questions above. Additional research in the field which consider a broader aspect of the topic is recommended. The

information obtained through this study include the specific and required elements which were necessary to consider in the context of the B. Pharm programme at the NWU.

1.4 OVERALL GOAL, AIM AND OBJECTIVES OF THE STUDY

The overall goal, aim and objectives of the study are as follows:

1.4.1 Overall goal of the study

The goal of the study is to collect information from fourth year B.Pharm students in order to determine what their opinions are regarding assessment practices. The information could be of use to lecturers, as it could assist them in enhancing assessment practices, in order to support learning and enhance students' learning experiences

1.4.2 Aim of the study

The aim of the study is to determine the opinions of undergraduate, fourth year Pharmacy students regarding assessment practices at the NWU School of Pharmacy.

1.4.3 Objectives of the study

i. *Conceptualising and contextualising academic assessment by means of a literature study with the purpose of compiling a theoretical framework for the study. This objective addresses research Question 1.*
ii. *To determine students' opinions concerning assessment practices at the NWU School of Pharmacy with reference to communication practices in assessment, formative assessment practices, summative assessment practices, assessment anxiety, feedback practices after assessment and the overall effect that assessment has on the student a questionnaire was used. This objective addresses research Question 2.*

By achieving the above-mentioned objectives, the researcher will be able to write recommendations which could serve as a directive for developing a more student inclusive assessment policy and enhancing assessment practices.

1.5 DELINEATION OF THE FIELD AND THE SCOPE OF THE STUDY

The results obtained from this study are restricted to the undergraduate, fourth year Pharmacy students at the NWU. The study pertains to the research field of Health Professions Education. It is also envisioned that the findings of this study may contribute in the improvement of assessment practices in undergraduate pharmacy programmes. Regarding the above-mentioned reasons, it is concluded that this study is an interdisciplinary study which extends across two research domains, namely Health Professions Education and Pharmacy.

The researcher conducting the study is a registered Pharmacist who obtained a B.Pharm degree and a postgraduate qualification in Primary Health Care and Drug Therapy from the NWU. She is permanently appointed on the level of lecturer at the School of Pharmacy at the NWU since 2011. The researcher has a passion for education, and has established through experience and research that assessment practices have an enormous impact on the quality of education at any institution and on students' lives. Through her research, she has established the necessity of understanding students' opinions regarding assessment in order to execute quality education and Assessment for Learning (AfL).

1.6 SIGNIFICANCE AND VALUE OF THE STUDY

According to a study by Savickiené (2014:27), the quality of learning is greatly influenced by the assessment of student learning in higher education. In order to develop sound and quality driven assessment practices, it is imperative to determine the impact of assessment on student learning and the quality of education.

This study is the first of its kind conducted in the B.Pharm programme at the NWU School of Pharmacy. The results may give lecturers and management the opportunity to consider the opinions of students about assessment when reviewing current assessment practices, which may in turn have a positive effect on student learning. This study may also contribute to the limited literature available on the effects of assessment on learning. In light of the above-mentioned reasons that the researcher envisions that the findings in this study may contribute significantly to the evaluation and improvement of assessment practices and policies at the NWU School of Pharmacy.

1.7 RESEARCH DESIGN OF THE STUDY

This section provides a brief overview of the research methods used in this study. Chapter 3 contains a detailed description of the research design and methodology.

The research project will be a descriptive, exploratory, quantitative study. A literature review was conducted followed by a questionnaire, employing both closed and open-ended questions. The opinions collected by the open-ended question was coded and arranged into themes. Figure 1.1 provides a schematic overview of the study.

FIGURE 1.1: A SCHEMATIC OVERVIEW OF THE STUDY (COMPILED BY THE RESEARCHER, MOSTERT 2017)

1.8 DATA DISSEMINATION

The results obtained from the collected data form part of a mini-dissertation towards a Magister degree in Health Professions Education (HPE) at the University of the Free State (UFS). Discussions and conclusions which result from the data in the mini-dissertation may be disseminated in the form of published articles and may be used in order to write

recommendations regarding assessment practices at univerisities who role out pharmacy programmes. Findings in the study may also be presented at international conferences and national meetings.

1.9 LAYOUT OF THE MINI-DISSERTATION

The arrangement of the mini-dissertation:

- Title Page
- Declaration
- Acknowledgements
- Table of Content
- List of tables
- List of figures
- List of acronyms
- Summary
- Chapter 1: Orientation to the study
- Chapter 2: Conceptualising and contextualising assessment
- Chapter 3: Research design and methodology
- Chapter 4: Results of the questionnaire
- Chapter 5: Interpretation and discussion of results
- Chapter 6: Conclusion, recommendations and limitations of the study
- Bibliography
- Appendices

Chapter 1, ***Orientation to the study***, is a brief introduction and background to the study. Chapter 1 also refers to the problem statement, research questions, goal, aim and objectives. The delineation of the study, research design and methodology are also briefly discussed. Chapter 1 aims to orientate the reader to the content of the report and where the study was performed and supplies the reader with reasons that underscore the value and significance of the report with regards to the use of the data. A schematic overview of the mini-dissertation, the proposed use of the study and summative remarks are also supplied.

Chapter 2, ***Conceptualising and contextualising assessment***, will serve as the theoretical foundation of the study, elaborating on different aspects of assessment. Detail

about the value and significance of assessment in higher education will be discussed and references will be made to the effects of assessment on students and learning, as found by international and local studies.

In Chapter 3, ***Research design and methodology***, provides an in-depth explanation of the research design, methodology, methods used for data collection, reliability, validity and trustworthiness of the study and data analysis used in this study.

In Chapter 4, ***Results of the questionnaire***, the data resulting from the questionnaire will be reported.

The results will then be interpreted and critically discussed in Chapter 5, ***Interpretation and discussion of results***. This will be done to address the stated research objectives of the study.

A detailed conclusion, founded recommendations and the limitations of this study will constitute Chapter 6, ***Conclusion, recommendations and limitations of the study***.

1.10 SUMMARY

The purpose of Chapter 1 was to enlighten and supply the reader with a brief overview of the study. This chapter also provided the background and context of the study, and stated the problem, the overall goal, aim and objectives of the study. The reader was also briefly introduced to the research design and methodology and provided with a layout of the mini-dissertation.

Chapter 2 reports on the literature review done by the researcher, in order to supply a foundation for the study. Chapter 2 is entitled ***Conceptualising and contextualising assessment***

CHAPTER 2
CONCEPTUALISING AND CONTEXTUALISING ASSESSMENT

2.1 INTRODUCTION

"Most teachers waste their time by asking questions that are intended to discover what a pupil does not know, whereas the true art of questioning is to discover what the pupil does know or is capable of knowing" – Albert Einstein (Shankland 1963:50).

The previous chapter constituted an overview of and motivation for the study. In this chapter, the researcher envisions to explore various concepts and aspects surrounding academic assessment and to contextualise the study within the environment and circumstances in which it was executed. Furthermore, the goal of this chapter is to explore the findings made in other similar studies and supply substance to the results of the study: "The Opinions of Final Year Undergraduate Pharmacy Students at the North-West University regarding Assessment".

Figure 2.1 provides the reader with a schematic overview of the conceptual framework of Chapter 2. In defining the general term assessment and to address all aspects of assessment attention was focussed to literature concerning assessment in higher education and in the field of health professions education. An academic database search was conducted and the most recent or most relevant resources with reference to the focus of this mini-dissertation was used (cf. 1.3).

No recent literature on the opinions of pharmacy students with regards to assessment in South Africa had been found on completion of an academic database search (cf. 1.3), a few studies on the opinions of health sciences students in other disciplines had been sourced and used in the current study.

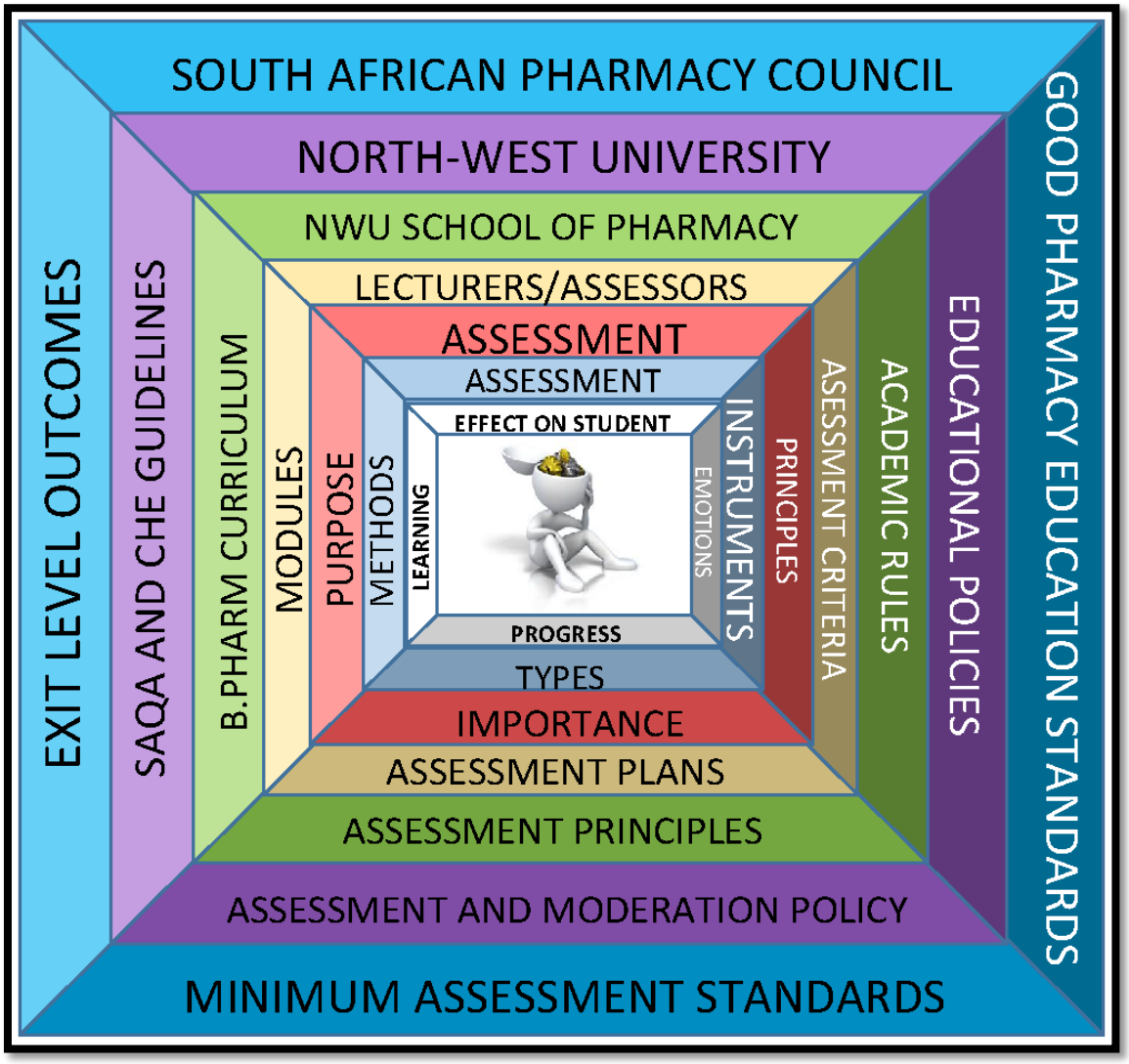


FIGURE 2.1: SCHEMATIC OVERVIEW OF THE CONCEPTUAL FRAMEWORK FOR CHAPTER 2 (Compiled by the researcher, Mostert 2017)

Figure 2.1 is representative of a pyramid, seen from above. At the base the SAPC is represented, as it is the statutory body regulating the education and training of pharmacists in South-Africa. The SAPC provides the Good Pharmacy Education Standards (GPES), containing the ELO's and Minimum Assessment Standards for Institutions that facilitate a B.Pharm degree (RSA 2014). All B.Pharm graduates must register with the SAPC in order to practice as pharmacists.

The following level represents the NWU as a higher education institution and provider of the B.Pharm degree. The NWU has its own educational policies, which is subject to the policies and guidelines provided by the Council of Higher Education (CHE) and SAQA. These policies govern and guide all academic activities, school-specific policies and guidelines on the NWU campus, including the B.Pharm degree in the School of Pharmacy. The School of

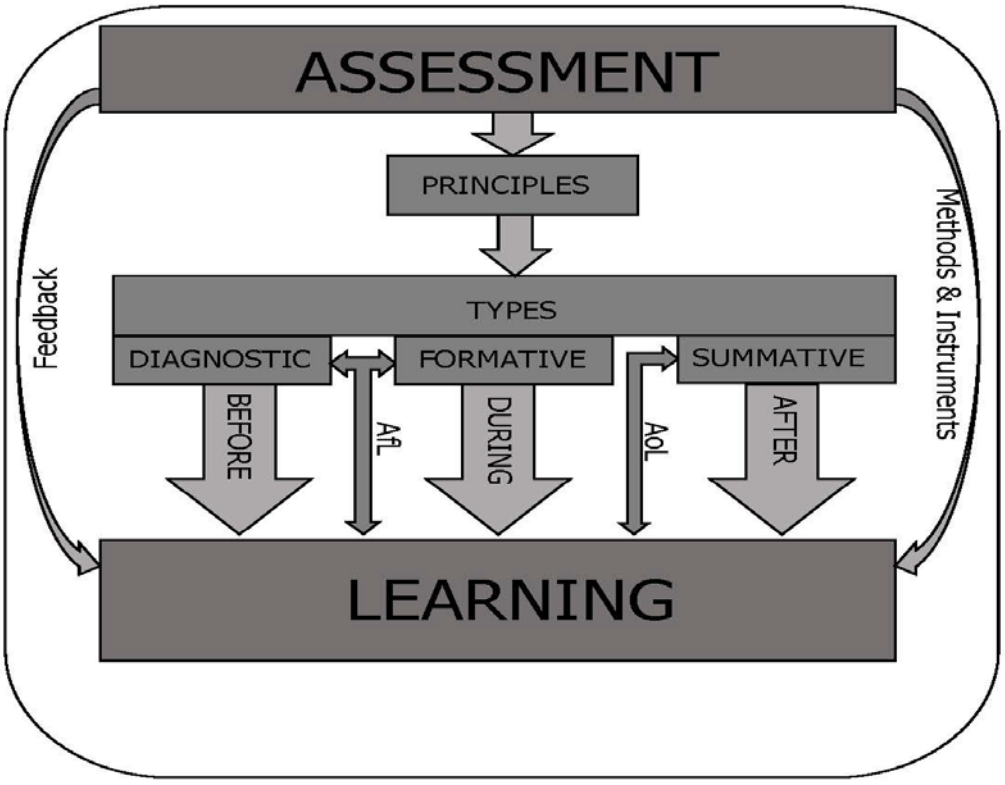
Pharmacy is displayed on the next level, where the B.Pharm curriculum was developed. The School of Pharmacy provides curriculum-specific academic rules and policies to govern academic activities, including assessment, on ground level.

Guided by the combined policies and regulations, are the lecturers in the School of Pharmacy, who develop modules, module-specific assessment criteria and assessment plans. Lecturers also implement and execute assessment, using different methods, types and instruments, as displayed on the following level. Finally, at the top, students are at the centre of the assessment process, which affects them at many levels, determines the quality of their learning and ultimately their progress through the programme in order to graduate successfully and register as pharmacists with the SAPC. How the B.Pharm students view assessment practices at the NWU and the effects it has on their lives, is at the core of Chapter 2.

2.2 DEFINING ASSESSMENT

Academic assessment refers to a spectrum of methods or tools that educators employ to measure, evaluate and record academic achievements and determine if learning took place (The Glossary of Education Reform 2017:Online). According to SAQA, assessment in education and training consists of collecting evidence from students, in order to prove their ability or inability to meet the criteria set in outcomes (SAQA 2014:5). Knight states that assessment is “a practice of judgment” (Knight 2006:436). Stiggins (2014:69) defines assessment as “the process of gathering evidence to inform instructional decisions”.

After analysing the above-mentioned research, the researcher concludes that assessment is the umbrella term for all the evaluation types, methods and instruments educators use to determine if and how learning took place, and ultimately, a measure of instructional success. Figure 2.2 is a schematic representation of the various elements of assessment discussed in this chapter.



*AfL – Assessment for Learning; AoL – Assessment of Learning

FIGURE 2.2: SCHEMATIC OVERVIEW OF THE ELEMENTS OF ASSESSMENT DISCUSSED IN CHAPTER 2 (Compiled by the researcher, Mostert 2017)

2.3 THE IMPORTANCE AND PURPOSE OF ASSESSMENT

The importance of assessment in higher education is accentuated by many studies. Bloxham and Boyd (2007:3) state that "It (assessment) shapes the experience of students and influences their behaviour more than the teaching they receive". Researchers such as Biggs and Tang (2011), Gijbels, Segers and Struyf (2008) and Struyven *et al.* (2005) have all written extensively about the impact assessment has on students' study strategies and learning processes as well as the emotional impact that assessment has on students.

Gibbs and Simpsons (2004:22) found that in order to improve teaching, the effect of changes in assessment practices, supersedes any other changes an educator may implement. The findings of Struyven *et al.* (2005:332) show that the manner in which students think about learning and studying, has a profound effect on their approach in completing assignments and evaluation tasks and that their experiences in assessment will govern the way in which the student will approach learning in future. This is echoed by findings by Asikainen, Parpala, Virtanen and Lindblom-Ylänne (2013:216), who found evidence of a relationship between the assessment method and study profile of a student.

Biggs and Tang (2011:16) and Boud and Falchikov (2006:411) emphasise that assessment has a big impact on the quality of students' learning. Stiggins (2014:72) summarises the importance of assessment very accurately when he emphasises that assessment must be utilised for far more than the grading and ranking of students. Furthermore, he emphasised that assessment should be used to help educators 'diagnose' student requirements, monitor and improve student academic growth, encourage students to endeavour to achieve academic excellence and verify the students' mastery of requisite standards.

In light of the purpose of assessment, Pedder and James (2012:33) state that when educators and students utilize the information resulting from assessment, "they are fulfilling the educational purposes of assessment". The purpose of assessment is multi-faceted. One of the purposes is described by Biggs and Tang (2011:16), who declare that assessment should comprise and be an effective reflection of what is expected by the course ELO's. In other research it is proposed that assessment should be purposefully used as a tool to enhance learning, encouraging students to keep trying to learn and excel in assessments as opposed to discouraging them, making them feel that they could never learn effectively enough (Stiggins 2007:22). Anwar and Hameed (2016:38) summarise that the ultimate goal of assessment is to test what was learnt by students and that students devise their learning according to how they are assessed.

There are different types of assessment, and different assessment types constitute different purposes. Norcini and Friedman Ben-David in Dent and Harden (2013:287) state that the purpose of diagnostic assessment is to determine the educational needs of learners, in order to optimise learning. The authors state that the purpose of formative assessment is to guide and create learning and that the goal of summative assessment is to determine if students have learned what was taught.

Brown (2004:81) argues that before assessing, educators should determine what, how and why they are assessing students. The author further elaborates on this point by saying that the different purposes of assessment, including motivation, activity encouragement, assessment for guidance, remediation feedback, grading and selection, should be a determining factor in the choice of assessment instruments or tools, suitable for the purpose.

Summarising the above research, it is clear that assessment is very important. Not only does assessment determine the quality of learning that takes place, it appears as if assessment determines, in a big way, the learning methods, abilities and success of students. It can also be derived from the above that the purpose of assessment varies according to the type and method of assessment, but in essence the purpose of assessment is to inform educators if learning took place and aid students in mastering the outcomes of the modules they are enrolled for.

2.4 THE PRINCIPLES FOR GOOD ASSESSMENT

A principle is defined as a "basic rule that controls how something happens or works" (Cambridge Dictionary 2017:Online). According to Norcini *et al.* (2011:206) principles or criteria provide the foundation and framework for decisions. In the following sections, literature with regards to the principles of assessment, propositions for effective assessment and feedback as a principle of assessment will be discussed (cf. Figure 2.2).

2.4.1 Principles of assessment

SAQA (2014:11) compiled a list of principles in order to govern assessment practices at institutions in South Africa. Table 2.1 is an excerpt from the SAQA National Policy and Criterial for Designing and Implementing Assessment, which was published in 2014.

TABLE 2.1: CORE ASSUMPTIONS AND PRINCIPLES OF ASSESSMENT (SAQA 2014:11)

"Core Assumptions and Principles of Assessment

15. The form taken by any given assessment is related to its purpose and to the qualification of which it is part: assessment is also integral to the curriculum of which it is part.
16. The assumptions underlying any assessment, how assessment is going to be used as part of learning, and assessment criteria are established and documented before learning starts.
17. Adherence to the following assessment principles is key:
    a) **validity,** where assessment measures what it sets out to measure; where procedures, methods, instruments and materials are appropriate, useful and meaningful; and where there is validation – activities to ensure validity. There must be a match between content to be assessed, learning outcomes, and purpose of assessment, where the assessment relates to its stated purpose, learning outcomes, and assessment criteria (content and construct validity);
    b) **reliability**, where measures produce similar results under consistent conditions; where to a great extent, similar assessment-related judgements are made across similar contexts in consistent ways;
    c) **integrity**, where there is honesty in every part of the assessment process;
    d) **transparency**, where learners and educators have clear understanding of the relevant processes;
    e) **accountability,** where all role-players in assessment processes acknowledge and account for their areas of responsibility;
    f) **fairness**, where learners are assessed on what they know and have been taught, and the purpose of assessment is to enhance learning;
    g) **absence of bias**, where assessment practices do not in any way advantage or disadvantage particular learners or groups of learners;
    h) **sensitivity to language**, where care is taken to ensure that language does not become a barrier to learning;
    i) **credibility in the form of supportive administration procedures,** where physical and other conditions under which assessment is conducted do not unfairly prejudice assessment activities and outcomes; and
    j) **assessment range**, where the full range of relevant competencies needed for a qualification, part-qualification or professional designation is assessed."

In 2011, Norcini *et al.* (2011:210) compiled a document describing criteria for good assessment. Table 2.2 is a summary of these criteria.

TABLE 2.2: CRITERIA FOR GOOD ASSESSMENT (Norcini *et al.* 2011:210)

QUALITY OF ASSESSMENT	DESCRIPTION
Validity or coherence	Coherency in the body of evidence Evidence that the assessment is for a particular purpose
Reproducibility or consistence	The results will be consistent if repeated in the same circumstances
Equivalence	The scores or decisions are the same if administered across different institutions or cycles of testing
Feasibility	The assessment is practicable, realistic and sensible
Educational effect	The assessment motivates students to prepare to take it in such a way that learning is stimulated
Catalytic effect	The assessment provides results and feedback in a way which creates enhances and supports education and stimulates learning for students
Acceptability	Stakeholders (Students and Moderators) find that the results are credible.

Gerritsen-van Leeuwenkamp, Joosten-ten Brinke and Kester (2017:97) performed a literature review regarding assessment quality in 2017. In the article, the criteria for quality assessment were grouped into three categories: validity, transparency and reliability.

Many researchers state that an assessment is valid or displays validity if the assessment measures what it is supposed to measure. An assessment is thus valid if it fits the purpose it was designed for (Anderson & Rogan 2010:51; Borsboom, Mellenbergh & Van Heerden 2004:1069; Van de Watering & Van de Rijt 2006:137). According to McLeod (2013: Online) the validity of a test can be evaluated against two main criteria, namely content-related validity and criterion-related validity. Figure 2.3 is a representation of the criteria which are used to measure assessment validity.

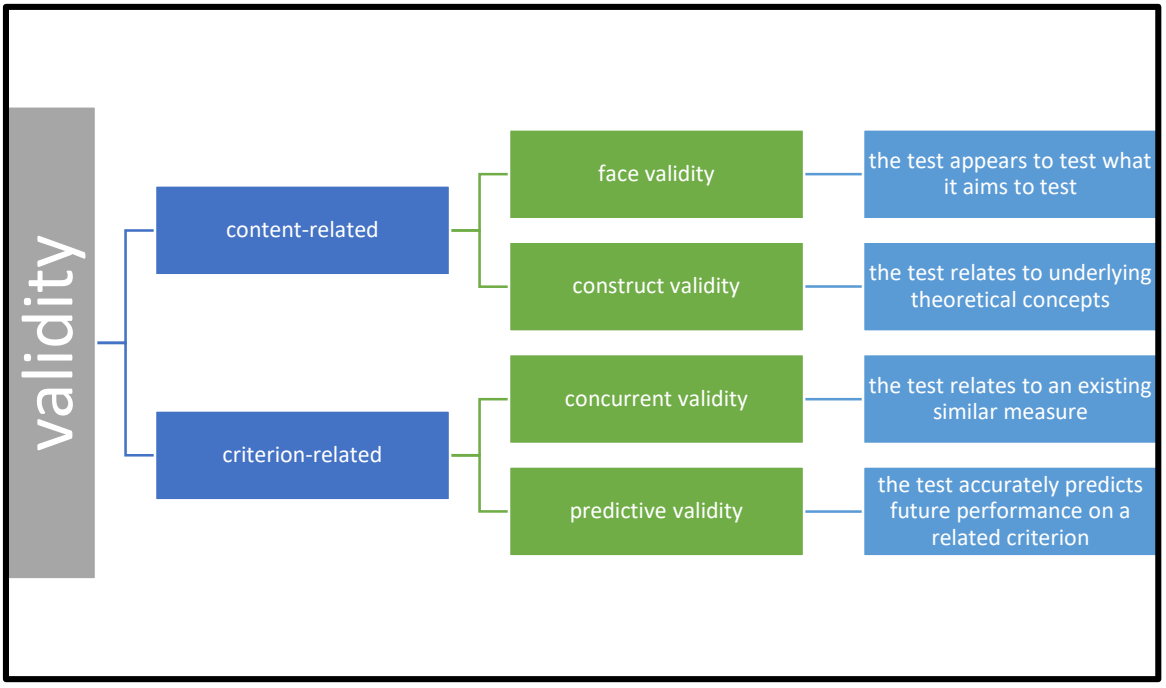


FIGURE 2.3: SCHEMATIC REPRESENTATION OF VALIDITY CRITERIA
(Compiled by the researcher, Mostert 2017, derived from McLeod 2013a: Online)

According to Gerritsen-van Leeuwenkamp *et al.* (2017:98), the criteria for measuring validity most often used in literature are meaningfulness and educational effect. According to the authors, meaningfulness refers to the value the assessment adds to stakeholders, including if it provides stakeholders with opportunities to learn and educational effect refers to the intended and unintended effect the assessment has on stakeholders, such as enhancing learning.

Transparency, according to Gerritsen-van Leeuwenkamp *et al.* (2017:99), does not explicitly pertain to testing but rather focuses on the process of assessment. According to Ploegh, Tillema and Segers (2009:103) transparency clearly refers to the need for accuracy and clarity in the assessment process, in order to prevent misunderstandings and misinterpretation about what is assessed and how it is assessed. Anderson and Rogan (2010:52) explains that transparency is measured by how clear and available the assessment criteria are made to students.

Anderson and Rogan (2010:53) states that reliability is the measure of how accurately educators are measuring the progress of students and ultimately of the assessments' consistency. An assessment is consistent if the outcomes or scores can be meaningfully reproduced and this may serve as evidence of validity (Downing 2004:1007). There are mainly two main types of reliability according to McLeod (2013: Online), external and internal. External reliability includes the test-retest and inter-rater criteria. Internal reliability includes the split-half method. Figure 2.4 is a graphical representation of the various criteria of reliability and their applications. The goal of an assessment determines what type of consistency or reliability is most important. (Downing 2004:1007).

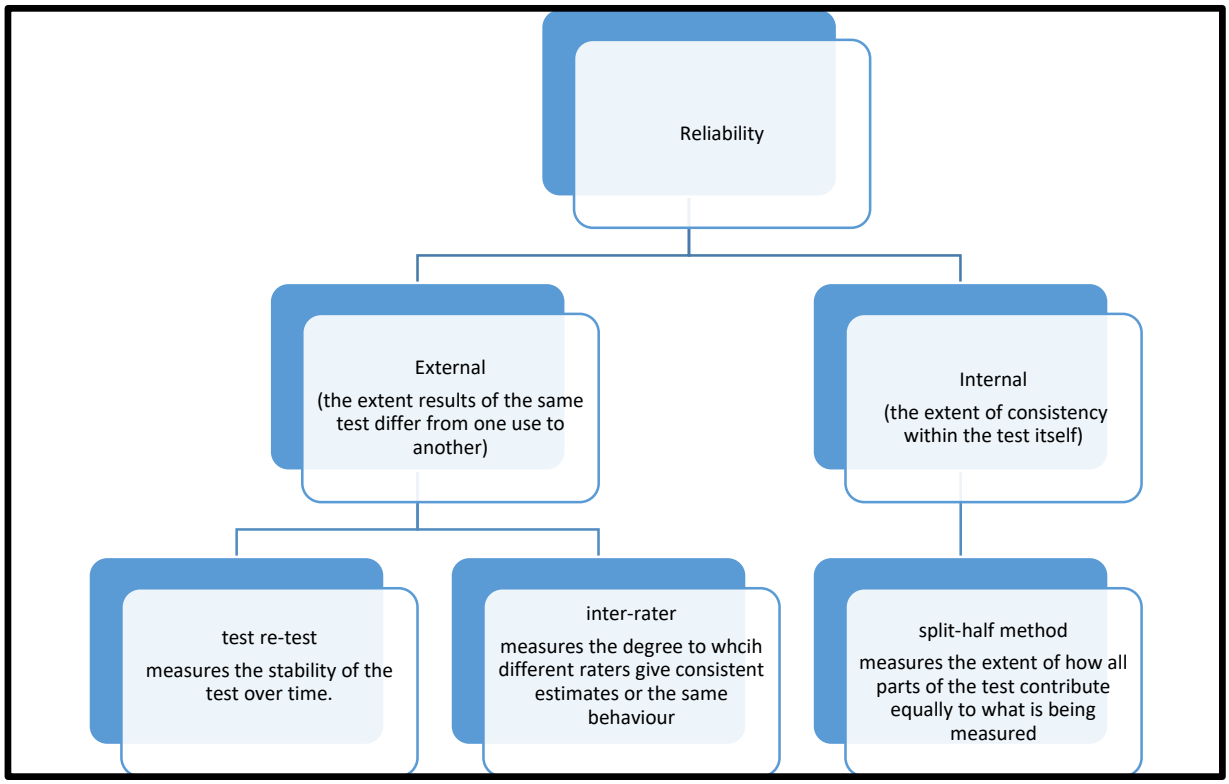


FIGURE 2.4: SCHEMATIC REPRESENTATION OF RELIABILITY CRITERIA
(Compiled by the researcher, Mostert 2017, derived from McLeod 2013b: online)

From the research above, it is clear that there are some key qualities and principles to guide effective assessment. Fairness, validity, reliability and practicability are but a few critical qualities of assessment that are all inter-related and impact each other. It can be summarised that the successful process and execution of assessment depend on the implementation of the qualities and principles of good assessment at each stage of assessment. The researcher thought it important to detail most of the qualities and principles of assessment, even though the focus of this specific study was on the opinions of students' regarding a few aspects of assessment (cf. 1.3).

2.4.2 Propositions for effective assessment

Boud, Sadler, Joughin, James, Freeman, Kift *et al.* (2010:1) wrote an article containing propositions with regards to future assessment in higher education. In this article, the authors list and elaborate on certain principles, which in theory will assist educators on delivering effective assessment. Figure 2.5 displays a summary of the seven proposed principles to guide effective assessment by Boud *et al.* (2010:2).

FIGURE 2.5: PROPOSITIONS ON EFFECTIVE FUTURE ASSESSMENT (Summarised from Boud *et al.* 2010:2)

According to Boud *et al.* (2010:2), the proposition principles in Figure 2.5 will lead to most effective assessment. The authors also reiterate that these propositions should be considered and applied in light of the curriculum and teaching and learning strategies. These propositions focus on AfL as the central theme, with regards to curriculum design and teacher focus. Furthermore, the authors propose that assessment and feedback should encourage and create learning and provide a clear, comprehensive and reliable picture of student achievements. Student involvement with and orientation to assessment practices represent further propositions for enhancement of assessment practices.

2.4.3 Feedback as a principle of assessment

In light of the emphasis Boud *et al.* (2010:2) put on AfL, the researcher felt it appropriate to elaborate on assessment feedback (cf. Figure 2.2).

According to Ende (1983:777) feedback is information describing students' performance with regards to a specific activity that may give the student guidance to improve their future performance in the same or related activity. Feedback in assessment has been shown to enhance and develop learning (Mutch 2003:36). Constructive feedback is a vital part of the process of teaching and learning as it enables the teacher to supply the learner with insight regarding actions and consequences. Feedback also allows the teacher and learner to achieve personal and course objectives (Krackov in Dent & Harden 2013:323).

A study done by Kim (2015:2) in 2015 shows that teacher feedback is a useful device that can engage students' actively in learning and help them improve content knowledge. According to this author, students are generally not motivated to use the teacher feedback. The study also showed that specific teacher feedback effectively assisted students during the revision of work; suggests that teachers need to provide specific feedback with regards to individual errors in students' work; and offer specific direction for improvement (Kim 2015:22). In a study done by Ada and Stansfield (2017:227), which tracked students' engagement with assessment feedback, it was found that more than half of the students accessed their feedback, although formative assessment feedback was accessed the least, reasons cited as there being no grading.

Feedback differs in purpose when considering the type of assessment that was used. According to Krackov in Dent and Harden (2013:323) formative feedback provides insights

that help the learner adjust performance and ultimately leads to improvement. Perera, Lee, Win, Perera and Wijesuriya (2008:395) state that formative feedback should be task directed, occur continuously and take place as soon as possible after the assessment, in order to allow the student to make changes. In a study done by Higgins, Hartley & Skelton (2002:58) students stated that they feel they deserve feedback, see it potentially as being formative and feel that receiving feedback is fair. Summative feedback occurs at the conclusion of the module, and communicates a decision regarding the performance of the student. Summative assessment should take place after formative feedback and remedial actions and the feedback should express an outcome of whether the student achieved the set outcomes of the module (Krackov in Dent & Harden 2013:323).

Krackov in Dent and Harden (2013:323) further elaborate on the importance of feedback to students and educators. Feedback clarifies objectives and expectations in assessment and reinforces good performance. During formative assessment feedback, students are given grounds to correct mistakes and summative feedback serves as a reference point for evaluation at the end of a module. Feedback gives the student an opportunity to objectively evaluate their actual performance in a module. Emotionally, feedback has many benefits. It minimizes the need for self-validation and reduces performance anxiety and insecurity. Feedback also encourages two-way communication between students and educators and supplies students with guidance regarding learning. Feedback forms part of the role of an educator. It affirms the teacher's commitment to assist the student in achieving module outcomes, by linking teaching and assessment (Krackov in Dent & Harden 2013:324).

In summary, Boud *et al.* (2010:2) propose that feedback should be used to vigorously increase student learning by ensuring that feedback is informative, supportive and facilitates a positive attitude to future learning. They also state that in order to provide meaningful feedback, feedback should be given timely in order for students to improve the quality of their work. The authors further elaborate that feedback should be specific, not only marks and grades, but supply students with the means of how to improve their work.

2.5 TYPES OF ASSESSMENT

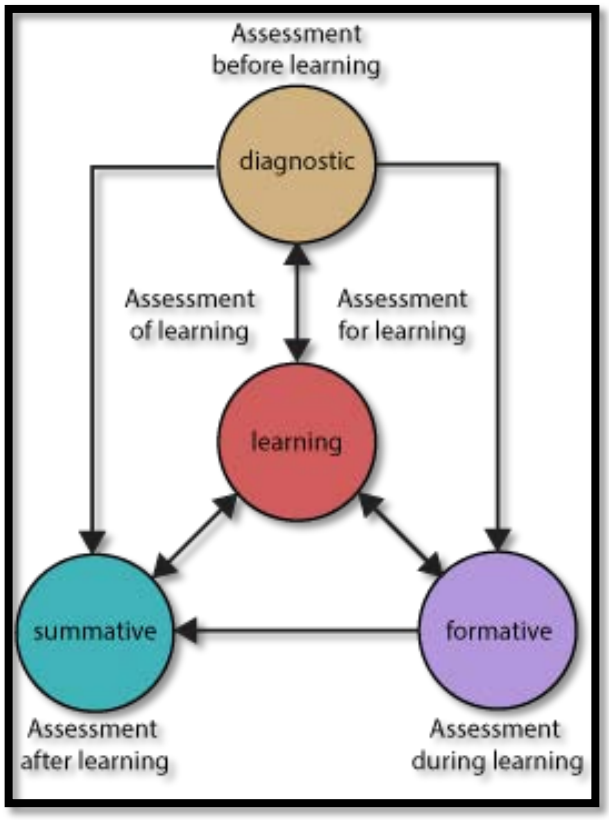


FIGURE 2.6: TYPES OF ASSESSMENT (University of Wisconsin-Madison 2016:Online)

As depicted in Figure 2.6, there are various types of assessment. Biggs and Tang (2011:195) state that there are mainly two outstanding reasons for assessing students namely, formative feedback and summative grading. According to the authors, although many refer to formative and summative assessment as types of assessment, they differ in purpose. Hanauer, Hatful and Jacobs-Sera (2009:24) also included diagnostic assessment in their classification of assessment (cf. Figure 2.2).

Brown (2004:81) argues that before assessing, educators should determine what, how and why they are assessing students. The author further elaborates on this point by saying that the different purposes of assessment, including motivation, activity encouragement, assessment for guidance, remediation feedback, grading and selection, should be a determining factor in the choice of assessment instruments or tools, suitable for the purpose. In this section, the purpose and use of some types of assessment will be discussed in detail.

2.5.1 Diagnostic assessment

Diagnostic assessment is used to determine learners' educational strengths and weaknesses. Students are directed to enhance learning where weakness is detected. Diagnostic assessment is valuable in OBE, as it determines outcomes not yet mastered by students (Norcini & Friedman Ben-David in Dent & Harden 2013:287). Hanauer *et al.* (2009:24) state that the purpose of diagnostic assessment is to provide information regarding the current understanding and progress of the student, to the educator and student. Diagnostic assessment usually forms part of a lecturer's formative assessment strategy.

2.5.2 Formative assessment

Formative assessments are defined in The Glossary of Education Reform, as an assortment of methods which teachers employ to identify and evaluate the academic needs and progress during an instructional period, in order to gather data to use for in-process teaching and learning modifications (The Glossary of Education Reform 2013:Online).

Formative assessment is used to provide feedback regarding the students' development during education and in recent studies it was found that learning is created by merely completing such an assessment (Norcini *&* Friedman Ben-David in Dent & Harden 2013:287). According to Hanauer *et al.* (2009:24), information resulting from formative assessment is used by the instructor in an effort to relay and advance classroom teaching and enhance teaching.

Clark (2012:208) states that formative assessment has two connected objectives, namely AfL and Assessment as Learning (AaL). The author further elaborates that AfL screens the progress and improvement of the student with regards to goals that should be achieved in the module. AaL refers to the collective and individual reflection on proof of learning, where educators and students agree to learning goals, share learning aims and success benchmarks and evaluate their progress through discussion, self- and peer assessment.

According to Norcini and Friedman Ben-David in Dent and Harden (2013:288) formative assessment has a double purpose. The first purpose is to provide feedback to students and educators intended to guide learning and the second is that the participation in assessment

tasks creates learning. The authors state that formative assessment is valuable because it supports and creates learning. According to Ali and Khan (2016:191), the purposes of formative assessment are to enhance students' learning, support their intrinsic drive to learn and encourage them to set higher standards for themselves.

According to Gijbels and Dochy (2006:401), the purposes of formative assessment were summarized by Crooks (1988) as follows:

- Embedding, consolidating and revisiting prerequisite knowledge and skills before presenting students with new knowledge or skills;
- Reaffirming important aspects of content;
- Encouraging and enhancing active learning strategies of learners;
- Supplying learners with the opportunity to practise new skills and amalgamate learning;
- Providing constructive and corrective feedback, to aid in remediation;
- Providing students with the opportunity to monitor their progress and develop the ability to evaluate their own skills;
- Assisting students in guiding future learning activities and enhancing performance; and
- Creating a means for students to evaluate their accomplishments.

2.5.3 Summative assessment

One of the most well-known types is summative assessment, which is defined by The Glossary of Education Reform as a means "to evaluate student education, skill acquisition and academic achievement at the end of a defined instructional period". Also referred to "assessment of learning" (AoL), summative assessments usually display three trademarks:

- The assessments are used to determine if and to which degree students achieved expected learning outcomes;
- Summative assessments take place at the end of an instructional period and are evaluative.
- The results of summative assessments are usually recorded as scores or grades.

(The Glossary of Education Reform 2013:Online).

The goal of summative assessment is to determine whether students have mastered the outcomes of the module, and the results from this assessment usually indicate whether a

student has successfully completed the module. Summative assessments usually occur at the end of a module (Norcini & Friedman Ben-David in Dent & Harden 2013:287).

In a document elaborating on the criteria for good assessment, Norcini *et al.* (2010:211) state that effective summative assessment is mostly medium or high stakes and is intended to respond to the need for accountability. The authors also stipulate that good summative assessment requires clear, high-quality test material, noteworthy content expertise, clear and systematic standard setting and valid administration. They also emphasise that feedback is important in summative assessment, as it is an opportunity to support learners in continuous education.

2.6 THE IMPLEMENTATION OF ASSESSMENT

Assessment methods are the strategies, techniques, tools and instruments used by an assessor to acquire evidence proving that learners have performed (Le Roux 2004:62). Savickiené (2014:28) states that assessment methods describe the ways in which to gather and evaluate information on students' achievement of learning outcomes.

Assessment methods represent a description of how and when an assessment instrument will be utilised to assess definite outcomes. The strategies, methods and approaches should be adapted to facilitate learning and assessment at the correct complexity relative to the level of module (Harden in Dent & Harden 2013:152).

Struyven *et al.* (2005:331) found that assessment methods and students' perceptions about evaluations play a significant role in the way they study. In the following sections, the researcher will provide an overview of various assessment methods and instruments and their uses.

2.6.1 Constructive alignment of assessments for learning

"Constructive alignment (CA) is an outcomes-based approach to teaching in which the learning outcomes that students are intended to achieve are defined before teaching takes place" (Biggs 2014:5). The model of constructive alignment is attributed to John Biggs (1996, 2003). Biggs also refers to CA as an approach to curriculum design which enhances the conditions for quality learning to take place. Furthermore, Biggs refers to CA as consisting of 2 aspects, 'constructive' and 'alignment'. Constructive refers to students

constructing meaning through learning activities, creating their own learning. Alignment refers to the instructor who creates a learning environment which supports the learning activities which leads to the students achieving the desired learning outcomes (Biggs 2003:54). The following figure 2.7 is a schematic representation of the elements of constructive alignment, as set out by Biggs (2003:54).

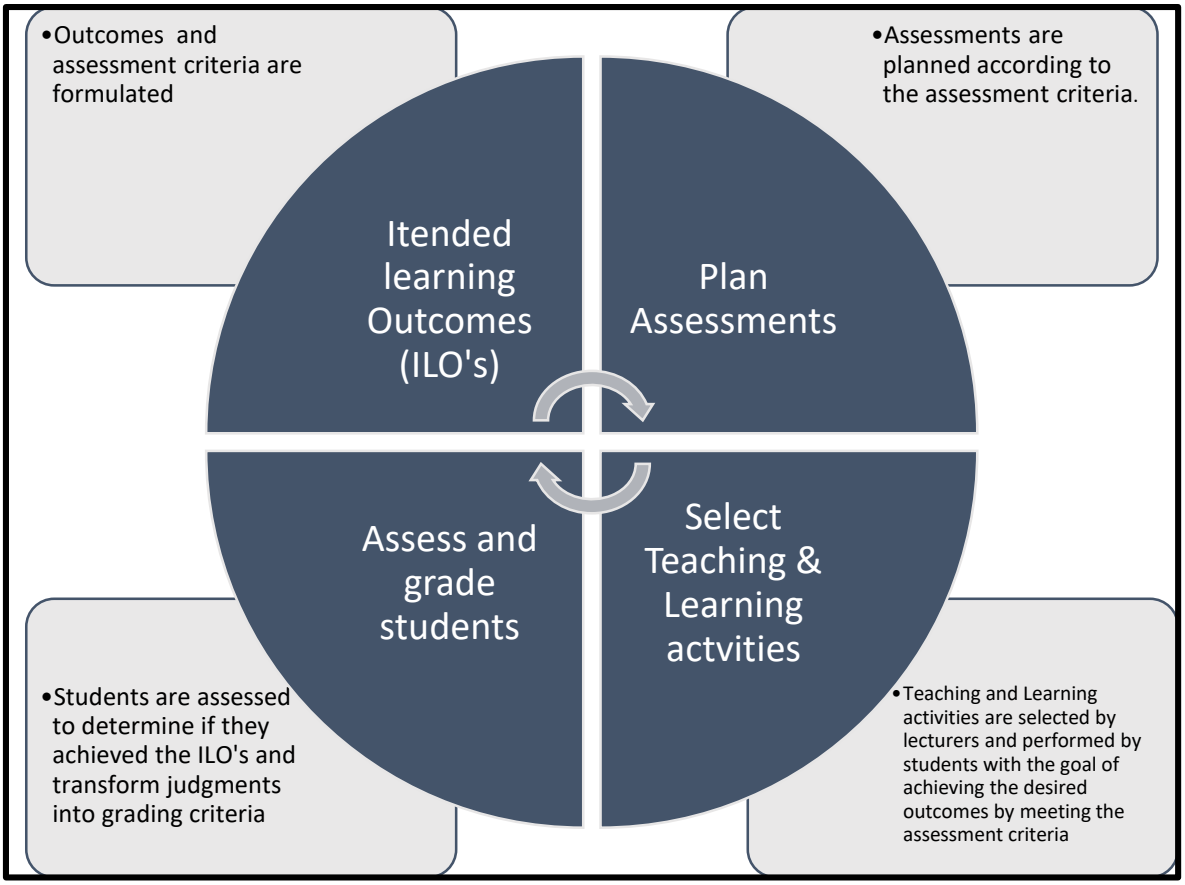


FIGURE 2.7: SCHEMATIC REPRESENTATION OF THE ELEMENTS OF CONSTRUCTIVE ALIGNMENT (Derived from Biggs 2003:54)

According to Biggs (2003:54) there are four stages in the design of constructively aligned teaching and assessment:

1. The intended learning outcomes should be described in the form of verbs (learning activities), the content and the context and standard of attainment should be specified.
2. Teaching/learning activities addressing the verbs should be used to create a learning environment where students are guided to achieve the intended outcome.
3. Assessments tasks, which also contain the verbs, should be used, as it will enable the educator to judge if and how accurate students' performances met the criteria.
4. Judgements can then be converted into standard grading criteria.

Furthermore, Biggs stated that the ILO's should contain verbs which address understanding at various levels. The levels of the outcomes are described by two taxonomies of verbs which are classified according to the cognitive level they assess (Biggs 2003:55). The two taxonomies mentioned by Biggs, are the SOLO (Structure of Observed Learning Outcome) taxonomy and Bloom's taxonomy and is explained in Figure 2.8 (SOLO taxonomy) and Figure 2.9 (Bloom taxonomy).

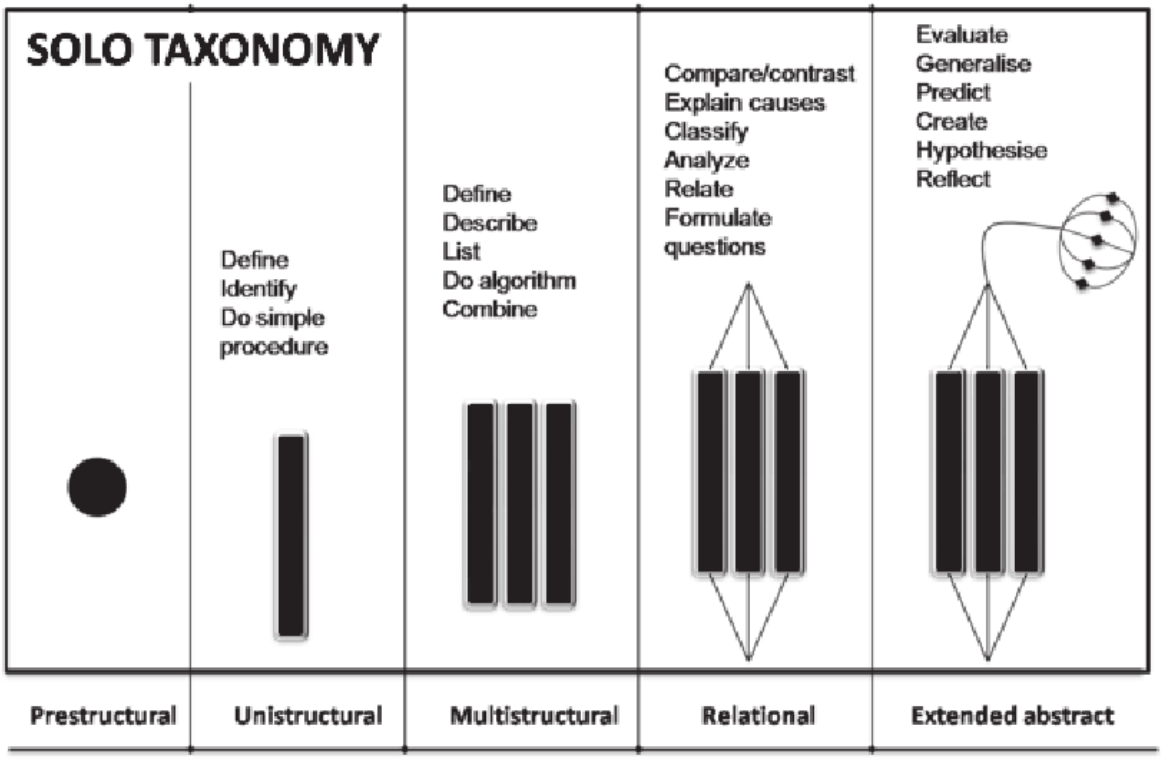


FIGURE 2.8 THE SUBGROUPS OF THE SOLO TAXONOMY AS DEFINED BY BIGGS AND COLLINS (1982:24) (Derived directly from Ilgüy, Ilgüy, Fişekçioğlu & Oktay 2014:1523)

The SOLO taxonomy classifies observed learning outcomes as prestructural, unistructural, multistructural, relational and extended abstract, according to the complexity of the underlying cognitive skills. SOLO taxonomy may be used to evaluate the quality of learning which takes place by assessing students' answers and performance in assessment. (Ilgüy *et al*. 2014:1521). The levels of competency in the SOLO taxonomy may be explained in the following manner:

- Pre-structural level – the student displays no knowledge about the topic
- Unistructural level – the student displays knowledge regarding one relevant aspect of the topic.
- Multistructural – the student displays knowledge regarding several independent aspects of the topic

- Relational level – the student displays the ability to integrate the knowledge regarding several independent aspects of the topic into a coherent structure, with each part, in relation to each other, contributing to the meaning of the subject
- Extended Abstract level – At this level the student is able to reconceptualise the coherent structure at the relational level, generalising it into a new subject or topic.
  (Biggs 1996:351)

In summary the SOLO taxonomy provides a systematic means for educators to effectively describe how a students' performance grows in complexity when mastering academic tasks. SOLO taxonomy also enables educators to structure curriculum objectives and formulate performance objectives hierarchically, from unsatisfactory to most acceptable, which may be converted to a grading system (Biggs 1996:360). The SOLO taxonomy may be effectively applied in constructive alignment, by aligning the assessments and teaching/learning activities in such a way, that the level of competence of the student can be evaluate with each assessment.

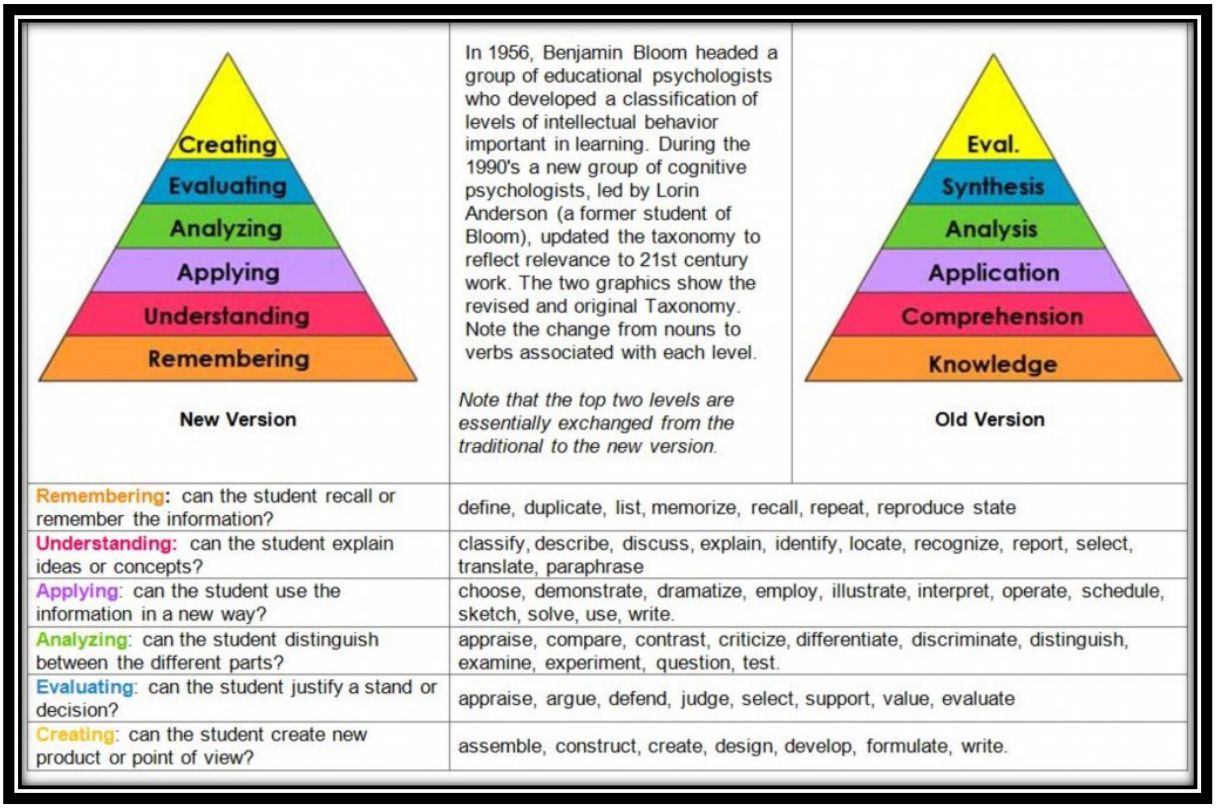


FIGURE 2.9 BLOOM'S REVISED TAXONOMY (Derived directly from Educorp 2015:Online)

Bloom's taxonomy was originally developed by Bloom, Engelhart, Furst, Hill and Krathwohl in 1956 (Bloom *et al.*: 1956) and later revised by Anderson, Krahwohl, Airasian, Cruikshank,

Mayer, Pintrich, Raths & Wittrock in 2001 (Anderson *et al.*:2001). In summary, the original Bloom's Taxonomy consisted of six levels, with subcategories, which were organised in a cumulative hierarchical framework, where one achievement was a prerequisite in order to achieve the next more complex skill or ability. Bloom's original taxonomy supplied many examples of test items for each cognitive level, which emphasised the assessment of learning (Krahwohl 2002:218).

The revised taxonomy, The Taxonomy of Educational Objectives, is a framework for categorising educational goals, objectives and standards. The revised version consists of a two-dimensional structure: Knowledge and Cognitive Processes. The knowledge dimension resembles the subcategories of the original Knowledge category. The Cognitive Process dimension resembles the six levels of Bloom's taxonomy, but the levels were renamed (cf. figure 2.8) (Krahwohl 2002:218).

According to Krahwohl (2002:218) the revised taxonomy table (cf. Figure 2.9) may be used to classify objectives, activities and assessments in order to provide a clear, defined and visual representation of the selected module or course and to assess the curriculum alignment and educational opportunities.

Another factor which is considered when conceptualising ILO's for constructive alignment is the Higher Education Qualifications Framework (HEQF) which is implemented by the Council of Higher Education (CHE), in compliance with the Higher Education Act (no. 101 of 1997) and the Higher Education Amendment Act (no. 39 of 2008). The HEQF assigns the CHE with responsibility to develop standards for all higher education qualifications. The CHE in turn developed the National Qualifications Framework (NQF), which contains level descriptors NQF levels 1 to 8 that describe generic outcomes for qualifications pertaining to each level. (CHE 2011:4). The NQF level descriptors are enforced by the South African Qualifications Authority (SAQA) and detailed in the SAQA Level Descriptors for the South African National Qualifications Framework (SAQA:2012). Each level descriptor describes "the learning achievement expected at a particular level of the NQF and provides a broad indication of learning achievements or outcomes that are appropriate to a qualification at that level" (SAQA 2014:4). The following table 2.3 is a summary of qualifications at each NQF level in higher education.

TABLE 2.3: NQF LEVEL DESCRIPTORS, QUALIFICATIONS AND ACADEMIC YEAR LEVELS IN HIGHER EDUCATION (Derived from SAQA 2017:Online)

NQF level	Qualification	Academic Year level in Higher Education (undergraduate only)
5	Higher Certificate	1
6	Advanced Certificate Diploma	2
7	Bachelor's Degree Advanced Diploma	3
8	Bachelor Honours Degree Postgraduate Diploma Bachelor's degree	4
9	Master's Degree Master's Degree (Professional)	
10	Doctoral Degree Doctoral Degree (Professional)	

At the NWU School of Pharmacy, the constructive alignment of the fourth year of the B.Pharm curriculum constitutes developing ELO's/ILO's at NQF level 8 and in accordance with the SAPC ELO's. Teaching/learning activities and assessments are then developed implementing the guidelines in the NQF level descriptors, Bloom's taxonomy and SOLO taxonomy. The following Table 2.4 is an excerpt regarding the NQF 8 level descriptor, which is relevant to this particular study (SAQA 2012:10). Information regarding the development and alignment of the NWU B.Pharm curriculum is further discussed in point 2.9.

TABLE 2.4: NQF EIGHT LEVEL DESCRIPTOR (Derived directly from SAQA 2012:10)

29. NQF Level Eight

a. Scope of knowledge, in respect of which a learner is able to demonstrate knowledge of and engagement in an area at the forefront of a field, discipline or practice; an understanding of the theories, research methodologies, methods and techniques relevant to the field, discipline or practice; and an understanding of how to apply such knowledge in a particular context.
b. Knowledge literacy, in respect of which a learner is able to demonstrate the ability to interrogate multiple sources of knowledge in an area of specialisation and to evaluate knowledge and processes of knowledge production.
c. Method and procedure, in respect of which a learner is able to demonstrate an understanding of the complexities and uncertainties of selecting, applying or transferring appropriate standard procedures, processes or techniques to unfamiliar problems in a specialised field, discipline or practice.
d. Problem solving, in respect of which a learner is able to demonstrate the ability to use a range of specialised skills to identify, analyse and address complex or abstract problems drawing systematically on the body of knowledge and methods appropriate to a field, discipline or practice.
e. Ethics and professional practice, in respect of which a learner is able to demonstrate the ability to identify and address ethical issues based on critical reflection on the suitability of different ethical value systems to specific contexts.
f. Accessing, processing and managing information, in respect of which a learner is able to demonstrate the ability to critically review information gathering, synthesis of data, evaluation and management processes in specialised contexts in order to develop creative responses to problems and issues.
g. Producing and communicating information, in respect of which a learner is able to demonstrate the ability to present and communicate academic, professional or occupational ideas and texts effectively to a range of audiences, offering creative insights, rigorous interpretations and solutions to problems and issues appropriate to the context.
h. Context and systems, in respect of which a learner is able to demonstrate the ability to operate effectively within a system, or manage a system based on an understanding of the roles and relationships between elements within the system.
i. Management of learning, in respect of which a learner is able to demonstrate the ability to apply, in a self-critical manner, learning strategies which effectively address his or her professional and ongoing learning needs and the professional and ongoing learning needs of others.
j. Accountability, in respect of which a learner is able to demonstrate the ability to take full responsibility for his or her work, decision-making and use of resources, and full accountability for the decisions and actions of others where appropriate.

2.6.2 Traditional and alternative assessment

When analysing traditional assessment, the core principle is that the knowledge in the curriculum drives the assessment. First the content of the curriculum is determined, after which the curriculum is designed. Assessment is the tool of testing if the student acquired the knowledge in the curriculum. Traditional assessment focuses on the content and not on the application of the content. When looking at alternative assessment, the opposite is true. Alternative assessment is implemented in order to test the ability of students to competently use and apply information in a range of different settings (Dent & Harden 2009:4).

Savickiené (2014:28) emphasises that alternative assessment methods can be implemented in two ways. The first is to utilize a unique new assessment method and the second is to use a familiar assessment method in a new way. Savickiené (2014:28) also elaborated that alternative assessment should be used to enhance the effective measurement of learning achievements and not to introduce something new that does not have any purpose. The author further states that innovative or alternative assessment should be meaningful and contribute to student learning.

The underlying principles in traditional assessment methods are restricted to the knowledge of the students. In surface learning, assessment is all about what the student knows of the content, is usually the prerogative of the teacher and not reflective of goals and is done to rate and judge students. Traditional assessment is also founded on the principle of an acceptable presentation that reflects adequate knowledge of the student. In traditional assessment, it is assessed if the student's knowledge is above or below the acceptable presentation (Le Roux 2004:58).

Savickiené (2014:28) supplies factors that should be taken into account when intending to utilise alternative assessment methods. According to the author, the educator should take students' work load into account and if introducing a new assessment method, would add to the work load and if it is justifiable with regards to its meaningfulness. Educators should present new assessment methods in the appropriate way in order to ensure that students experience it positively. Alternative assessment methods should be aligned with assessment criteria and should lead to the valid AoL achievements and be explained to students; this will lead students to believe that they will participate in consistent and fair assessment. The educator should be well educated in the new method before employing it and students should be adequately motivated to participate in the new methods by communicating expectations clearly.

In summary, assessment methods can be applied in a traditional or alternative manner, either enhancing surface or deep learning. It is evident from the literature that a clear, defined purpose should be the foundation of any assessment method. Various assessment methods can be implemented in such a way that it can create continuous learning experiences.

2.6.3 Assessment methods and instruments

Assessment methods can vary from written to oral exams, to practical exams. Assessment methods merely describe the way in which the student will be assessed (cf. Figure 2.2). Savickiené (2014:28) states that a reasonably selected assessment method is crucial when the aim is to collect objective information about learning successes. A study done by Bevitt (2015:112) found that although students experienced the impact of reflective assessment positively, almost all the participants indicated that they found it somewhat difficult or challenging to get used to new assessment methods. It is clear from the research above that educators should carefully consider certain criteria before employing a new assessment method.

Criteria for selecting assessment methods are classified by Savickiené (2014:28) into the following categories:

- **Learning outcomes and assessment criteria of learning achievements.** Assessment methods should reflect the learning outcomes or assessment criteria. In assessments where the assessment does relate to learning outcomes and assessment criteria, assessment is consistent and teaching and learning are viewed by students as transparent. If there is no relation, it could lead to students' learning superficially (surface learning).
- **Teaching and learning methods.** Assessment methods should reflect the teaching and learning methods in the classroom and educators should make a deliberate attempt to align these methods.
- **Variety of assessment methods.** Students' strengths in learning differ; therefore, applying various assessment methods in different assessments enables the educator to have a more objective measurement of students' learning outcome achievements. By varying assessment methods, the educator considers the different learning needs of students. Different learning outcomes is best evaluated by using diverse methods.
- **The type of assessment.** Assessment types are classified into different categories. For data recording there are formal and informal assessment. Summative and formative assessment are classified according to purpose. For validation purposes, there are criterion and norm referenced assessment. According to Bond (1996:1) Criterion referenced assessment establishes students' knowledge and skills according to criteria, and report how students perform in relation to a pre-determined performance level on

a specific set of outcomes. Norm referenced assessments classifies students according to their scores and requires the assessment to be taken by a representative group of students (norm group) prior to its publication. The scores of the students who take the test after publication is compared to the scores of the norm group. Assessment by teachers and students are classified according to subjects and according to the number of students, assessment can be done of individual or group work. Various and most of the assessment methods can be applied in different types of assessment, but it is preferable that the most dominant methods are used regarding the assessment type.

- **Students' knowledge of assessment methods.** Students should be exposed to the assessment methods before assessments are undertaken. It is important to discuss methods and allow students to gain experience by using similar assessment methods in the classroom, and introduce students to the requirements of each assessment method.
- **The size of the group.** Larger groups pose challenges regarding time spent on assessment and feedback. The size of the group has a considerable impact on the assessment method used; the educator will most likely chose methods which are the least time consuming. This challenge may be overcome when students are divided into smaller groups and complete tasks together for assessment.

According to Le Roux (2004:62), assessment instruments represent a means of making teachers' assessment methods more practical, consistent and efficient. These instruments will provide a way in which the teacher can assess every learner that took part in the same assessment similarly. In an oral exam, the teacher would have a list of questions and a memorandum with answers that are satisfactory in measuring the students' knowledge (Le Roux 2004:62). Assessment instruments or tools are physical parts (form, test, rubric, checklist, portfolio etc.) used to gather physical data during an assessment method, for each outcome and is the product completed by students for the purpose of assessment. Definite criteria should be used to give the assignment to students and the same criteria should be used to assess their performance (Le Roux 2004:62).

TABLE 2.5: ASSESSMENT METHODS AND INSTRUMENTS AS USED WITHIN TRADITIONAL AND/OR ALTERNATIVE ASSESSMENT (Adjusted table derived directly from Le Roux 2004:62)

ASSESSMENT METHOD	TRADITIONAL ASSESSMENT	ALTERNATIVE ASSESSMENT
Portfolios	x	x
Work sheets	x	x
Journals (Diaries)	x	x
Demonstrations		x
Presentations		x
Practical skills tasks (during practical periods)		x
Big assessment tests (1-3 hour papers under examination conditions, equal to semester tests)	x	x
Big class test (20-100 marks, for example those written during test periods, smaller than big assessment tests)	x	x
Small class tests (5-10 marks, during contact sessions, contributes to participation mark)	x	x
Small class tests (5-10 marks, during contact sessions, which doesn't contributes to participation mark)	x	x
Oral assessments	x	x
Multiple choice tests (on multiple choice cards or on eFundi)	x	x
Big theoretical assignments (Essays, referents)	x	x
Practical reports		x
Project work		x
Debates		x
Open book exams in a venue under examination conditions	x	x
Open book exams in the form of "take home" papers (take-home exam)	x	x
Simulation assessments		x
Observed/Objective Structured Clinical Exam (OSCE)		x

Table 2.5 illustrate that different methods and instruments of assessment are allocated to either traditional or alternative assessment, or to both. In summary, when applying various assessment methods, the educator should have a clear understanding of the uniqueness of methods that will be employed and the method of assessment should relate to the purpose (Savickiené 2014:29). Lecturers must clarify their expectations of what students should be able to do with what they have learned in the module precisely and openly.

The assessment instrument used to gather physical data from the assessment method should be appropriate. Assessment should be created to motivate students to learn. Assessment of a module should analyse if the expectations set by the module and teacher are met by the student and should evaluate if students could perform effectively in real-life situations (Harden in Dent & Harden 2013:152).

2.7 EFFECTS OF ASSESSMENT ON LEARNING

This section aims to explore various studies on the learning effects of assessment. Earlier studies by Snyder (1971) and Miller and Parlett (1974) found that assessment influenced students more than teaching. This is later supported by Biggs and Tang (2011:197) who state that the method and focus of students' learning are in a major way determined by how they expect to be assessed (cf. Figure 2.2). According to Dochy, Segers, Gijbels and Struyven in Boud and Falchikov (2007:90) the function of the assessment, summative or formative, also determines the level of effect it has on learning. Students' approach to learning, surface memorisation or deep understanding, depends on the assessment methods which is used (Dochy *et al.* in Boud and Falchikov 2007:90)

Dochy *et al.* in Boud and Falchikov (2007:89) classified the learning effects of assessment as pre-, post- and pure assessment learning effects. Pre-assessment learning effects impact learning before assessment is undertaken, post-assessment effects influence students learning after assessments and pure assessment learning affects impact during learning.

The pre-assessment effects, which occurs before assessment takes place, and involves the phenomenon that students adjust their learning behaviour according to how they expect to be assessed. Post-assessment effects involve student reflection on their learning outcomes and processes after receiving feedback of assessments. The pure assessment effects constitute what students learn during taking assessments, as tasks often require students to reorganise learned knowledge an order to solve new problems and link related aspects that they didn't notice while studying. Pre-and post-assessment effects have a direct effect on learning behaviour, while pure assessment-effect may provide for learning, but is dependent on self-feedback as a form of post-assessment effect. (Dochy *et al*. in Boud and Falchikov 2007:90). It is evident that the various assessment functions and methods

Biggs and Tang (2011:197) describe the surface approach as the learning activities of the student who only studies enough to fulfil the minimum requirements of a module or programme and ultimately passes the assessments within the module. The surface learning approach relies on the minimum cognitive effort, where the student only memorises facts without understanding them (Biggs & Tang 2011:24).

According to Biggs and Tang, deep learning takes place when students approach subject matter with the intent to know and understand it. If the student deems the content

important and intends to find meaning in the content, higher cognitive activity manifests when working through the subject matter. This higher cognitive activity leads to the student studying to understand the underlying knowledge foundation, make connections between the details in the content and finally see content as part of a holistic picture (Biggs & Tang 2011:26).

According to Ali and Khan (2016:192), deep learners combine new and pre-existing knowledge to acquire a deeper understanding of the subject while surface learners only aim to learn the sections of the content which they assume may be presented in assessment. The same researchers also found that surface learning may be associated with excessive workload and minimum independence in learning, while deep learning is linked to good teaching methods, adequate feedback and the clear explanation of assessment expectations. Furthermore, the authors state that deep learners incorporate recently acquired and previously gained knowledge more effectively, which leads them to have a superior understanding of the subject (Ali & Khan 2016:161).

Asikainen *et al.* (2013:215) performed a qualitative study on the relationship between student learning process, study success and the nature of assessment. In this study they found that high achievers in one course not only studied but also understood the content of the module, displaying deep learning methods. Low achievers were found to learn only a little and were unmotivated, although some displayed deep learning but poor time management skills.

A study done by Ruohoniemi, Parpala, Lindblom-Ylänne and Katajavuori (2010:288) found that some students who perform poorly, had a deep approach to learning but poor time management and unorganised studying approaches, which lead to a heavy workload. Asikainen *et al.* (2013:216) concludes that a deep learning approach does not in itself guarantee success, and that students need to approach their studies organised and acquire good time management skills.

Biggs and Tang (2011:16) and Boud and Falchikov (2006:411) found that if assessment is aligned with the learning outcomes and teaching activities, and is conducted by using the appropriate assessment methods and tools, students' study approaches and methods may be directed in such a way that deep, meaningful learning takes place. Nijhuis, Segers and Gijselaers (2005:412) found that students' perceptions of the clarity of course objectives, appropriateness of the workload and the usefulness of the content had an enormous impact

on their learning strategies. When students' perceptions of these three elements were negative, they tend to use a surface learning approach to learning.

In a study done by Gijbels and Dochy (2006:408), similar findings were recorded. The researchers found that students' approaches to learning are influenced by workload and perceived problems in the learning environment, such as inadequate feedback and a lack of structure. The results revealed a relationship between heavy workload and restricted learning and surface learning, and a direct relationship between adequate teaching, defined goals, freedom in learning and an increase in deep learning.

Educator's attitudes and actions while presenting a module play a noteworthy role in motivating students to employ a deep learning approach. If the educator is teaching content in an unsystematic, partial way, not focusing on the principle of forming ideas and structure and assess students only for memorising facts, they contribute to this learning approach. If teachers explain the relevance of work with regards to the big picture and highlight connections between details, they stimulate deep learning (Biggs & Tang 2011:26).

Ali and Khan (2016:192) found that continuous formative assessment combined with constructive feedback may aid students in embarking on deeper learning. Asikainen *et al.* (2013:215) state that if educators do not realise that assessment is an essential part of teaching that greatly influences student learning and view assessment as separate from teaching, there will be a contradiction between the grades students achieve and the quality of learning.

Gijbles and Dochy (2006:402) found in their study that students may shift between surface and deep learning approaches, depending on the assessment method used. Assessment done to encourage deep learning should focus on the understanding of the content. Assessment should comprise and be an effective reflection of what is expected by the course ELOs (Biggs & Tang 2011:25). Asikainen *et al.* (2013:216) documented similar findings in their study, affirming the importance of assessment methods in supporting deep learning. They also found that it is not only the nature of assessment that affects learning approaches, but also students' intentions, study motivation and self-discipline.

A study in 2010, performed on undergraduate students at the University Kebangsaan in Malaysia, by Lee *et al.* (2010:29) showed that the students' schooling experience affected their learning behaviour. The authors also determined that not providing feedback to

students on their assignments created the problem that students could not learn from the assessment and that students were merely focussed on being graded rather than on the acquirement of knowledge. Asikainen *et al.* (2013:216) concluded that it is important to explore assessment in various forms, as course grades do not necessarily reflect information regarding the quality of students' learning outcomes.

With regards to the learning effects of summative assessment (LESA), Cilliers *et al.* (2010b:51) developed a model of the pre-assessment learning effects of summative assessment. Figure 2.10 is a graphical representation of this model.

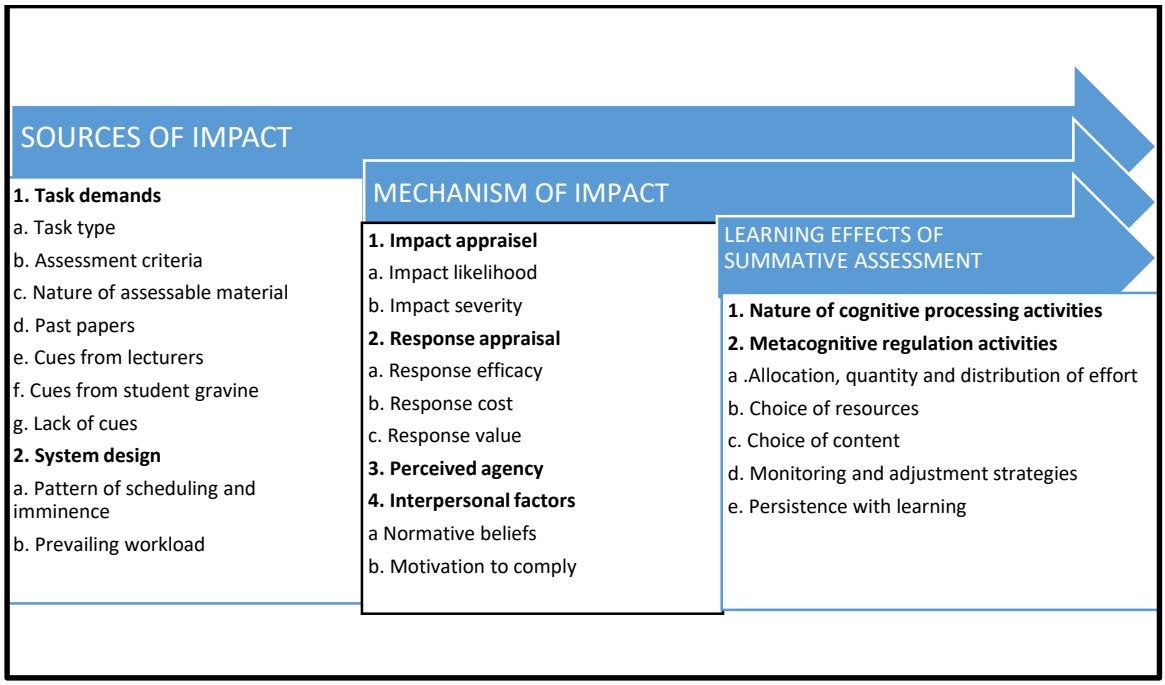


FIGURE 2.10: A MODEL OF PRE-ASSESSMENT LEARNING EFFECTS OF SUMMATIVE ASSESSMENT (Derived directly from Cilliers *et al*. 2012:44)

Cilliers *et al.* (2012) derived from their studies (Cilliers *et al.* 2010b & 2012) that task demands including task type, assessment criteria, the nature of assessable material, the cues or lack of cues from lecturers and other students and past papers, all feature as sources of impact on LESA. Other sources resulting from the institutions' system design, which evidently impact the learning effects of summative assessment, include the scheduling and imminence of assessments as well as the prevailing workload on students. The researchers also classified LESA into two categories namely, the Nature of Cognitive Processing Activities and Metacognitive Regulation Activities, and then proceeded to link the sources of impact and LESA after a data analysis. The following Table 2.6 is a graphical representation of Cilliers *et al.* (2012:45) summary of the interrelationships between impact sources and learning effect factors.

TABLE 2.6: LINKING THE SOURCES OF IMPACT AND LESA (Derived directly from Cilliers *et al.* 2012:45) *
*** Where a source of impact or source factor (SF) and LESA or effect factor (EF) were found to be related, it was indicated with a "x".**

SOURCES OF IMPACT (SF)		LEARNING EFFECTS OF SUMMATIVE ASSESSMENT (EF)					
		Nature of Cognitive Processing Activities (EF1)	Metacognitive Regulation Activities (EF2)				
			Allocation, quantity and distribution of effort (EF2a)	Choice of resources (EF2b)	Choice of Content (EF2c)	Monitoring and adjustment strategies (EF2d)	Persistence with learning (EF2e)
Task Demands (SF1)	Task type (SF1a)	X	X	X	X	X	
	Assessment criteria (SF1b)	X	X	X			
	Nature of assessable material (SF1c)	X	X	X	X		
	Past papers (SF1d)	X		X	X	X	
	Cues from lecturers (SF1e)	X	X	X	X		
	Cues from the student grapevine (SF1f)	X	X	X	X	X	
	Lack of cues (SF1g)			X	X	X	X
System design (SF2)	Pattern of scheduling and imminence (SF2a)	X	X	X	X	X	X
	Prevailing workload (SF2b)	X	X	X	X	X	X

In Table 2.6, evidently, multiple learning effects or effect factors (EF) were influenced by each impact source or source factor (SF). Task type influenced all learning effects with the exception of persistence with learning. Assessment criteria influenced the nature of students cognitive processing activities, learning effort and choice of resources. The nature of

assessable material and cues from lecturers influenced all the effect factors except monitoring and adjustment strategies and learning persistence. Workload and the pattern of assessment scheduling and assessment proximity influenced all learning effect factors in summative assessment (Cilliers *et al.* 2012:45).

In summary, assessment has a multiple profound effects on learning, and the effects can take affect before, during and after learning. The effects on learning vary and are impacted by different sources, depending on the function and method of assessment (Dochy *et al*. in Boud and Falchikov 2007:90 & Cilliers *et al.* 2012:45).

2.8 STUDENT PERFORMANCE AS A RESULT OF ASSESSMENT ANXIETY

Zeidner (1998:17) defines test anxiety as a range of "phenomenological, physiological and behavioural responses that accompany concern about possible negative consequences or failure on an exam or similar evaluative situation". There have been many theoretical models developed, endeavouring to explain the cause of test anxiety, but until now no single explanatory model that accounts for all of the factors which may worsen test anxiety (Zeidner 1998:18). The reader may ask why exploring test anxiety is significant in this particular study.

Hembree (1988:73) found that test anxiety is directly related to students' fears of negative evaluation, aversion to test taking and less effective study skills. The author also found that performance in tests significantly improved when a student's test anxiety is reduced. Chapell, Blanding, Silverstein, Takahashi, Newman, Gubi and McCann (2005:271) found in a study on undergraduate students that anxiety is associated with reduced student performance, although it is not the only variable that affects academic achievement (Chapell *et al.* 2005:273). Chang and Lu (2007:549) also found that unmanaged academic anxiety may have negative effects on students.

Although Von der Embse and Witmer (2014:135) state that additional research is needed for determining the relationship between test anxiety and low performance, a few researchers have already done investigations into this phenomenon. Putwain (2008:11) found in his study that test anxiety may be responsible for 7% of discrepancies in test performance. In a study done by Vitasari, Wahab, Othman, Herawan and Sinnaduarai (2010:495) regarding the relationship between study anxiety and academic performance, they found that students with high anxiety levels revealed low academic performance. Von der Embse and Hasson (2012:183) found that test anxiety had a negative impact on test scores and that 4-15% of variances in test scores could be attributed to test anxiety.

In 2016 Putwain, Daly, Chamberlain and Sadreddini (2016:1818) conducted a study in order to explore the relationship between academic buoyancy and test anxiety. Although they found that the negative impact test anxiety had on task focus was weaker in highly buoyant learners, they still found that worry affected academic performance. According to Rodger, Murray and Cummings (2007:92) the relationship between anxiety and achievement is complex, and interactions between various factors such as cognitive interference, motivation and information processing deficits. From the above literature it is clear that anxiety has a significant negative impact on academic performance.

There are many reasons for test anxiety. In a study done on pharmacy students in 2006 by Sansgiry and Sail (2006:5) the authors found that the majority of their participants experienced moderate text anxiety and that there was a positive relationship between test anxiety and students' perceptions of course load. Mani (2010:109) also concluded that students' perceptions of course load and time management had an effect on assessment anxiety. Both of the above mentioned studies also found that this relationship between course load perception and test anxiety grew stronger as students progressed from one year to the next. In a study conducted on medical students, Sohail (2013:69) found that stress of course workload, module content and frequent assessments were some of the main factors contributing to the overall high levels of stress in participants. Sansgiry and Sail (2006:5) found that with better time management, test anxiety was reduced. In another study by Sansgiry, Bhosle and Sail (2006:6), the authors found that students who perceived the course load of the curriculum as overwhelming had increased stress and that students struggled to prepare for examinations, which lead to poor performance. The authors also imply that if students do not have effective study strategies when course load is perceived as excessive, they will study for long periods of time for exams, which can lead to exertion and poor performance.

In 1960, Sarason and Palola (1960:185) found that more difficult tasks in combination with highly motivating instructions had a negative effect on performance in highly anxious learners. Hong (1999:442) found that students' perceptions of test difficulty and high actual test difficulty increased worry and test anxiety. In a more recent study, Sommer and Arendasy (2016:2) had similar findings, namely that test anxiety was more prevalent in tests with an intermediate to higher difficulty, than in less difficult tests. After analysing the literature, the researcher concludes that there is a positive relationship between test anxiety and module content difficulty. Sparfeldt, Rost, Baumeister and Christ (2013:201) conclude

that levels of test-anxiety varies, depending on the subject being evaluated and different assessment methods.

Von der Embse and Hasson (2014:183) found that anxiety increased in high-stakes tests. In a recent study done by Lotz and Sparfeldt (2017:399), it was found that test anxiety increased continuously during a semester and peaked shortly before exams. It is apparent from these studies that high-stakes assessment, or summative assessment, led to an increase in test anxiety, and also had a negative effect on performance (Von der Embse & Hasson 2014:183).

Sarason (1984:20) found that a lack of teacher clarity, transparency in achievement expectancies and feedback may cause anxiety. Mazer, McKenna-Buchanan, Quinlan and Titsworth (2014:163) concluded from their results that when lecturers are perceived by students as lacking in clarity and communication ability, students experience more negative emotions like anxiety and anger, which in turn leads to lower achievement. In a recent study, Bolkan (2016:160) states that when educators are unclear, they put extra cognitive burden on students and reduce time spent on meaningful resources, eventually leading to anxiety and poor performance. Mushtaq and Khan (2012:21) also found in their study that communication was the number one factor affecting student performance.

Rodger *et al.* (2007:101) conclude from their study that high clarity teaching had a positive effect on students' performance, regardless of their anxiety levels. It can be deduced from the literature above that, if teachers are unclear regarding their expectancies, students are more likely to experience anxiety and perform to lesser degree. Chang and Lu (2007:549) summarise that unmanaged academic anxiety may have negative results on students. Sohail (2013:68) found that when students are subject to increased stress sources and higher stress levels, they are more likely to have poor academic achievements.

2.9 ASSESSMENT AT THE NWU SCHOOL OF PHARMACY

In the following section, the researcher aims to inform the reader of the assessment principles and practices at the NWU School of Pharmacy.
This will orientate the reader to contextualise the study within the setting it was done.

2.9.1 The NWU assessment and moderation policy

All academic policies at the NWU are guided by SAQA. The NWU academic policy, relevant to this study is the Assessment and Moderation Policy (NWU 2011:Online). The following

table, Table 2.7, lists the leading principles of the assessment and moderation policy of the NWU:

TABLE 2.7: LEADING PRINCIPLES OF THE ASSESSMENT AND MODERATION POLICY AT THE NWU (Directly derived from NWU 2011:Online)

• Programme and module outcomes are formulated clearly and correctly communicated to students and guide all assessment practices at the NWU. • Assessment instruments at the NWU are appropriate, valid and reliable in measuring the stated programme and module outcomes. • Assessment instruments at the NWU adhere to the requirements of the relevant National Qualifications Framework (NQF) level descriptor. • Assessment criteria are formulated clearly and correctly and are communicated to students explicitly • At least one opportunity for integrated assessment, where the main objective and key purpose of the programme is assessed, is included in the assessment activities for all programmes • A memorandum with correct and/or examples of model answers is compiled for every formal formative and every summative assessment activity undertaken by students. • Co-assessors and/or markers utilise the memorandums for formal formative and summative • Assessment activities effectively, as monitored by means of moderation activities described in this Policy. • Student assessment records at the NWU are reliable, safe and accessible to programme and module co-ordinators, lecturers who offer modules in the programme, administrative officials, and affected students. • Prior learning is recognised at the NWU as described in the Policy for the Recognition of Prior Learning. • Formative or continuous assessment serves as a monitoring instrument to enable students to determine their progress in the learning process and to enable lecturers to determine the effectiveness of their teaching, in order that adjustments can be made in time to make the teaching and learning process more effective.

The leading principles in the assessment and moderation policy of the NWU lay the foundation of the assessment and moderation policy. Table 2.8 contains the actual assessment and moderation policy of the NWU**.**

TABLE 2.8: THE ASSESSMENT AND MODERATION POLICY OF THE NWU (Directly derived from NWU 2011:Online)

Policy

1.1 Informal formative assessment opportunities are included in as many as possible contact sessions. Feedback from informal formative assessment opportunities in contact sessions are utilised by the lecturer for improvement of the teaching.

1.2 The number of formal formative assessment opportunities per module depends on the module credits, and should correspond with the following guidelines:

- 8 credit modules: 2-3 formal formative assessment opportunities per module
- 12 credit modules: 2-3 formal formative assessment opportunities per module
- 16 credit modules: 3-4 formal formative assessment opportunities per module
- 24 and 32 credit modules: 4-5 formal formative assessment opportunities per module

1.3 Memorandums with correct responses and/or examples of model answers are compiled for all formal formative assessment activities.

1.4 Feedback and marks for formal formative assessment opportunities are communicated to students within 15 working days, unless written permission is given by the dean and/or school director to extend the time.

1.5 Summative assessment in all modules is regulated by the General Academic Rules, specifically A.5.4.4. 6.6 For all written formal assessments (formative as well as summative) examiners and moderators are appointed according to the General Academic Rules.

1.6 The moderator's report covers the validity of the assessment instruments, performance of the students, standard of student competencies, reliability of the marking and any irregularities in terms of University/professional regulations.

1.7 Oral assessment, where additional proof of the competencies of a candidate is required for the sake of promotion, is conducted by panels which have been approved by the School Director, and/or Research Focus Area Director, and/or Dean.

1.8 Panels for oral assessment are thoroughly prepared for the assessment session by meetings in advance.

1.9 Oral assessments are conducted according to well-structured questions and assessment criteria (similar to a memorandum for written assessments).

1.10 Assessment of work-based or experiential learning takes place through co-operation between the University, the employer, the mentor and the student about the method, assessment and recognition after achievement of the outcomes

The assessment and moderation principles and policy of the NWU, as reflected above, lends itself to be supportive of the purpose of assessment as stated by Crooks (1988) according to Gijbels and Dochy (2006:401) in point 2.3 of this chapter. It is also based on solid assessment principles, as developed by Boud *et al.* (2010:2) and supports the qualities of good assessment, as suggested by Norcini *et al.* (2011:210) in point 2.4.

2.9.2 Constructive alignment and assessment: The NWU B.Pharm curriculum

The NWU follows an OBE strategy. Harden (in Dent & Harden 2013:151) states that when planning an OBE curriculum, there should be a clear explanation of the attributes or competencies that the graduates should possess when completing the course. The attributes and competencies that lay the foundation for any B.Pharm degree are determined by the SAPC. The SAPC is the statutory body regulating the education and practice of pharmacists and pharmacy personnel in South Africa. The attributes and competencies of

pharmacists are provided by the SAPC in the form of ELO's and assessment criteria for al B.Pharm curricula in South Africa. The NWU B.Pharm curriculum ELO's and assessment criteria were developed in light of the ELO's of the SAPC. Each module in the B.Pharm degree is aligned to address one or more SAPC ELO's.

The NWU B.Pharm fourth year ELO's is also constructed regarding the guidelines of SAQA's NQF level descriptor 8 and Bloom's taxonomy (cf. 2.6.1). Table 2.9 is a summary of the SAPC ELO's and the alignment of the five main modules in the B.Pharm degree, in terms of those ELO's.

TABLE 2.9: ALLIGNMENT OF NWU B.PHARM MODULES AGAINST SAPC ELO'S (Derived directly from SAQA 2015A:Online; SAQA 2015B:Online, RSA 2014:29)

	MODULES				
SAPC ELO	**Pharmaceutical Chemistry (FCHG)**	**Pharmaceutics (FMSG)**	**Pharmacy Practice (FPKG)**	**Clinical Pharmacy (FPFG)**	**Pharmacology (FKLG)**
ELO 1: *Integrate and apply foundational scientific principles and knowledge to pharmaceutical sciences (120 Credits)*	x	x	x	x	x
ELO 2: *Apply integrated knowledge of product development in the compounding, manufacturing, distribution and dispensing of pharmaceutical products (68 Credits)*	x	x			
ELO 3: *Compound, manipulate and prepare medication in compliance with Good Pharmacy Practice (GPP) rules, Good Manufacturing Practice (GMP) and/or Good Clinical Practice (GCP) guidelines (27 Credits)*	x	x			
ELO 4: *Manage the manufacture, packaging and registration of pharmaceutical products in compliance with GMP and GCP (18 Credits)*		x			
ELO 5: *Manage the logistics of the selection, procurement, storage, distribution and disposal of pharmaceutical products (18 Credits)*	x	x	x		
ELO 6: *Dispense medication and insure optimal care for the patient in compliance with GPP, and, where applicable, GCP (45 Credits)*			x	x	x
ELO 7: *Apply a pharmaceutical care management approach to ensure rational medicine use (49 Credits)*			x	x	x
ELO 8: *Initiate an/or modify therapy, where appropriate, within the scope of practice of a pharmacist and in accordance with GPP and GCP, where applicable (32 Credits)*			x	x	x
ELO 9: *Promote public health (18 Credits)*			x	x	
ELO 10: *Integrate and apply management principles in the practice of pharmacy (18 Credits)*			x		
ELO 11: *Participate in research (27 Credits)*	x	x	x	x	x

Figure 2.11 is an excerpt out of the 2017 yearbook of NWU Faculty of Health Sciences, depicting the B.Pharm Curriculum. The focus of questions in this questionnaire was based on the year level four first semester modules, as the study was done at the end of the first semester in 2016.

Curriculum: Pharmacy

Qualification and programme code: 800 101; Curriculum code: G413P

YEAR LEVEL 1			YEAR LEVEL 2			YEAR LEVEL 3			YEAR LEVEL 4		
First semester			First semester			First semester			First semester		
Module-code	Type	Cr	Module-code	Type	Cr	Module-code	Type	Cr	Module-code	Type	Cr
AGLA111/ AGLE111#	A	-	CHEN213	X	8	FCHG312	H	12	FCHG412	H	16
CHEM111	X	12	FBCG211	H	8	FKLG312	H	16	FKLG412	H	16
FLPX113	X	12	FKLG212	H	16	FMSG312	H	16	FMSG412	H	16
FPKG112	H	12	FMSG212	H	16	FPFG312	H	16	FPFG412	H	16
FPKG113	H	12	FPFG211	H	16	FPKG313	H	16	FPKG414	H	16
MKPN111	X	12	FPKG211	H	16						
Total 1st semester		**60**	**Total 1st semester**		**80**	**Total 1st semester**		**76**	**Total 1st semester**		**80**
YEAR LEVEL 1			**YEAR LEVEL 2**			**YEAR LEVEL 3**			**YEAR LEVEL 4**		
Second semester			**Second semester**			**Second semester**			**Second semester**		
Module-code	Type	Cr	Module-code	Type	Cr	Module-code	Type	Cr	Module-code	Type	Cr
AGLA121/ AGLE121	X	12	FCHG222	H	12	FCHG322	H	16	FFSG421	H	24
CHEM121	X	12	FKLG222	H	16	FKLG322	H	16	FNPG421	H	32
FCAG122	H	12	FMSG223	H	16	FMSG322	H	16	WVPS321		12
FLPX123	X	12	FPFG221	H	8	FPFG322	H	16			
FPFG121	H	12	FPKG221	H	8	FPKG324	H	8			
			WVGW221	X	12						
Total 2nd semester		**60**	**Total 2nd semester**		**72**	**Total 2nd semester**		**72**	**Total 2nd semester**		**68**
Total Year Level 1		**120**	**Total Year Level 2**		**152**	**Total Year Level 3**		**148**	**Total Year Level 4**		**148**
Credit total of the Curriculum											568

FIGURE 2.11: THE B.PHARM CURRICULUM OUTLAY
(Derived directly from NWU 2017b:Online)

As well as aligning the B.Pharm Curriculum at the NWU with the ELO's of the SAPC, the NWU School of Pharmacy is also required to meet the educational requirements as set out in the SAPC GPES document (GPES) (RSA 2014). The curriculum in its current state is based on the principles as set out in the GPES 2014 document. In 2017, a new version of the GPES was published. Table 2.10 contains an excerpt of the minimum standards for assessment as set out in the GPES 2014.

TABLE 2.10: MINIMUM STANDARDS FOR ASSESSMENT
(Derived directly from RSA 2014:16)

MINIMUM STANDARDS FOR ASSESSMENT

1. Competency and outcome measurement and assessment systems and methods:

(a) must include the evaluation of cognitive learning, mastery of essential practice skills and the ability to use data and information in realistic problem-solving. Assessment must be formative and summative and include the following methods where appropriate:

- self-assessment;
- tutorial-based peer and tutor evaluation
- individualised process assessment (IPA)
- objectively structured clinical/practice examination (OSCE/OSPE);
- community-based education and services (COBES)
- integrated content examinations

Details of assessment methods listed

- **Self-and peer-assessment**
  In a self-evaluation exercise, the student must make value judgments about his own performance and that of his peers. Students must fill in an assessment form in which they rate their own strengths and weaknesses. A similar form must be completed for each of their peers in the group at the end of each theme.
- **Tutorial-based peer and tutor evaluation**
  Each student in a group must be evaluated by tutors and peers at the end of each learning unit in clinical reasoning/problem-solving skills, knowledge acquisition, interpersonal skills and self-directed learning abilities.
- **Individualised process assessment (IPA)**
  Part 1: Students must be presented with paper patient. Clinical reasoning process/problem-solving abilities, as well as the ability to generate relevant learning issues, must be assessed. Part 2: A modified oral examination where students must be assessed on their ability to search for and synthesise independently basic information pertinent to the paper case. In this way, self-directed learning abilities must be evaluated.
- **Objectively structured clinical/practice examination (OSCE/OSPE);**
  These examinations must be based on the practical sessions carried out during the year and assess the knowledge and skills of students.
- **Community-based education and services (COBES)**
  Knowledge and skills acquired during WIL periods must be assessed
- **Integrated content examinations**
  This examination must assess the students' abilities to integrate knowledge across the range of systems covered during a module, semester or academic year.

Note: Assessment and evaluation tools and procedures must include written memoranda with detailed written expected learning outcomes, assessment criteria and mark allocation.

2. Responsibilities of internal and external assessors/examiners/moderators

(a) Ensure the validity and quality of assessment methods, tools and procedures, guided by university policies. Internal assessors/examiners must be drawn mainly from the academic staff of pharmacy and related disciplines.

(b) External moderation must be used for exit level modules, excluding student research projects."

According to the SAQA documentation of the NWU B.Pharm degree (SAQA 2015a:Online), the following is required by learners during assessment: "Learners are expected, within the context of the pharmaceutical sciences and professional service and by means of the methods of integrated assessment), to be able to demonstrate and prove their ability of integrating and applying relevant, fundamental, scientific and professional knowledge, insight, skills and values in achieving specific and critical outcomes. "

The same document (SAQA 2015a:Online) sets the requirement that an integrated assessment approach is to be followed. The following Table 2.11 contains an excerpt from the SAQA qualifications document of the NWU B.Pharm degree, elaborating on the assessment principles of the NWU B.Pharm degree.

TABLE 2.11: ASSESSMENT PRINCIPLES OF THE NWU B.PHARM DEGREE (Derived directly from SAQA 2015a:Online)

Assessment in the NWU B.Pharm degree will be conducted in the following way:

"Integrated assessment (to ensure that the goal of the qualification has been achieved):

Integrated assessment of the ELO's is achieved by means of a variety of formative and summative techniques, including:

- Written and oral tests and examinations.
- Evaluation of group and individual projects and assignments.
- Case studies.
- Practical exposure to patients in clinics, hospitals and pharmacies.
- Practical examinations.
- Observation during exposure to the practice of pharmacy.
- Group discussions.
- Portfolios.
- Simulations.
- Work place assessments.

The emphasis is on continuous assessment throughout the programme.

It is evident when comparing the contents of Table 2.10 and Table 2.11 that the NWU B.Pharm assessment principles are based on the minimum standards for assessment as set out by the GPES 2014 (cf. Table 2.10).

Each module in the B.Pharm programme has its own assessment plan, supplied to students in each module's study guide. The following Table 2.12 depicts a summary of the assessment plan used in each module in the first semester of the B.Pharm fourth year, according to 2016 Study Guides and lecture materials.

TABLE 2.12: ASSESSMENT PLANS OF VARIOUS B.PHARM FOURTH YEAR MODULES (Derived directly from NWU 2016a:vi; NWU 2016b:viii; NWU 2016c:ix; NWU 2016d:vi; NWU 2016e:viii; NWU 2016f:6)
(Table continues on next page)

FCHG 412 – PHARMACEUTICAL CHEMISTRY IIIA	
MARK ALLOCATION	Participation mark 50% consisting of: • Assessments 80% • Practical exam 20% Exam mark 50% (NWU 2016a:vi)
INFORMAL ASSESSMENT OPPORTUNITIES (not contributing to participation mark)	Various (amount and format not stated) (NWU 2016a:vi)
FORMAL ASSESSMENT OPPORTUNITIES (contributing to participation mark)	4 assessment opportunities, consisting of long and/or multiple choice questions (NWU 2016a:vi)
SUMMATIVE ASSESSMENT OPPORTUNITIES	2 exam opportunities (NWU 2016a:vi)
ADDITIONAL INFORMATION TO STUDENTS	Assessor refers to formative assessment opportunities as a means of determining if they have insight in the module and have developed the skills required by the module. Assessor also mentions that the assessments will consist of 20% theory and 80% application as per Bloom levels (Bloom's Taxonomy) (NWU 2016a:vi)
FKLG 412 – PHARMACOLOGY V	
MARK ALLOCATION	Participation mark 50% consisting of: • Various formative assessments as participation • 3-4 formative assessments Exam mark 50% (NWU 2016b:viii)
INFORMALASSESSMENT OPPORTUNITIES (not contributing to participation mark)	Various (amount not stated) (NWU 2016b:viii)
FORMAL ASSESSMENT OPPORTUNITIES (contributing to participation mark)	3-4 assessment opportunities (NWU 2016b:viii)
SUMMATIVE ASSESSMENT OPPORTUNITIES	2 exam opportunities (NWU 2016b:viii)
ADDITIONAL INFORMATION TO STUDENTS	Students are required to participate in all formative assessment, even if not mark bearing. Exam admission dependent on participation in all activities. (NWU 2016b:viii)
FMSG 412 – PHARMACEUTICS IIIA	
MARK ALLOCATION	Participation mark 50% consisting of: • Formative assessment s (3) 60% • Class attendance & Participation (Group feedbacks/ Preparation/ Class work/ Tutorials) 20% • Practical component (Preparation/ Attendance/ Lab-work, etc.) 20% Exam mark 50% (NWU 2016c:ix)

INFORMAL ASSESSMENT OPPORTUNITIES (not contributing to participation mark)	Class attendance & Participation (Group feedbacks/ Preparation/ Class work/ Tutorials) (NWU 2016c:ix)
FORMAL ASSESSMENT OPPORTUNITIES (contributing to participation mark)	• 3 Formative assessments • Practical component (Preparation/ Attendance/ Lab-work, etc.) (NWU 2016c:ix)
SUMMATIVE ASSESSMENT OPPORTUNITIES	2 exam opportunities (NWU 2016c: ix)
ADDITIONAL INFORMATION TO STUDENTS	Specifies that students will be subject to 10 minute "tests" during contact sessions which may be written regularly to determine preparation. Assessments presented at a ratio of 20% knowledge and 80% application of knowledge according to Blooms taxonomy. Blooms taxonomy layout is also supplied in study guide (NWU 2016c:x, xi-xiv)
FPFG 412 – CLINICAL PHARMACY VI	
MARK ALLOCATION	Participation mark 50% consisting of: • 70% formative assessments • 20% Practical • 10% Participation (NWU 2016f:6) Examination 50% (NWU 2016d:vi)
INFORMAL ASSESSMENT OPPORTUNITIES (not contributing to participation mark)	Assignments in class – case studies and prescription evaluation (NWU 2016d:vi)
FORMAL ASSESSMENT OPPORTUNITIES (contributing to participation mark)	3 assessment opportunities (NWU 2016f:10)
SUMMATIVE ASSESSMENT OPPORTUNITIES	2 Examination opportunities (NWU 2016f:11)
ADDITIONAL INFORMATION TO STUDENTS	Module assessment criteria is supplied in study guide and introductory lesson (NWU 2016d:v) (NWU 2016f:23) NQF level of module and student abilities explained in introductory lesson. (NWU 2016f:14) Levels of questions according to Bloom's explained in introductory lesson (NWU 2016f:16)
FPKG 414 – MANAGEMENT IN THE PHARMACY PROFESSION	
MARK ALLOCATION	Participation mark 50% consisting of: • Weekly class/practical assessments (10): o iRAT o tRAT o Team application exercise • 3 Formative assessment opportunities Examination 50% (NWU 2016e:viii)
INFORMAL ASSESSMENT OPPORTUNITIES (not contributing to participation mark)	• Individual readiness assurance tests (iRAT) • Team readiness assurance tests (tRAT) • Team application exercise • Peer evaluation (NWU 2016e:viii)

FORMAL ASSESSMENT OPPORTUNITIES (contributing to participation mark)	• Individual readiness assurance tests (iRAT) • Team readiness assurance tests (tRAT) • Team application exercise • Peer evaluation • 3 assessment opportunities (NWU 2016e:viii)
SUMMATIVE ASSESSMENT OPPORTUNITIES	2 Examination opportunities (NWU 2016e:viii)
ADDITIONAL INFORMATION TO STUDENTS	Layout of class time, scheduling formative assessment activities (NWU 2016e:x)

In Table 2.12, an informal assessment opportunity, refers to assessments administered and feedback of these assessments supplied during the course of teaching/learning activities. The grades for informal assessments are not recorded (SAQA 2014:6). Formal assessments are usually assessments where the results are recorded towards the achievement of a module or qualification. (SAQA 2014:5). In the context of NWU modules, preparation tests are informal diagnostic assessments administered to students before a lecture session begins in order to identify what students already know about the content of the lecture (SAQA 2014:5). Small tests**,** in the context of this study refers to informal diagnostic assessments completed by students before or after lectures, for the purpose of identifying what students knows about the content of the lecture (SAQA 2014:5). A small test for the purpose of this mini-dissertation is a test grading less than 10 marks and does not contribute to the participation mark of the students.

According to the SAQA NWU B.Pharm qualification document, assessors of this course are academic personnel of the NWU who are appointed according to their “expertise and assessment ability”, for which the University provided tuition (SAQA 2015a:Online). The assessors and their qualifications at the NWU School of Pharmacy, assessing the fourth year first semester modules, are presented in Table 2.13.

TABLE 2.13: ASSESSSORS QUALIFICATIONS AND CURRENT STUDIES (AS IN 2016) OF B.PHARM FOURTH YEAR MODULES
(Derived directly from NWU 2017a:Online)

ASSESSOR	QUALIFICATION(S)	MODULE
Prof J.P. Petzer	B.Pharm, MSc (Pharmaceutical Chemistry), PhD (Pharmaceutical Chemistry)	FCHG 412 Pharmaceutical Chemistry
Mr P.D. Wolmarans	B.Pharm., M.Sc. (Pharmacology), *Ph.D in Pharmacology obtained end 2016	FKLG412 Pharmacology
Prof A.F. Marais	B.Pharm, MSc: Pharmaceutics, Ph.D. Pharmaceutics	FMSG 412 Pharmaceutics
Miss M.J Eksteen	B.Pharm, M.Pharm (Pharmacy Practice), PCDT (Primary Health Care and Drug Therapy), *Ph.D. in Health Professions Education obtained 2017	FPKG 412 Pharmacy Practice
Mrs C.S Mostert	B.Pharm, PCDT (Primary Health Care and Drug Therapy), *Enrolled for M.HPE	FPFG 412 Clinical Pharmacy

2.10 STUDENT OPINIONS REGARDING ASSESSMENT

In a review regarding student perceptions about assessment, done by Struyven *et al.* (2005:342) in 2005, a strong relationship was found between students' perceptions about assessment and the way in which they approached learning. In the same study, the authors concluded that if students deemed assessment procedures as inappropriate, they followed a surface learning approach. According to this review, students' assessment preferences do not compare with their perceptions about appropriate evaluation, as their preferences tend to evoke surface learning.

Alkharusi *et al.* (2013:1690) demonstrated that students are likely to develop strong self-efficacy when the aim of a particular assessment task reflect classroom instructional goals, if the task is authentic, represent real-life scenarios and if the scoring model and assessment criteria are provided and clear. In the said study, students also displayed positive perceptions of the necessity, utility and value of participating in tasks when they felt involved in the assessment process.

In a study done regarding formative and summative assessment on medical students in 2016, Anwar and Hameed (2016:37) found that students like formative assessment and agreed that formative assessment stimulates deep learning and help them prepare for summative assessment. The authors also found that students take feedback seriously in order to identify and develop their weaknesses.

Weurlander, Söderberg, Scheja, Hult and Wernerson (2012:756) recorded similar findings in their 2012 study. They found that formative assessment influenced students' motivation to study, increased awareness during learning and acted as an instrument that influenced the learning process and outcomes. They also found that the manner in which assessment methods was developed, was important with regards to the manner in which students experienced assessment. They saw individual assessments a way to focus on factual knowledge and group assessments as AoL, focusing on understanding and applying the content.

The findings of this section will be compared to findings in this study in Chapter 5.

2.11 SUMMARY

Chapter 2 highlighted assessment, and literature covering concepts of assessment including the purpose, importance, principles, types, methods and instruments were investigated. The effects of assessment on learning and student emotions followed. Furthermore, this chapter also contextualised assessment in terms of the SAPC, CHE and NWU principles, policies and practices underpinning assessment in the B.Pharm curriculum at NWU. The chapter concluded with examples of similar studies. The literature reviews thus also laid the foundation of the development of the questionnaire used in this study.

In the next chapter, Chapter 3, the research methodology is depicted in detail.

CHAPTER 3
RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter will describe the theoretical perspectives regarding the research design, the data collection process, sampling method, the pilot study and analysis of data. Ethical concerns, reliability, validity and trustworthiness will also be discussed.

3.2 RESEARCH DESIGN

Research design is a term used to describe a particular data collection procedure and depends on the type of research used to answer a research question appropriately (Mouton 2001:49, Cohen 2013:75). Similarly, De Vaus (2001:9) states that "the function of a research design is to ensure that the evidence obtained enables us to answer the initial question as unambiguously as possible".

Quantitative research as reviewed by McMillan and Schumacher (2001:15) and Leedy and Ormrod (2014:97) is the arrangement of statistical results by using quantities. This is supported by Burns, Grove and Gray (2011:34) who describe quantitative research as an accepted, unbiased and structured process in which numerical data is employed to obtain information.

Exploratory research is described by Fouché and De Vos (In De Vos, Strydom, Fouché & Delport 2011:96) as an approach where the researcher envisions acquiring knowledge about basic facts in order to generate a general report of current conditions. They describe descriptive research as an approach where the details of a situation are collected.

The researcher wanted to gather general and specific information about the opinions of final year students regarding assessment in the B.Pharm programme and quantify it statistically. The research method chosen for this study was a survey and the tool used to gather data was a questionnaire. According to Cohen, Manion and Morrison (2013:207), an exploratory survey is when no assumptions or models are suggested and relationships and patterns are explored. The questionnaire contained closed and open-ended questions where participants could give their own opinions. This study can thus be described as an exploratory, descriptive, quantitative study.

3.3 RESEARCH METHODOLOGY

3.3.1 Method 1: Literature review

Singleton and Straits (1999:544) state that the aim of a literature review is to put a problem into context against related theory and research and ensure that the researcher has adequate knowledge about the subject of the study. The literature review in this study in **Chapter 2**, was conducted to provide context and background in relation to the problem stated (Leedy & Ormrod 2014:51). Figure 3.1 is representative of a framework for the layout and content of Chapter 2.

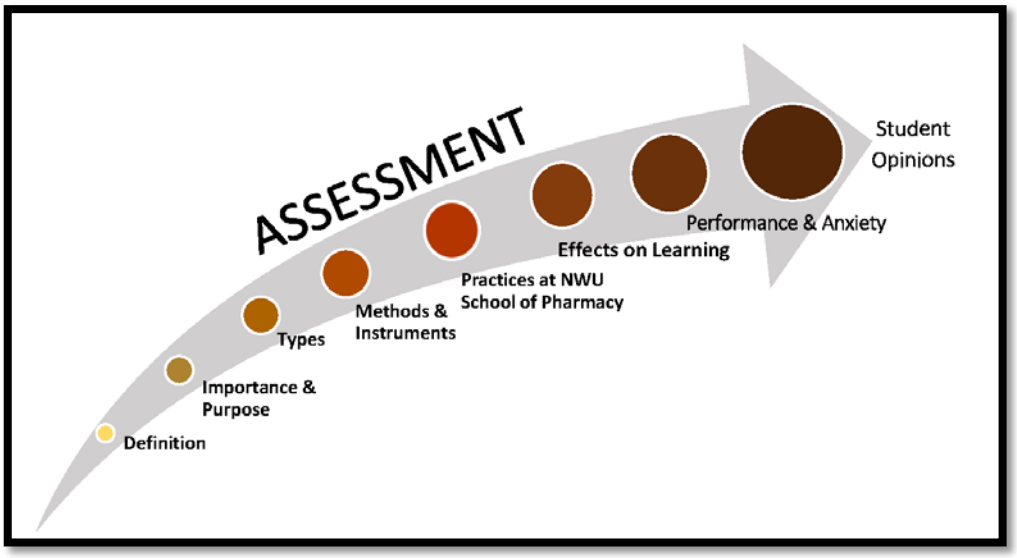


FIGURE 3.1: A FRAMEWORK FOR THE LAYOUT AND CONTENT OF CHAPTER 2 (Compiled by the researcher, Mostert 2017)

The literature review was conducted to achieve the following goals:

- Conceptualise assessment as to orientate the reader to different concepts relating to academic assessment, specifically in higher education;
- Discover findings obtained by similar studies and compare findings of those studies and this study;
- Motivate the importance of this study to the reader;
- Acquire a deeper understanding of assessment in higher education, various assessment practices and the impact of assessment on students' learning abilities; and
- Provide the literary foundation for the development of the questionnaire.

3.3.2 Empirical study

The empirical part of the study constituted survey research conducted by means of a questionnaire.

3.3.2.1 *Theoretical aspects*

As previously stated, this study is based on a survey research model. Survey research is described by Gay and Airasian (2003:10) and Bowling (2009:214) as a method to accumulate data in order to answer questions about the present status of topics, which is then followed by a quantitative description supplied by means of numbers and statistics. According to De Vaus (2001:1), descriptive research is the attempt of the researcher to determine "what is going on".

Surveys are considered a popular method when exploring educational issues. Questionnaires are usually employed to accumulate information regarding the inclinations, apprehensions, attitudes, practices and interests of a group of people (Gay & Airasian 2003:277). Cohen *et al.* (2013:84) also list "opinions" as one of the foci of survey research. Table 3.1 is an excerpt from a table that summarises elements of different research styles, compiled by Cohen *et al.* (2013:84), demonstrating the elements of survey research.

TABLE 3.1: ELEMENTS OF SURVEY RESEARCH MODELS
(Derived directly from Cohen *et al.* 2013:84)

RESEARCH MODEL	SURVEY
Purposes	• Gathering large scale date in order to make generalisations • Generating data that can be statistically manipulated • Gathering context free data
Foci	• Opinions • Scores • Outcomes • Conditions • Ratings
Key terms	• Measuring • Testing • Representative • Generalizing
Characteristics	• Describes and explains • Represents wide population • Gathers numerical data • The use of questionnaires and assessment/test data

The questionnaire developed for this study fits the purpose of survey research as it gathers data about the opinions of a group students regarding assessment that will be statistically manipulated.

3.3.2.2 *The questionnaire used in this study*

In this study, the questionnaire, cf. Appendix A, consisted of a quantitative approach including elements of qualitative research. The paper-based questionnaire consisted of mostly closed-ended questions, with some open-ended questions. The purposes of the questionnaire were to collect demographic information regarding the participants; determine the students' opinions about assessment; and determine if there are factors that influence participants' views of assessment and how assessment affects different aspects of their lives, especially with regards to the effects on the anxiety levels of students. The open-ended questions were used for the purpose of motivating participants' choices in the closed ended questions and to allow students to provide answers which may have not been included as an option in the closed questions. The questionnaire was made available in Afrikaans and English as it was a prerequisite of the NWU Health Research Ethics Committee. The questionnaire was reviewed by study supervisors and both questionnaires (English and Afrikaans) were piloted. The answers in Afrikaans were translated to English for the purpose of this study. The translations were checked by the supervisors and a language editor.

In 2014, a survey about assessment was conducted by Academic Support Services at the NWU Potchefstroom Campus. The target population of this survey was lecturers and the purposes of the survey were to determine the nature of assessment practices at the NWU and lecturers' opinions concerning different aspects of assessment. This study was conducted as an informal study, with the goal of gathering data for academic support purposes. The questionnaire explored the manner in which and reasons why lecturers employed and managed assessment practices. A summary of changes made to the questionnaire is noted in Table 3.2.

After a literature review, the original questionnaire was adjusted by the researcher in accordance to the needs of the study and in order to gather data about students' opinions regarding assessment. After adding some components and making adjustments to the questionnaire, it was scrutinised by a biostatistician at the UFS Department of Biostatistics and piloted. Table 3.2 represents a layout and brief explanation of the content constituting the questionnaire.

TABLE 3.2: THE CONTENTS OF THE QUESTIONNAIRE (COMPILED BY THE RESEARCHER, MOSTERT 2017)

SECTION	TITLE	CONTENT	SUMMARY OF CHANGES MADE TO ORIGINAL QUESTIONNAIRE
1.1	Demographic information	Question 1-3: Gathering information about the gender, age and number of modules students are enrolled for	Student specific question added. Number of modules registered for in 2015.
1.2	General Information regarding assessment	Question 4: Enquiring into the frequency of test opportunities	This section was kept from the original questionnaire. Was changed to ask how many test opportunities students participated in for each module enrolled.
1.3	Communication Regarding Assessment	Question 5-8: Questions about the frequency and nature of communication about assessment	This section was added (cf. 2.8) Sarason (1984) Mushtaq & Khan (2012) Krackov in Dent and Harden (2013) Mazer *et al.* (2014).
1.4	Continuous Assessment	Question 9-15: Enquiring into the frequency and nature of formative assessment.	This section was changed to enquire how students viewed formative assessment practices. (cf. 2.5.2) Hanauer *et al.* (2009) Weurlander *et al.* (2012) Norcini & Friedman Ben-David in Dent and Harden (2013).
1.5	Tests and Exams	Question 16–23: Enquiring into the frequency and nature of summative assessment.	This section was changed to enquire how students viewed summative assessment practices (cf. 2.5.3) Norcini *et al.* (2010) Norcini & Friedman Ben-David in Dent and Harden (2013) Le Roux (2004).
1.6	Feedback	Question 24–27: Enquiring into the frequency and nature of feedback.	This section was changed to enquire how students viewed feedback practices (cf. 2.4.3) Much (2003) Bout *et al.* (2010) Krackov in Dent and Harden (2013).
1.7	General experiences regarding assessment	Question 28–37: Questions aiming to obtained student opinions regarding various other aspects of assessment including workload, input, anxiety, performance etc.	This section was added after the literature review, to include aspects affecting assessment performance (cf. 2.7 & 2.8) Zeidner (1998) Boud & Falchikov (2006) Sansgiry & Sail (2006) Gijlbels & Dochy (2006) Biggs & Tang (2011).

3.3.3 Research sample

Cohen *et al.* (2013:2011) state that a research sample is a smaller group of participants out of a bigger population, from which researchers endeavour to collect information in such a way that the knowledge is representative of the total population. In the following sections, the sampling method followed during the course of this study will be explained.

3.3.3.1 *Target population*

A target population consists of a group of individuals who have and share certain specified characteristics (De Vos in De Vos, Strydom, Fouché & Delport 2011:223). In this study, the target population consisted of 4th year undergraduate B.Pharm students in the year 2016. The reason why the researcher targeted this group of students is that they have vast experience of assessment practices used in the undergraduate B.Pharm programme. A total number of 170 fourth year B.Pharm students were registered in 2016.

3.3.3.2 *Description of the sample*

The inclusion criteria for the sample were all final year B.Pharm students who were registered, full-time, contact students and registered for the full year between January 2016 and December 2016.

Participation in this study was voluntary. The participants were 18 years or older and the sample included females and males. The exclusion criteria excluded all students who discontinued their studies before the completion of this study.

3.3.3.3 *Sampling*

The researcher decided on homogeneous sampling, which is a purposeful sampling technique. The purpose of a homogeneous sample is to enable the researcher to perform research on a group with the same or similar characteristics or traits (Leard dissertation 2012:Online). The researcher found that this technique is the most appropriate sampling method, as the goal of the study is to gather information on how a specific group of students' experience assessment. The whole target population was used as the sample, as there a single small group of final fourth year students in the NWU School of Pharmacy.

3.3.3.4 *Sample size*

The sample size consisted of the total number of all current, registered, active undergraduate fourth year students enrolled for the B.Pharm programme at the NWU School of Pharmacy in 2016. The homogenous sample of participants yielded an estimated total of 170 prospective participants, who were invited to participate.

According to Baruch & Holtom (2008:1140) the response rate to questionnaires are affected by the manner in which it is administered, the timeframe of the research and the nature of the population. In this instance, the students were invited to an information session where the questionnaires were distributed, and students could complete submit the questionnaires immediately if they elected. Students were also reminded constantly about the questionnaire over a period of 30 days. On consultation with the Department of Biostatistics at the UFS a minimum of 60% response rate deemed appropriate for this study, when considering the circumstances of distribution. The response rate in this study was 64%. A total number of 110 students out of 170 participated.

3.3.3.5 *The pilot study*

A validation or pilot study was conducted in order to ensure that questions featured were clear and not biased, that the questionnaire was structured well and to determine the amount of time needed for the completion of the survey. The questionnaire was firstly scrutinised by a scientific panel at the UFS consisting of experts in the field of health professions education, a statistician from the UFS and the study leader in order to evaluate and approve the questionnaire's face and content validity.

In order to test the face and content validity, the questionnaire was given to five Master's degree students, currently completing their Master's degree at the NWU Medicine Usage in South Africa (MUSA) research unit. These students did not form part of the target population in this study. They had all successfully completed the fourth year of the B.Pharm programme at the NWU and met the criteria for the purpose of the pilot study.

The estimated time to complete the questionnaire was reported as 15-25 minutes. No changes were made to the questionnaire.

3.3.3.6 *Data gathering*

Participants were recruited by means of handing out an information leaflet on campus and a written announcement on the e-learning platform, eFundi, informing them about an information session. The information session constituted an explanation of the study done the researcher, after which an independent mediator, Mrs. Adelè Naudé, explained informed consent to the potential participants. The researcher was not present during the explanation of informed consent and the proceedings which followed. Mrs. Adele Naudé is a lecturer at NWU School of Pharmacy.

After informed consent was explained to participants, the mediator distributed the informed consent forms and questionnaires to the participants and explained informed consent form. The mediator informed participants that they may read through the consent form and complete the questionnaire in their own time, if they elect to participate in the study. The students were able to ask the mediator any questions, and the contact details of both the researcher and the mediator were available on the information sheet.

Reminder messages on eFundi were sent out in order to remind participants to complete the informed consent forms and questionnaires and place it in the allocated boxes. These reminders were sent out every three days for the duration of the 30-day period to all participants. No personal data was expected from the participants and the questionnaires were completed anonymously. Demographic data was asked and used in the study. The participants had 30 days to complete the informed consent form and questionnaire, which allowed them adequate time to contemplate their participation in the study and answers to questionnaire. The researcher had access to the questionnaires only once the mediator had controlled them against the informed consent.

Two collection boxes, one allocated for the informed consent forms and one for the anonymous questionnaires, were placed in a private office at the Department of Clinical Pharmacy. The placement of the boxes in an independent office allowed participants to put the questionnaires in the box without the risk of their anonymity being compromised. The mediator (alone) collected the boxes after the 30-day period had expired. The mediator controlled the response rate, and if the response did not meet the statistical minimum, the researcher sent out a reminder again. This process continued until the minimum response rate required was met.

The mediator controlled the informed consent forms against the questionnaires collected in the boxes by means of corresponding codes. Each pair of questionnaire and informed consent forms had corresponding numbers, in order to ensure that the mediator could confirm that each questionnaire had a corresponding informed consent form. Only the questionnaires for which there is informed consent forms were accepted. Additional questionnaires were discarded by the mediator. After the mediator controlled the questionnaire surveys against the informed consent forms, the mediator distributed the questionnaire survey documents to the researcher. At no time did the researcher have access to the informed consent forms, as participants could be identified via information on the informed consent.

The boxes containing the questionnaires and informed consent forms are kept in separate locked cabinets in separate locked offices. Only the researcher has access to the questionnaires and only the mediator has access to the informed consent.

3.3.3.7 *Data analysis*

Data analysis is the means by which a researcher compiles, organises and gives meaning to a set of data (Leard statistics 2012:Online). The information from the questionnaires was captured and analysed by the researcher on a data sheet created on Microsoft Excel. A biostatistician from the department of Biostatistics at the UFS further analysed the data captured from the questionnaires.

Frequencies and percentages were calculated to form categorical data, which form part of descriptive statistics. Numerical data consists of calculated means and standard deviations or medians and percentiles. The statistical analysis gave rise to descriptive statistics, which is suitable in order to gather and summarise quantitative data (Marshall & Jonker 2010:5).

The qualitative data retrieved from the open-ended questions were categorised into themes. Similar responses to open ended questions were grouped together. The responses relating to each theme was then quantified into numbers, tallied and converted into percentages.

3.4 VALIDITY, RELIABILITY & TRUSTWORTHINESS

Validity in quantitative research refers to the purpose of evaluating the quality of the data and results. Creswell and Plano Clark (2007:133) state that validity is when the researcher can draw meaningful conclusions from the results in terms of the results to the population and reliability means that the scores received from participants are reliable and consistent over time. Validity and Reliability are terms used in Quantitative, Qualitative and Mixed Method research approaches. Trustworthiness describes a way in which the researcher can convince the audience that the research project which was done is of great importance and high quality (Golofshani 2003:597) and is used in mixed method approaches and qualitative studies.

3.4.1 Validity

Miller (2003:Online) states that validity can be defined as the extent to which the instrument used measures what it intends to measure. Validity also describes the truthfulness of the research results (Golafshani 2003:599). Browning (2014:205) distinguishes between internal and external validity. Internal validity is achieved when the instrument really measures what it is supposed to measure (Shenton 2004:64) and if the findings represents reality (Murphy & Yielder 2010:64). External validity is achieved if the research findings can be applied to "the wider population" (De Vos *et al.* 2011:153).

The internal and external validity of the questionnaire used in this study was established by means of a pilot study conducted on students outside of the target population. A biostatistician from the UFS also validated the statistical validity of the questionnaire. The protocol and questionnaire survey were critically analysed by the study leader for this study, Dr Chantel van Wyk of the UFS and by a scientific committee of the UFS, consisting of experts in Health Professions Education.

3.4.2 Reliability

Reliability is the measure of the extent to which results obtained are consistent over a period of time and a true depiction of the total population (Cohen *et al.* 2013:146). Golafshani (2003:598) states that the research instrument may be considered reliable if the

results can be replicated by using comparable methodology. This research instrument was subjected to a pilot study and a peer evaluation in order to confirm its reliability.

3.4.3 Trustworthiness

Golofshani (2003:597) states that trustworthiness may be described as the way in which the researcher is able to persuade an audience that the research is of high quality and attention worthy. The researcher in this study demonstrated the trustworthiness of the study by supplying a detailed outline of the way in which the quantitative data were analysed and interpreted in Chapter 4, while Chapter 5 contained a description of and discussion on the results of the questionnaire survey.

The researcher embarked on linking the findings and conclusions made in the empirical investigation with theory found in the literature review, as this is also a means of establishing trustworthiness of results (Westphal 2000:1). The data and findings of qualitative research or questions should always be seen in the context of the phenomenon that is being studied, which makes the data unique to the scenario and surroundings within which the study or data collection takes place (Guba 1981:83). Therefore, the responses and findings cannot necessarily be generalised to other situations.

3.5 ETHICAL CONSIDERATIONS

Reputable research carefully considers various ethical considerations. In this study, approval was sought from the bodies concerned and the respondents, and the participants' right to privacy and confidentiality was assured.

3.5.1 Approval

Approval for the research project was obtained from the Health Sciences Research Ethics Committee (HSREC) at the UFS (ECUFS 47/2016) (cf. Appendix C) and the Health Research Ethics Committee (HREC) at the NWU (NWU-00044-16) (cf. Appendix D), the Director of the School of Pharmacy at the NWU, Dean of the Faculty of Health Sciences at the NWU as well as the Vice-Rector, Academic at the NWU (cf. Appendix B).

As no patients are involved in this study, approval from the provincial executive is not necessary. Good will permission was also from the Student Dean at the NWU (cf. Appendix B).

3.5.2 Informed consent

According to Cohen *et al.* (2013:52), participants have a right to freedom and self-determination and this constitutes the principle of informed consent. The authors further state that informed consent should contain elaborate information regarding the consequences and dangers of the study. Informed consent is of utmost importance if the participants of the study may be exposed to any stress, pain or invasion of privacy.

Informed consent was necessary in this study as the researcher was lecturing a module to the potential participants. This meant that participants could potentially experience undue stress, vulnerability and an invasion of privacy, because of the researcher's position. A thorough informed consent process was the only way in which the researcher could ensure that participants were minimally exposed to any harmful consequences during the course of this study.

The informed consent process is discussed at length in point 3.3.3.6. The researcher recruited a mediator to facilitate the informed consent process. The mediator, Mrs. A. Naudé is a lecturer at the NWU School of Pharmacy, but not involved in lecturing any modules presented in the fourth year of the B.Pharm degree. During the course of the informed consent session, participants were informed of their rights, the nature of the study and that their participation was voluntary.

Informed consent was obtained successfully in the course of this and its purpose was fulfilled. Although the informed consent forms contained the personal information of the participants, only the mediator had access to the completed informed consent forms. The participants' rights to privacy and confidentiality were protected. There were no reports from participants about any harmful experiences resulting from this study.

3.5.3 Right to privacy and confidentiality

The researcher complied with the principles of confidentiality by ensuring that the identities of the participants were not publicised in any way and all records and data retrieved from participants were kept secure (Burns & Grove 2009:202). The information collected by means of the informed consent and questionnaire was handled in a strictly confidential manner. The information on the informed consent was known only to the mediator, who was the only person who had access to the forms, ensuring the privacy of the participants is upheld. The questionnaire contained only anonymous data.

If participants elected to participate, they could complete the questionnaire at their own leisure, in a private place of their choosing. There were no face-to-face interviews or questionnaires done in this study. No names or personal identifiers appeared on any data sheet that was sent for statistical analysis. Publications out of this study will exclude any information that may be used to identify the participants. The informed consent forms are kept in a locked cabinet in the locked office of the mediator. The questionnaires are kept in a locked cabinet in the locked office of the researcher and only the researcher has access to the questionnaires.

3.6 CONCLUSION

Chapter 3 provided an overview of the research design that constituted this study and the procedures followed in conducting the study. Firstly, a literature review was conducted, after which a questionnaire was designed.

After the HSREC at the UFS approved the study (ECUFS 47/2016) (cf. Appendix C), the questionnaire was presented to 170 participants. A total number of 110 participants elected to participate in this study.

In the following chapter, **Chapter 4**, ***Results of the questionnaire*****,** the results of the questionnaire will be offered.

CHAPTER 4

RESULTS OF THE QUESTIONNAIRE SURVEY

4.1 INTRODUCTION

The theoretical aspects of the research methodology used were discussed in Chapter 3. The results of the study are presented in this chapter. The results are grouped according to the sections of questions in the questionnaire. Figure 4.1 is a graphical representation of the sections in the questionnaire.

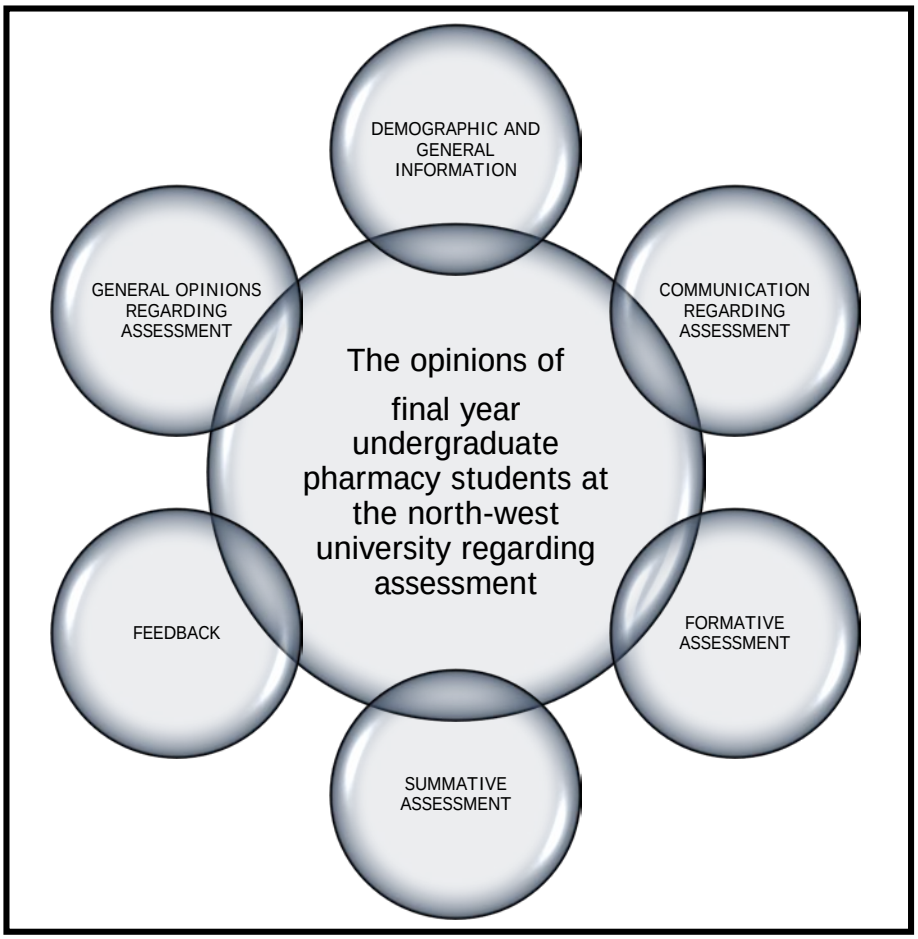


FIGURE 4.1: SECTIONS USED TO GROUP QUESTIONS IN THE QUESTIONNAIRE (Compiled by the researcher, Mostert 2017)

4.2 QUESTIONNAIRE RESULTS

A paper-based questionnaire, designed to determine final year pharmacy students' opinions regarding assessment in the NWU B.Pharm programme, constituted the empirical investigation in this study. The method of data collection was discussed elaborately in Chapter 3. Data was collected from a sample consisting of 4th year Pharmacy students, at

the NWU campus via a questionnaire, following informed consent. The data collection period took 30 days after which 110 completed questionnaires were returned. This constituted a 64% response rate. The total number of participants who participated in this study will be indicated using the symbol “N” (e.g. N=110) and the total number of responses for a specific question will be indicated by using the symbol “n” (e.g. n=109), and will be used in this capacity throughout the mini-dissertation. All percentages were rounded off to the nearest round number.

The research question answered by Chapter 4 is research question two:

What are the opinions of students regarding assessment practices at the NWU School of Pharmacy with specific reference to the following:

- Communication practices in assessment
- Formative assessment practices
- Summative assessment practices
- Assessment anxiety
- Feedback practices after assessments
- The overall effect that assessment has on the student

4.3 DEMOGRAPHY OF PARTICIPANTS

This section represents the demographic information of the participants. General information including gender, age and number of modules enrolled for was recorded.

4.3.1 Gender distribution of participants

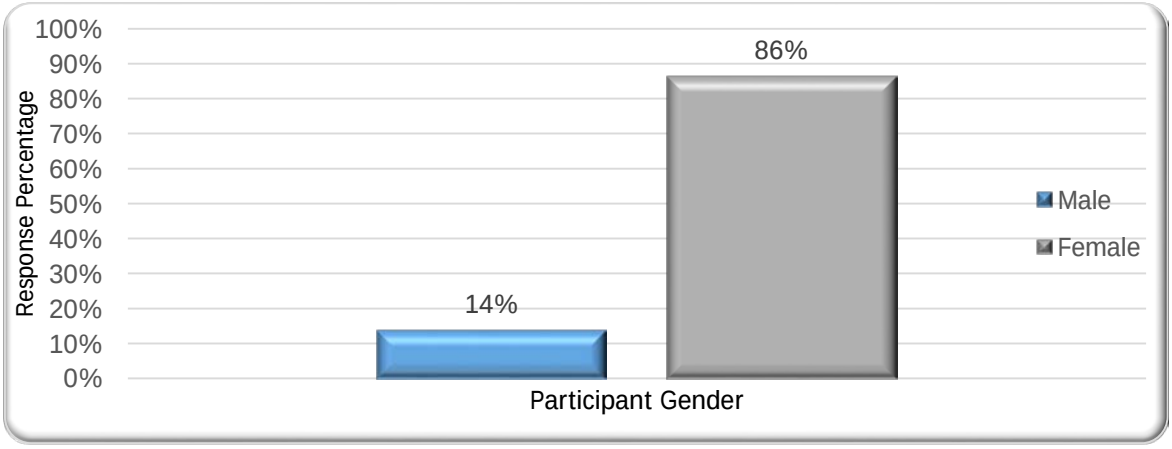


FIGURE 4.2: GENDER DISTRIBUTION OF PARTICIPANTS
(Question 1, Section 1.1 of the questionnaire) [N=110] [n=110]

The gender distribution of participants, represented in Figure 4.2, indicates that 95 female participants (86%) and 15 males (14%) participants completed the questionnaire. It is evident that there are more female students enrolled in the final year of the NWU B.Pharm curriculum than male students.

4.3.2 Age distribution of participants

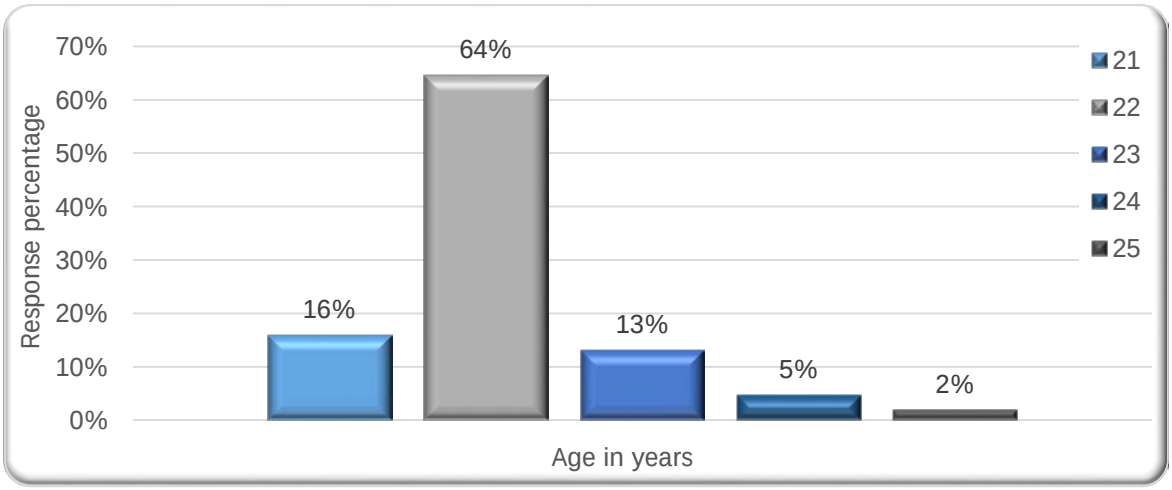


FIGURE 4.3: AGE DISTRIBUTION OF PARTICIPANTS [N=110] [n=107] (Question 2, Section 1.1 of the questionnaire)

Figure 4.3 represents the age groups of the participants. The total number of participants who answered this question was 107. The age of the participants ranged from 21 to 25 years. Of the 107 participants responding to this question, 17 participants (16%) were 21 years of age, while 69 participants (64%) were 22 years of age. A number of 14 participants (13%) were 23 years of age, five participants (5%) were 24 years and two participants (2%) were 25 years of age.

4.3.3 The number of modules participants was enrolled for in the year 2016

Of the 110 participants to answer Question 3, 105 participants (95%) indicated that they were enrolled for six modules or more in 2016. Only three participants (3%) indicated that they were enrolled for three modules and two participants (2%) indicated that they were enrolled for five modules. It can be deduced from the data obtained from this question that the majority of students were enrolled for six or more modules in 2016.

4.4 GENERAL INFORMATION REGARDING ASSESSMENT

This section represents general information about assessment, including the average number of test opportunities scheduled for each module that students were enrolled for in each semester.

4.4.1 The number of test opportunities scheduled for each module per semester

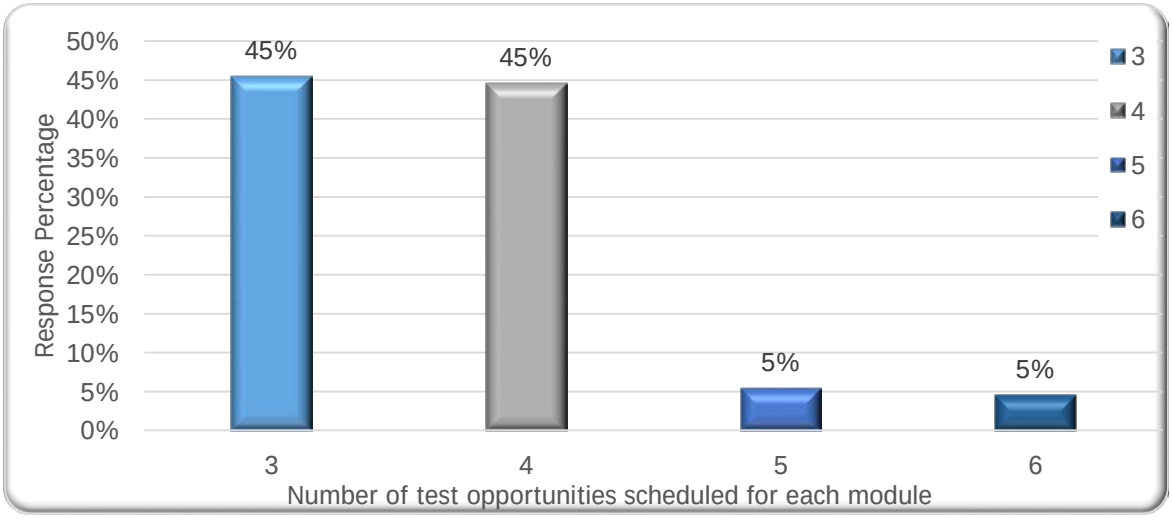


FIGURE 4.4: THE NUMBER OF TEST OPPORTUNITIES SCHEDULED FOR EACH MODULE PER SEMESTER [N=110] [n=110]
(Question 4, Section 1.2 of the questionnaire)

In Question 4 of the questionnaire, the participants were asked to indicate the number of assessments scheduled for each module they were enrolled for in a semester. Figure 4.4 represents the average number of assessments per module. Out of the 110 participants who responded to this question, 50 participants (45%) indicated that they there were at least three test opportunities scheduled per module per semester. A number of 49 participants (45%) indicated that there were four tests scheduled per module; six participants (5%) indicated that they were expected to write at least five tests per module and five participants (5%) indicated that there were six or more tests scheduled per module per semester. When the researcher analysed the responses statistically, the mean number of scheduled tests was calculated to be 3.69, the standard deviation being 0.7716 and the median 4.

4.5 COMMUNICATION REGARDING ASSESSMENT

In Section 1.3 of the questionnaire, question 5 to 8, students were asked questions about communication that takes place between lecturers and students, with reference to four aspects of assessment. Figure 4.5 is a graphical representation of all the results obtained from each question in this section of the questionnaire.

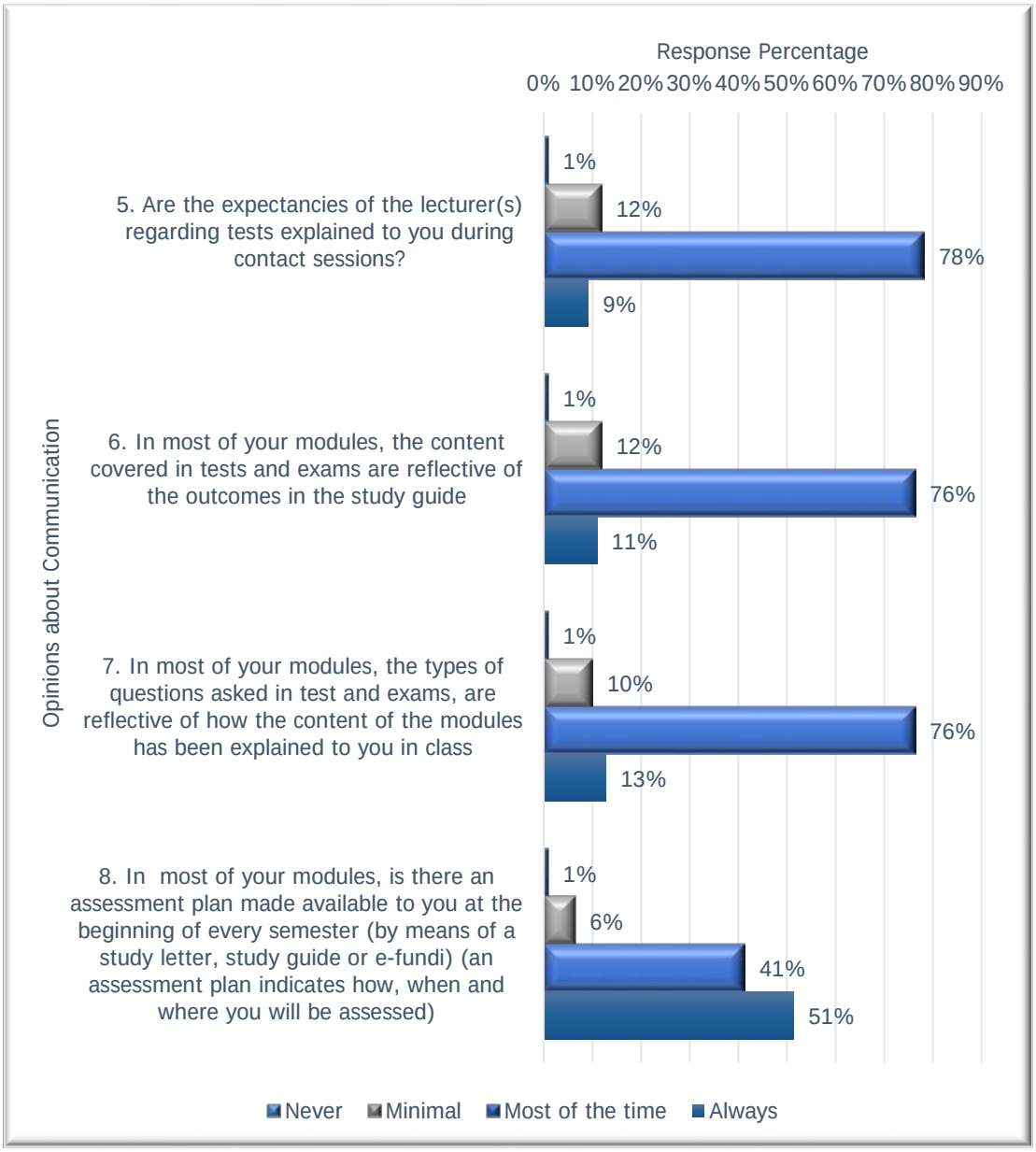


FIGURE 4.5: RESULTS OF QUESTIONS PERTAINING TO THE OPINIONS OF PARTICIPANTS CONCERNING COMMUNICATION IN ASSESSMENT [N=110] *[n=109] (Questions 5, 6, 7 and 8*, Section 1.3 of the questionnaire)

In response to Question 5, with regards to the communication of the expectations of the lecturer(s) in tests during class sessions, one participant (1%) stated that the expectancies

of the lecturer were never communicated. A number of 13 (12%) participants indicated that minimal communication was received, while 86 participants (78%) said that expectancies were communicated in the classroom most of the time. Of the 110 participants responding to the question, only 10 participants (9%) were of opinion that lecturers' expectancies about tests were always communicated in the classroom.

In Question 6, which asked the participants if the content covered in assignments were reflective of the outcomes in the study guide, 84 (78%) stated that most of the time the content in assessments did reflect the outcomes of the study guide. As illustrated in Figure 4.5, of the 110 participants who answered the question, one participant (1%) stated that this was never the case; 13 (12%) stated that it minimally was the case and 12 participants (11%) stated that the content in assignments were always reflective of the outcomes in the study guide.

Out of the 110 participants who responded to Question 7, enquiring if the types of questions relayed in exams were reflective of how content was presented in class, 84 participants (76%) were of the opinion that this was indeed the case. Only 14 (13%) participants stated that the types of questions were always reflective of the manner in which the content of the module was explained in the classroom, while 11 (10%) was of opinion that it was minimally the case. One participant (1%) stated that the types of questions were never reflective of how content was presented in the classroom.

A total of 109 participants answered Question 8. When asked if there was an assessment plan made available to students in most of their modules, 56 participants (52%) stated that this was always the case, 45 (41%) stated that this was true most of the time, while seven participants (6%) stated that this was minimally the case. Only one participant (1%) indicated that in their modules an assessment plan was never made available to them.

4.6 CONTINUOUS ASSESSMENT (FORMATIVE ASSESSMENT)

In this section of the questionnaire, participants were asked to voice their opinions regarding aspects of formative assessment. The data represented in the following section was retrieved from Section 1.4, Question 9 to 15 of the questionnaire.

4.6.1 The frequency of writing preparation tests

Figure 4.6 is a graphical representation of the results obtained from Question 9.

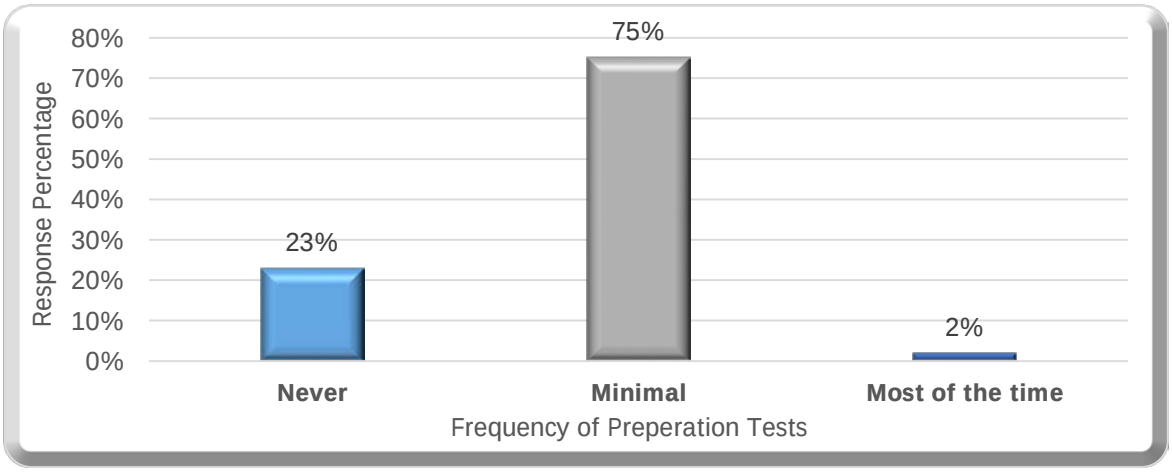


FIGURE 4.6: THE FREQUENCY OF PREPARATION TESTS [N=110] [n=109] (QUESTION 9, SECTION 1.4 OF THE QUESTIONNAIRE)

Participants were asked how regularly it was expected of them to write preparation tests (cf. 2.9.2) at the beginning of lectures in Question 9. Out of the 109 participants who responded to this question, 82 participants (75%) implied that they were minimally expected to write preparation tests before the beginning of each lecture. A number of 25 (23%) participants stated that they never write preparation tests at the beginning of a lecture and two participants (2%) stated that they write preparation tests most of the time.

4.6.2 The purpose of preparation tests

Figure 4.7 is an illustration of the data retrieved from Question 10, which aimed to determine participants' opinions regarding the purpose of preparation tests (cf. 2.9.2).

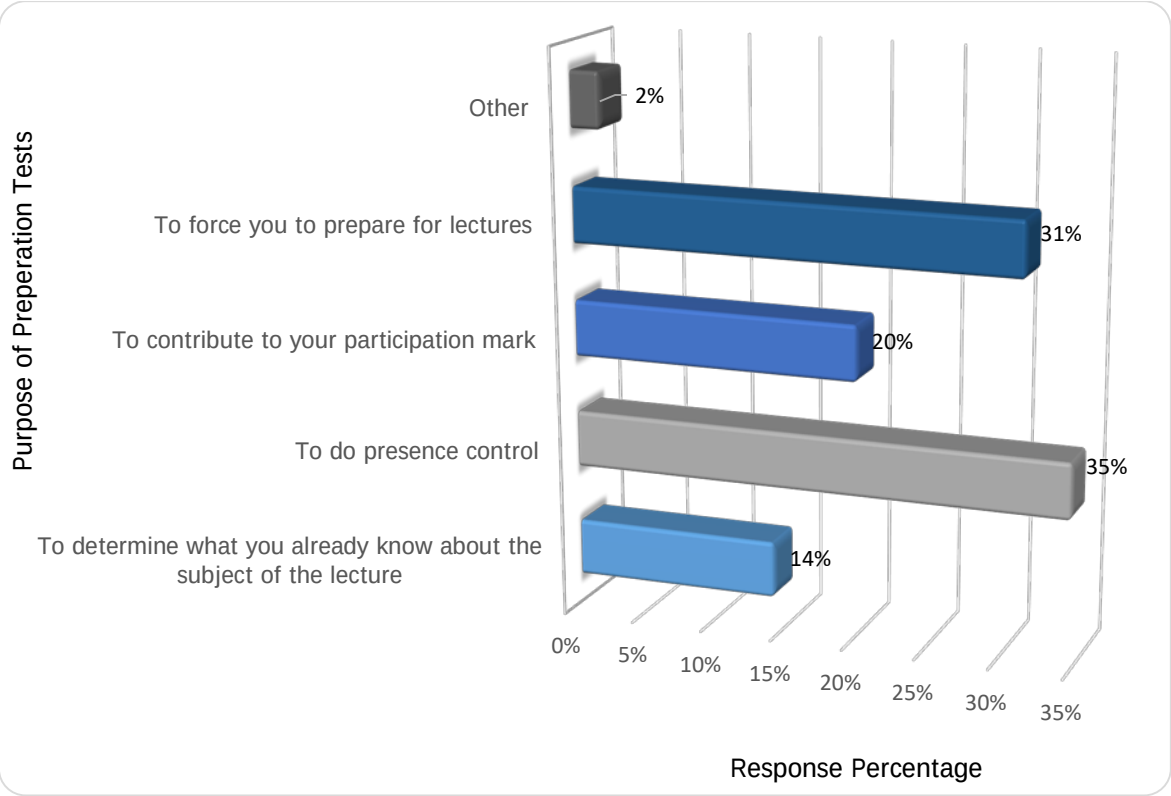


FIGURE 4.7: OPINIONS REGARDING THE PURPOSE OF PREPARATION TESTS [N=110] [n=245]
(Question 10, Section 1.4 of the questionnaire)

In this question, inquiring about participants' opinion about the purpose of preparation tests, students could choose more than one option. Out of the 245 responses received on this question, 83 participants (35%) were of opinion that preparation tests were used by lecturers to determine if they attended class or not. A total of 75 (31%) of participants indicated that lecturers used preparation tests in order to force students to prepare for lectures. Furthermore, data yielded from this question showed that 34 students (14%) stated that preparation tests were used to determine what students already knew about the subject of the lecture, while 48 (20%) participants were of opinion that preparation tests were used to contribute to their participation mark. Only five participants (2%) were of opinion that preparation tests were used for other reasons. Table 4.1 contains the opinions of these five participants; it is presented in the written text as it were provided by the participants.

TABLE 4.1: PARTICIPANTS' OPINIONS REGARDING THE PURPOSE OF PREPARATION TESTS [n = 5]
(Question 10.1, Section 1.4 of the questionnaire)

OTHER REASONS WHY PREPARATION TESTS ARE USED BY LECTURERS
• "To reduce the amount of work which needs to be studied for the exam, as the work would already be studied by me (for the preparation tests)."
• "To force me to be in class."
• "Forces me to attend class."
• "To prepare you for tests and exams."
• "To assist people to get an idea on how lecturers can ask questions in tests, which questions will be asked, assists you to better prepare for tests."

4.6.3 Opinions regarding the purpose of small tests after lectures

Question 11 enquired about the opinions of participants about the purpose of small tests (cf. 2.9.2) issued to them after lectures. Figure 4.8 is a graphical representation of the data yielded from this question.

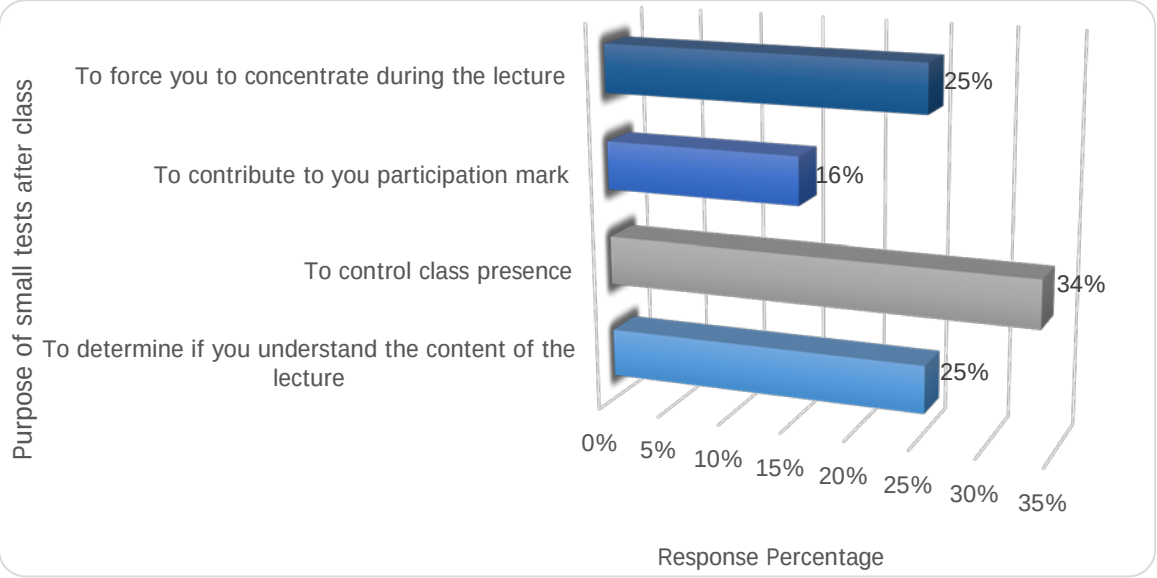


FIGURE 4.8: OPINIONS REGARDING THE PURPOSE OF SMALL TESTS AFTER LECTURES [N=110] [n=245]
(Question 11, Section 1.4 of the questionnaire)

Participants could select more than one option in response to the Question 11. The total number of responses amounted to 245, of which 83 participants (34%) indicated that it was a way in which lecturers controlled class attendance and 62 (25%) participants was of opinion that these tests were either used by lecturers to determine if students understood the content of the lecture or to force students to pay attention during lectures. As illustrated in Figure 4.8, 38 participants (16%) felt that these small tests were used to calculate a part of the participation mark.

Table 4.2 is a graphical representation of the comparative answers concerning the opinions of students about the purpose of preparation tests (question 10, section 1.4) and small class tests after lectures (question 11, section 1.4) as forms of formative assessment.

TABLE 4.2: A COMPARISON BETWEEN THE PERCEIVED PURPOSES OF DIFFERENT FORMATIVE ASSESSMENT TYPES
(Question 10 & 11, Section 1.4 of the questionnaire)

THE PURPOSE OF FORMATIVE ASSESSMENT	PREPARATION TESTS	SMALL CLASS TESTS AFTER LECTURES	MEAN (μ)	STDEV
To determine what you already know about the subject of the lecture	34	62	48	19,79898987
To do presence control	83	83	83	0
To contribute to your participation mark	48	38	43	7,071067812
To force you to prepare for lectures	75	62	69	9,192388155
Other	5	1	3	2,828427125
Total Responses (n)	**245**	**246**		

4.6.4 The frequency of continuous small class tests after lectures

Figure 4.9 is a graphic representation of the data gathered from Question 12 inquiring about the frequency of continuous small class tests after lectures.

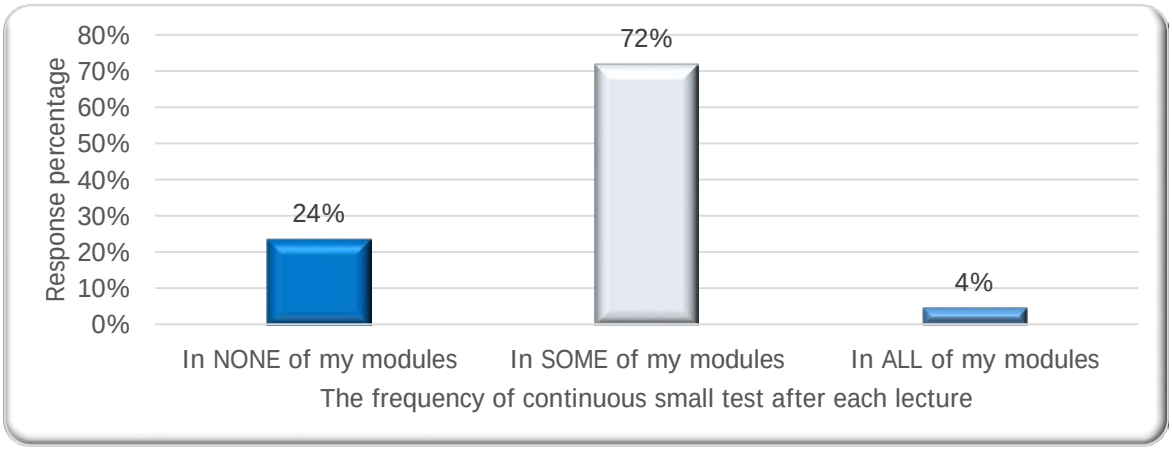


FIGURE 4.9: THE FREQUENCY OF CONTINUOUS SMALL TESTS AFTER EACH LECTURE [N=110] [n=110]
(Question 12, Section 1.4 of the questionnaire)

Concerning continuous formative assessment, participants were asked if they were expected to write continuous small tests (cf. 2.9.2) after the completion of each lecture. Of the 110 participants to respond to this question, 79 (72%) participants were of opinion that

this was the case in some of their modules and 26 (24%) participants indicated that this was not the case in any of their modules. Only five (4%) participants said they wrote continuous small tests in all of their modules.

4.6.5 The frequency of feedback received after small class tests

When asked if students received feedback after the completion of small class tests (cf. 2.9.2), in Question 13, 46 (42%) participants stated that it was the case in some of their modules, while 30 (27%) implied that no feedback were given in any of their modules. Out of the 110 participants who answer this question, 22 (20%) participants indicated that they received feedback in most of their modules, and 12 (11%) participants stated that feedback was given in all of their modules. Figure 4.10 is an illustration of the data retrieved from Question 13.

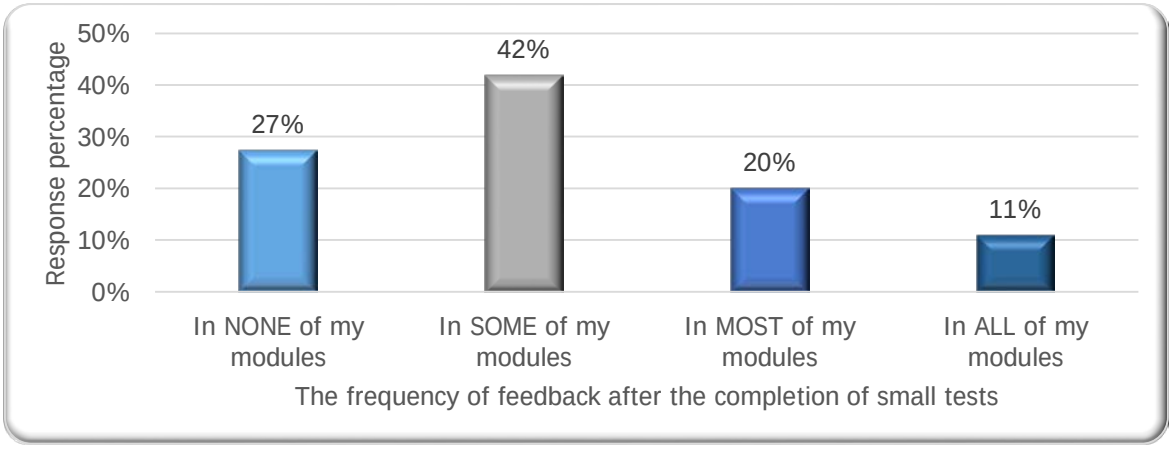


FIGURE 4.10: YOU RECEIVE FEEDBACK AFTER THE COMPLETION OF SMALL CLASS TESTS [N=110] [n=110]
(Question 13, Section 1.4 of the questionnaire)

4.6.6 The feedback you receive helps you to determine where your shortcomings are concerning the content of the modules

Figure 4.11 is graphical representation of the data obtained from Question 14.

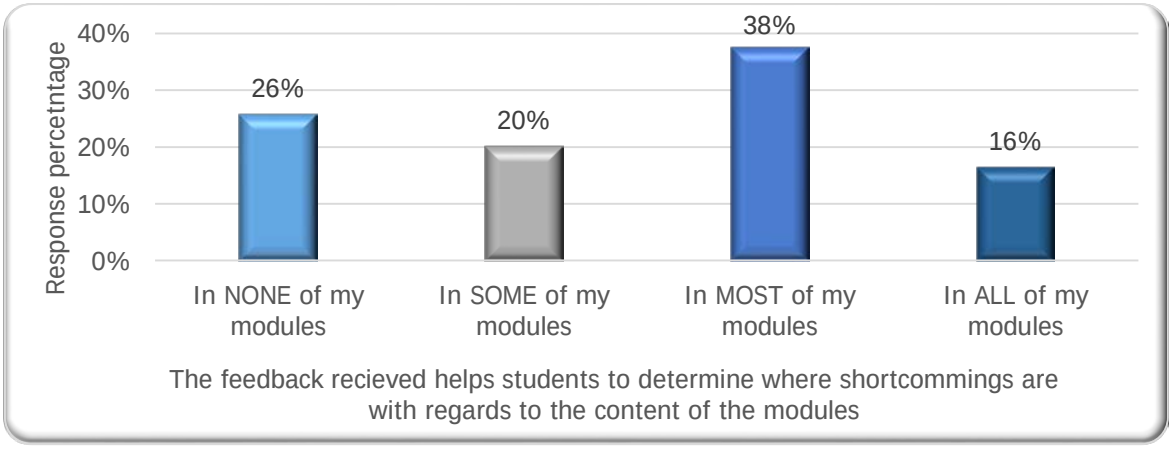


FIGURE 4.11: THE FEEDBACK YOU RECEIVE HELPS YOU TO DETERMINE WHERE YOUR SHORTCOMINGS ARE WITH REGARDS TO THE CONTENT OF THE MODULES [N=110] [n=109]
(Question 14, Section 1.4 of the questionnaire)

Participants were asked if feedback helped them determine where their shortcomings are regarding the content of the modules, in Question 14. Of the 109 to respond, 28 (26%) participants stated that this was not true in any of their modules and 22 (20%) participants were of opinion that it was true for only some of their modules. The majority, 41 (38%) participants, indicated feedback did help them to determine their shortcomings in most of their modules and 18 (16%) were of opinion that this was the case in all of their modules.

4.6.7 The feedback you receive, helps you to learn more effectively and purpose driven

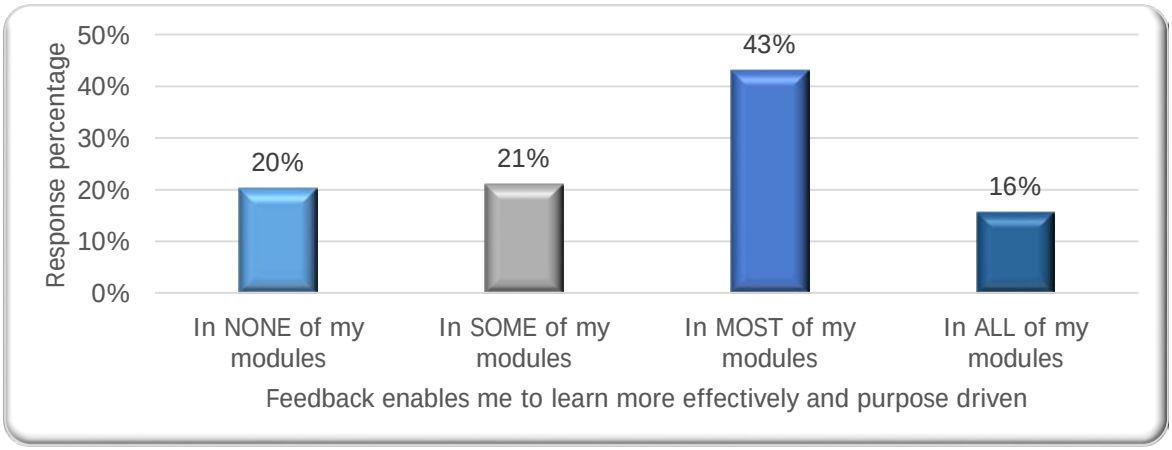


FIGURE 4.12: THE FEEDBACK YOU RECEIVE, HELPS YOU TO LEARN MORE EFFECTIVELY AND PURPOSE DRIVEN [N=110] [n=109]
(Question 15, Section 1.4 of questionnaire)

Figure 4.12 illustrates the responses received on the question if the feedback participants receive helps them to learn more effectively and purpose driven. The responses in Figure

4.12 were grouped for visual representation into four categories; namely that feedback helps them learn more effectively and purpose driven “in none my modules”, “In some of my modules”, “In most of my modules” and “In all of my modules”.

Of the 109 responses, 22 (20%) participants indicated that feedback did not assist them to learn more effectively and purpose driven in any of their modules and 23 (21%) participants stated that feedback did assist them in learning in some of their modules. The majority of respondents, 47 (43%) participants, indicated that feedback did assist them to learn in most of their modules and 17 (16%) participants stated that feedback aided them in learning effectively and purpose driven in all of their modules.

4.7 TESTS AND EXAMS (SUMMATIVE ASSESSMENT)

In Section 1.5 of the questionnaire, students were asked about their opinions regarding different aspects of summative assessment. The following section will report on data retrieved from Question 16 to 23.

4.7.1 Participants’ opinions of the purpose of test opportunities

In Question 16, participants could select more than one option in response. Figure 4.13 is an illustrative representation of the responses obtained in this question.

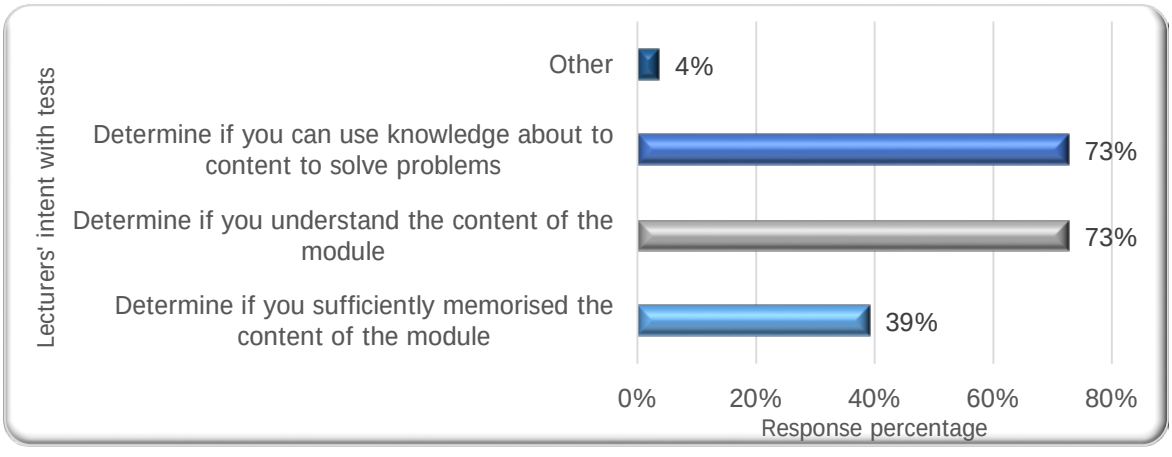


FIGURE 4.13: OPINIONS REGARDING LECTURERS’ INTENT WITH TEST OPPORTUNITIES [N=110] [n=207]
(Question 16, Section 1.5 of Questionnaire)

Question 16 aimed to determine the opinions of students regarding the purpose of test opportunities. A number of 43 (39%) participants indicated that tests represented a way

for lecturers to determine if they sufficiently memorised the content of the module. The majority, 80 (73%) participants indicated that they experienced tests as a means for lecturers to determine if they understood the content of the module and to determine if they can use knowledge about the content to solve problems, respectively. A minority of four (4%) participants were of opinion that lecturers used test opportunities for other purposes. These other purposes are listed in Table 4.3.

TABLE 4.3: YOU EXPERIENCE TEST OPPORTUNITIES AS A WAY IN WHICH LECTURERS (OTHER, SPECIFY) [n = 3]
(Question 16.1, Section 1.5 of questionnaire)

OTHER PURPOSES OF TEST OPPORTUNITIES
• "It feels as if lecturers want to trick you." • "(to contribute to) Participation mark." • "Sometimes it feels as if they (lecturers) do not test your knowledge, but expect unreasonable things which is not applicable at all."

4.7.2 Decision makers in assessment content and methods

In Table 4.4 the responses to two questions, Question 17 and 18, regarding student involvement in assessment, are summarised. Participants could select more than one option in response to each question. The questions were asked to determine who students thought were the main decision-makers regarding the content and method of assessments.

TABLE 4.4: WHO DECIDES ON WHAT CONTENT OF THE MODULES SHOULD BE ASSESSED AND HOW MODULES SHOULD BE ASSESSED? [N=110] [n=283]
(Question 17 and 18, Section 1.5 of questionnaire)

QUESTION	LECTURERS	STUDENTS	LECTURERS AND STUDENTS
Who decides on what content of the modules should be assessed?	109 (38%)	87 (31%)	87 (31%)
Who decides on how the modules should be assessed?	110 (39%)	87 (31%)	86 (30%)

The responses obtained in both questions were more or less statistically similar. Of the 283 responses received, 109 (38%) and 110 (39%) participants indicated that lecturers decided on what content of modules should be assessed and how modules should be assessed. A total of 87 (31%) and 87 (31%) participants indicated that Students decided about which content of the modules should be assessed and how modules should be assessed. A similar total of 87 (31%) and 86 (30%) participants were of opinion that both lecturers and

students made decisions on what content should be assessed and the manner of assessment.

4.7.3 Participants' opinions regarding the value of the various assessment forms in relation to mastering the content of modules

In this section of the questionnaire, the researcher aimed to determine how students viewed the value of different forms of assessment. Table 4.5 is an illustration of the data obtained from Question 19 in section 1.5 of the questionnaire.

TABLE 4.5: PARTICIPANTS OPINIONS REGARDING THE VALUE OF VARIOUS ASSESSMENT METHODS [N=110] [n=110]
(Question 19, Section 1.5 of the questionnaire)

ASSESSMENT METHOD	A WASTE OF TIME	OF MINIMUM VALUE	OF MORE VALUE	VERY VALUABLE	NOT APPLICABLE	N
Portfolios	28%	36%	24%	3%	9%	110
Work sheets	16%	20%	35%	18%	10%	110
Journals (Diaries)	44%	25%	9%	0%	23%	110
Demonstrations	1%	5%	25%	61%	7%	110
Presentations	10%	29%	34%	22%	5%	110
Practical skills tasks (during practical periods)	1%	0%	17%	77%	4%	110
Big assessment tests (1-3 hour papers under examination conditions, equal to semester tests)	0%	3%	26%	68%	3%	110
Big class test (20-100 marks, for example those written during test periods, smaller than big assessment tests)	0%	5%	31%	62%	2%	110
Small class tests (5-10 marks, during contact sessions, contributes to participation mark)	10%	28%	44%	17%	0%	110
Small class tests (5-10 marks, during contact sessions, which doesn"t contributes to participation mark)	36%	33%	28%	3%	0%	110
Oral assessments	9%	22%	32%	35%	2%	110
Multiple choice tests (on multiple choice cards or on eFundi)	2%	15%	50%	31%	2%	110
Big theoretical assignments (Essays, referents)	5%	29%	44%	15%	7%	110
Practical reports	3%	16%	57%	25%	0%	109
Project work	5%	27%	50%	15%	2%	110
Debates	20%	35%	20%	9%	16%	110
Open book exams in a venue under examination conditions	14%	18%	43%	7%	18%	110
Open book exams in the form of “take home” papers (take-home exam)	16%	15%	34%	17%	16%	110

Figure 4.14 is a graphical representation of data obtained from Question 19 on which assessment methods participants deemed of most value.

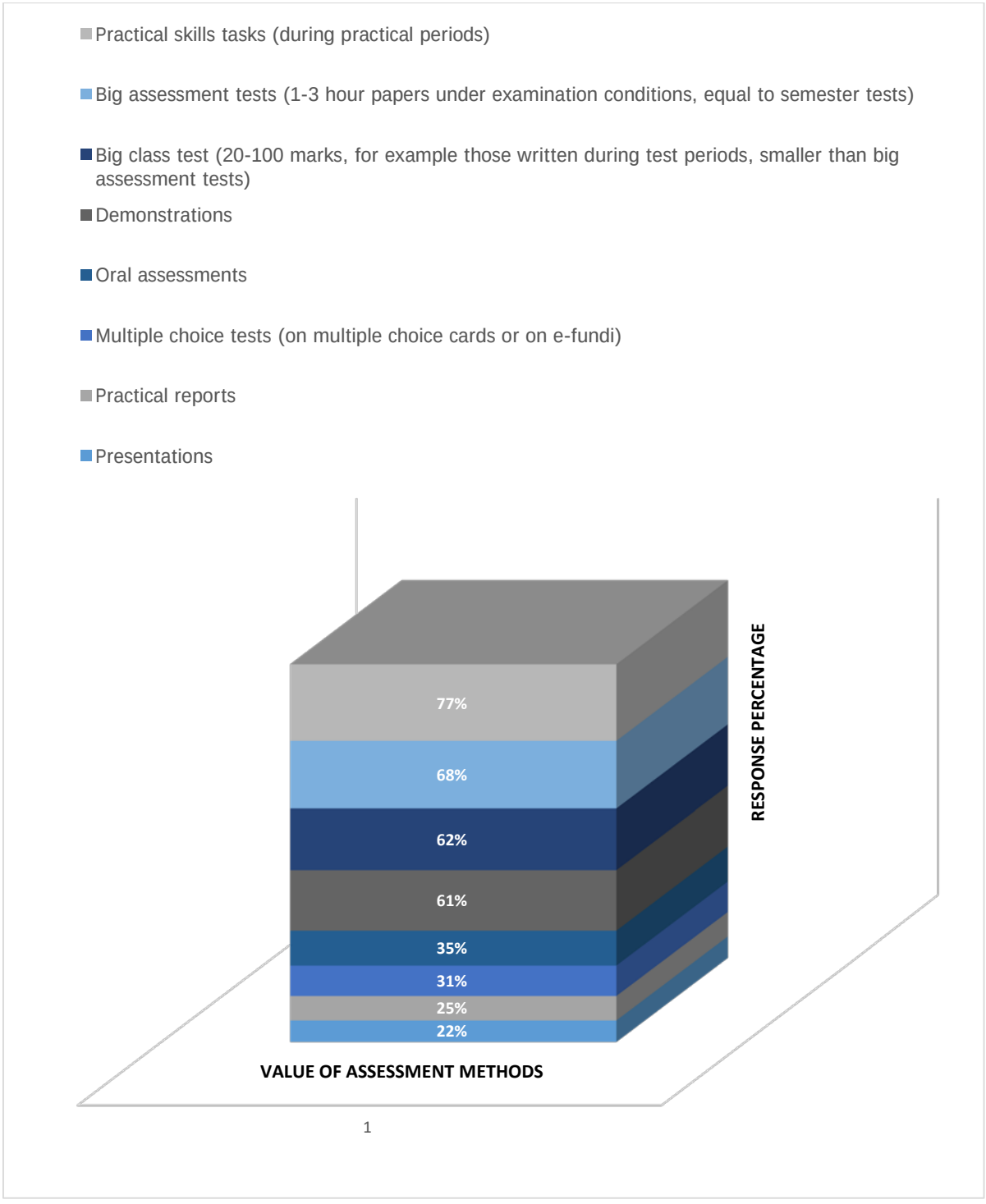


FIGURE 4.14: THE RANKING OF ASSESSMENT METHODS ACCORDING TO MOST VALUE [N=110] [n=110]
(Question 19, Section 1.5 of the questionnaire)

Practical skills tasks were indicated as very valuable by the majority of 85 (77%) participants, while 75 (68%) ranked big assessment tests as very valuable. Demonstrations and big class tests were also ranked very valuable by 67 (61%) and 68 (62%) of participants respectively. Participants ranked the above-mentioned assessment methods as the top very valuable assessment methods.

Assessment methods, which were also ranked very valuable by some participants, were oral assessments (35%), multiple choice tests (31%), practical reports (25%) and presentations (22%). The lowest ranking assessment methods, according to value, were the following: Worksheets (18%), Small class tests which contribute to participation mark (17%), open book exams in the form of “take-home papers” (17%), big theoretical assignments (15%), project work (15%), debates (9%), open book exams under examination conditions (7%), portfolios (3%), and small class tests which do not contribute to the participation mark (3%). The option of journals (diaries) was not selected by any students.

4.7.4 Assessment methods and anxiety levels experienced by students

Question 20 of the questionnaire aimed to obtain data about the anxiety levels students experience when engaging with different assessment methods. Table 4.6 is a summary of participants’ levels of anxiety experienced with each assessment type. They could indicate if they experienced “much”, “moderate”, “little” or “none” anxiety with each assessment type used in their programme.

TABLE 4.6: ASSESSMENT METHODS AND ANXIETY LEVELS OF PARTICIPANTS [N=110] [n=110]
(Question 20, Section 1.5 of the questionnaire)

	LEVELS OF ANXIETY				
ASSESSMENT METHOD	MUCH	MODERATE	LITTLE	NONE	NOT APPLICABLE
Oral assessments	87%	5%	4%	3%	1%
Big assessment tests (- hour papers under examination conditions, equal to semester tests)	56%	30%	10%	3%	1%
Big class test (- marks, for example those written during test periods, smaller than big assessment tests)	46%	35%	15%	2%	1%
Presentations	42%	23%	24%	10%	2%
Debates	23%	22%	16%	10%	29%
Big theoretical assignments (Essays, referents)	18%	30%	27%	14%	11%
Project work	12%	35%	35%	16%	3%
Demonstrations	8%	17%	37%	30%	7%
Practical skills tasks (during practical periods)	7%	36%	40%	16%	0%
Small class tests (- marks, during contact sessions, contributes to participation mark)	7%	35%	43%	15%	1%
Open book exams in a venue under examination conditions	7%	25%	31%	14%	24%
Practical reports	6%	22%	49%	23%	0%
Portfolios	5%	14%	35%	28%	18%
Small class tests (- marks, during contact sessions, which doesn"t contributes to participation mark)	5%	16%	29%	47%	4%
Multiple choice tests (on multiple choice cards or on eFundi)	5%	28%	48%	18%	1%
Journals (Diaries)	3%	6%	17%	39%	35%
Work sheets	1%	15%	35%	32%	18%

According to the data obtained from Question 20, the top five assessment methods that cause the most anxiety (ranked from the highest number of responses to the lowest), include (cf. Table 4.6):

i. Oral assessments (87%);
ii. Big assessment tests (- hour papers under examination conditions, equal to semester tests) (56%);
iii. Big class test (- marks, for example those written during test periods, smaller than big assessment tests) (46%);
iv. Presentations (42%); and
v. Debates (23%).

The five assessment methods that caused the least amount of anxiety, according to participants (ranked from the highest number of responses to the lowest), include (cf. Table 4.6):

i. Small Class tests (-marks, during contact sessions, does not contribute to participation mark) (47%);
ii. Journals (Diaries) (39%);
iii. Work sheets (32%);
iv. Demonstrations (30%); and
v. Portfolios (28%).

4.7.5 The causes of anxiety experienced during assessment

The purpose of Question 21 of the questionnaire was to identify the causes of anxiety experienced during the undertaking of assessment, according to participants. The participants could select between one of four options in response to this question. The options included "The type of assessment", "The content of the module", "The type of assessment and content of the module" and "other". Figure 4.15 is a graphical representation of responses received to this question.

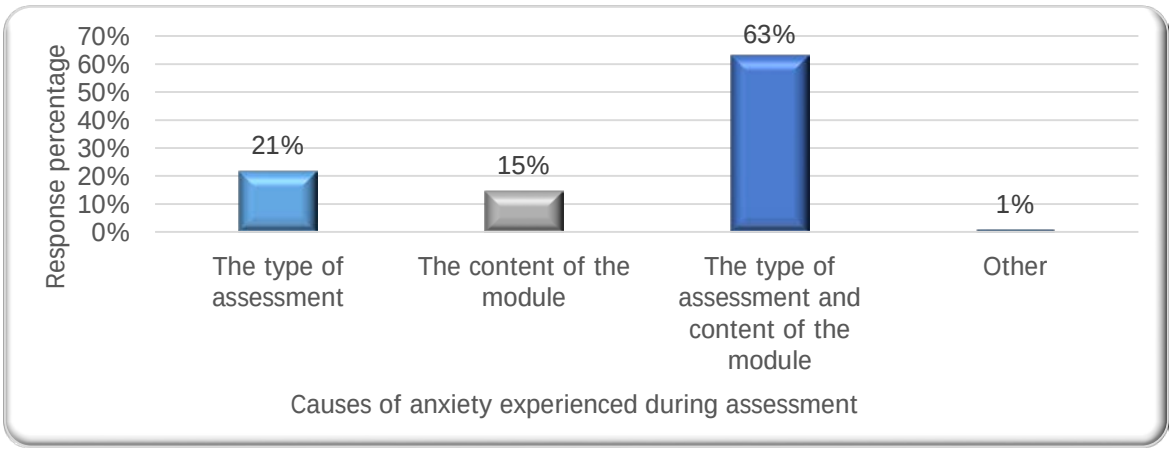


FIGURE 4.15: CAUSES OF ANXIETY EXPERIENCED DURING ASSESSMENT [N=110] [n=110]
(Question 21, Section 1.5 of the questionnaire)

After analysing the results of Question 21, it was found that 82 (63%) participants felt that anxiety experienced during assessment was caused by the type of assessment and the content of the module. A number of 28 (21%) participants indicated that only the type of assessment was causative of anxiety and 19 (15%) indicated that anxiety was caused

mainly by the content of the module. One (1%) participant stated another cause for anxiety, stating that it was “The time which I have to prepare and the volume of work”.

4.7.6 Module codes in which participants experience the most anxiety during assessment

Participants were asked to write down the module code in which they experienced the most anxiety in Question 22 of the questionnaire. The researcher consolidated and grouped the responses according to subjects and calculated the amount of participants who indicated each module code as the subject in which they experience the most anxiety.

Figure 4.16 is a graphical representation of which modules cause participants the most anxiety, calculated in terms of the number of times each module or module code was cited by students. The reason for the calculation method is that Question 22 was an open-ended question; participants could disclose more than one answer and the amount of responses was [n = 196].

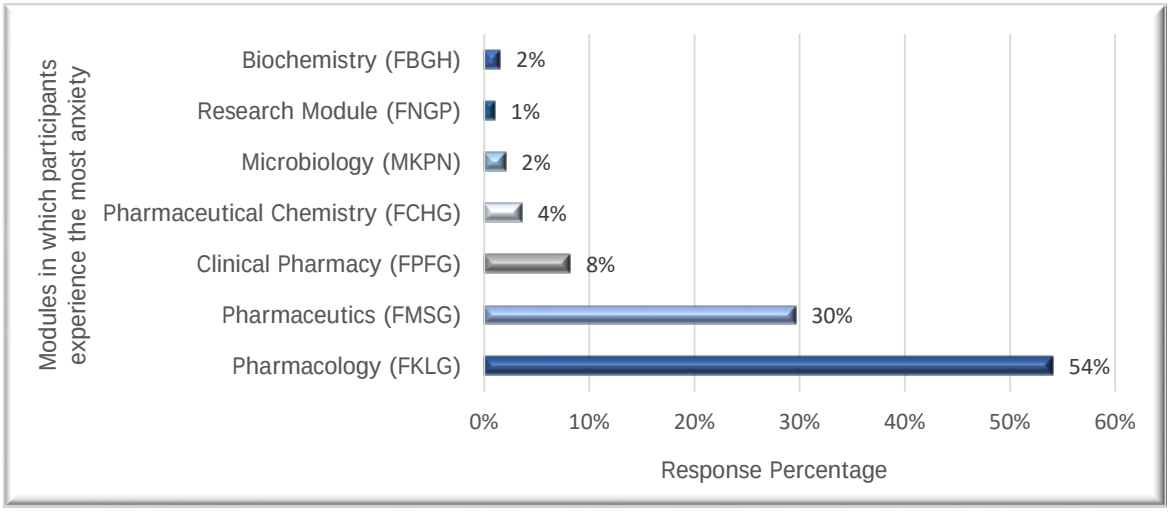


FIGURE 4.16: MODULES CITED IN WHICH PARTICIPANTS EXPERIENCE THE MOST ANXIETY [N = 110] [n=196]
(Question 22, Section 1.5 of the questionnaire)

Out of the 110 participants to answer the question, 106 (54%) participants disclosed that Pharmacology (FKLG) was the module in which they experience the most anxiety and 58 (30%) participants indicated that they experienced the most anxiety in the Pharmaceutics (FMSG). A number of 16 (15%) participants stated that Clinical Pharmacy (FPFG) brought on the most anxiety. Other modules cited where some participants experienced anxiety were Pharmaceutical Chemistry (FCHG) (seven participants), Microbiology (MKPN) (four

participants), Research Module (FNGP) (two participants) and Biochemistry (FBCG) (three participants).

4.7.7 Reasons cited for anxiety experienced during certain assessment methods and/or modules

Question 23 asked participants to supply reasons why they experience anxiety during certain assessment methods or modules. This was an open-ended question. The researcher analysed and sorted the explanations supplied by participants and then categorised the responses into themes. Themes derived from the question and the amount of participants implicating each theme are summarised in Table 4.7. Out of the 110 participants, only 105 responded to this question.

TABLE 4.7: THEMES FOUND IN EXPLANATIONS OF WHY PARTICIPANTS EXPERIENCE ANXIETY DURING CERTAIN ASSESSMENT METHODS OR MODULES AND THE NUMBER OF PARTICIPANTS THAT INDICATED EACH THEME AS A REASON [N = 110] [n=105] (Question 23, Section 1.5 of the questionnaire)

THEMES FOUND IN REASONS CITED BY PARTICIPANTS ON WHY ANXIETY IS EXPERIENCED IN CERTAIN MODULES	NUMBER OF PARTICIPANTS WHO CITED THEME	PERCENTAGE
Workload	70	67%
Communication constraints regarding assessment criteria	38	36%
Content difficulty	35	33%
Assessments do not reflect class presentation	26	25%
Types of questions in assessments	25	24%
Application and higher cognitive questions	21	20%
Time constraints	20	19%
Oral assessment method	11	10%
Internal pressure to perform	8	8%
Lecturer personality	4	4%
Lecturers' unreasonable expectations	4	4%
Lecturers' mark questions strictly	2	2%
Preconceived notions and anxiety of subject	2	2%

According to the themes derived from the answers of participants, 70 (67%) participants indicated that a high workload was the cause of their anxiety. Other reasons why participants experienced anxiety were: limitations in communication in terms of assessment, indicated by 38 (36%) participants; 35 (33%) participants stated that the content difficulty was causative of their anxiety; while 26 (25%) stated that they experienced anxiety when assessments do not reflect what is done in class.

Table 4.8 contains example quotes derived from the responses to this question, which leans to each theme.

TABLE 4.8: QUOTES ON THEMES FOUND IN EXPLANATIONS OF WHY PARTICIPANTS EXPERIENCE ANXIETY DURING CERTAIN ASSESSMENT METHODS OR MODULES [N = 110] *[n=105]
(Question 23*, Section 1.5 of the questionnaire) (Table continues on next page)

THEME	QUOTES
Workload	• "For example a high workload for a test which only consists of 30 marks and you have class the whole week". • "Volume of work – many facts that you have to keep in your head. Detail and depth of knowledge required". • "A big amount of work and difficult. A Person always stresses if you will pass or not".
Time constraints	• "It is a vast amount of work and we have a very short period to study". • "Mass of work, short notice". • "The amount of work. Short period of time to master all the work".
Content difficulty	• "work is very difficult combined with a high volume of work." • "The questions (in assessment) is asked in a difficult way". • "a great amount of difficult work".
Types of questions asked in assessments	• "The questions are asked in a difficult manner". • "Uncertainty about the types of questions and the interpretation of questions in tests. Questions are sometimes asked in an unclear fashion".
Oral assessment	• "oral tests, practicals, big tests and exams". • "oral exams, difficult papers, including type 2 multiple-choice questions".
Lecturer personality	• "Type of lecturer". • "Some modules reputations proceed them, which causes anxiety before you even attended the module. It also applies to the lecturers".
Communication constraints regarding assessment criteria	• "do not know what will be asked, unsure if I prepared and studied correctly for assessments". • "It is much work to study and I do not always understand how it will be asked".
Internal pressure to perform	• "I want to do good and perform in my work, so the pressure to perform causes my anxiety". • "I usually do bad in the first test and then have to make up by doing well in the following test, which causes stress/anxiety".
Lecturers' mark questions strictly	• "It is a vast amount of work and we have a very short period to study. The lecturer marks strictly sometimes and wants specific answers even though there is more than one answer".
Lecturers' unreasonable expectations	• "Masses of work are prescribed. Difficulty of work. Lecturers expect you have to have the knowledge of someone who has 50 years' worth of experience".
Application and higher cognitive questions	• "Knowledge is asked in depth". • "workload and the application of knowledge". • "Mostly the volume of work is too much to master, to understand and to display insight".
Assessments do not reflect class presentation	• "Great volumes of work and too little time to prepare, a lot of application and to little practicing of examples in class". • "A lot of work, rarely get through everything, what you think is correct is usually not what the lecturer expects".

Preconceived notions and anxiety of subject	• "Preconceived notions of the module. Peoples stories of how bad it is. Rather you find out for yourself and give your participation".

4.8 FEEDBACK

In this section of Chapter 4, an overview of the results obtained from Question 24 to 27, in Section 1.6, concerning feedback, is presented.

4.8.1 Feedback received on different aspects of modules

Participants were asked to indicate if they received regular feedback on various aspects of the modules they are enrolled for in Question 24 of the questionnaire. Table 4.9 is a graphic representation of the data obtained from Question 24. Participants had the option of selecting one of four options to answer each question, "never", "minimal", "most of the time" and "always".

TABLE 4.9: YOUR LECTURERS' REPORT BACK REGULARLY ABOUT THE FOLLOWING ASPECTS IN THE MODULES WHICH YOU ARE ENROLLED FOR [N=110] [n=109; n=110] (Question 24.1-24.6, Section 1.6 of the questionnaire)

YOUR LECTURERS' REPORT BACK REGULARLY ABOUT THE FOLLOWING ASPECTS IN THE MODULES WHICH YOU ARE ENROLLED FOR		NEVER	MINIMAL	MOST OF THE TIME	ALWAYS	n
24.1	Your achievements in comparison to the rest of the class	45%	16%	27%	12%	110
24.2	Outcomes you have mastered	22%	43%	31%	5%	110
24.3	Student(s) strengths (in relation to the class or individually)	38%	47%	14%	1%	110
24.5	Student(s) weaknesses (in relation to the class or individually)	39%	46%	12%	3%	110
24.6	Aspects which requires further support and or help from lecturer	20%	48%	29%	3%	109

Question 24.1 enquired about the frequency of feedback on individual achievements compared to the rest of the class. Of the 110 participants responding to this question, 49 (45%) stated that they never receive feedback about their individual achievements in comparison to the rest of the class, while 30 (27%) indicated that they received feedback about their individual achievements most of the time.

In response to Question 24.2, which asked participants if they received feedback regarding the outcomes they have mastered, 47 (43%) participants indicated that they received

minimal feedback, although 34 (31%) participants stated that they did receive feedback regarding the mastering of outcomes most of the time.

Participants were asked if they received feedback regarding their strengths in relation to the class or individually in Question 24.3. A number of 52 (47%) participants stated that this was minimally the case and 42 (38%) indicated that feedback was never given regarding their strengths.

Question 24.4 asked participants if they received feedback regarding students' weaknesses in relation to the class or individually. According to 51 (46%) participants, feedback in this regard was minimal, while 43 (39%) participants indicated that they never receive such feedback.

In response to Question 24.5, 52 (48%) participants indicated that they receive minimal feedback on aspects which required further support and help from the lecturer, while 22 (20%) participants stated that they never received feedback concerning these aspects. Of the 109 participants to respond to this question, 32 (29%) stated the contrary, indicating that they did receive feedback about aspects of the module which required further support and/or assistance from the lecturer, most of the time.

4.8.2 Assessment tools/feedback format used to provide feedback

Table 4.10 is a graphical representation of the data obtained from Question 25 inquiring about the assessment tools or the format used by lecturers to supply feedback to students. Participants could select one out of four options, "never", "minimal", "most of the time" and "always", to indicate in which format feedback is supplied to them.

TABLE 4.10: THE FORMAT OF REPORT/ASSESSMENT TOOLS USED TO PROVIDE FEEDBACK [N=110] [n=109; n=110]
(Question 25.1 - 25.5, Section 1.6 of the questionnaire)

QUESTION	FORMAT OF FEEDBACK	NEVER	MINIMAL	MOST OF THE TIME	ALWAYS	N
25.1	Memorandums are placed on eFundi and students can work through it by themselves	4%	22%	65%	9%	109
25.2	Memorandums are discussed in class	2%	7%	70%	21%	110
25.3	Marking schematic or rubric is made available, in either the study guide, eFundi or in the class	29%	52%	18%	1%	110
25.4	Oral feedback is given in class	7%	26%	55%	12%	110
25.5	Individual feedback (written or oral)	60%	30%	10%	0%	109

Interesting findings resulted from the data, as depicted in Table 4.10. Participants were much divided in selecting answers to some questions. In Question 25.1, 77 (70%) participants indicated that feedback is mostly supplied to students by means of memorandums, which are discussed in class. A significant number of 71 (65%) participants indicated that feedback was mostly provided in the form of memorandums that are supplied on eFundi, which students can read themselves in Question 25.2. Contrary to the latter finding, a number of 24 (22%) participants indicated that they minimally received feedback as a memorandum on eFundi and four (4%) participants selected never.

In response to Question 25.4, oral feedback in class was the indicated by 60 (55%) participants as the way in which they received feedback most of the time. Opposing the previous finding, 37 (33%) participants indicated that they never or minimally receive oral feedback in class. A number of 57 (52%) participants indicated that they minimally received feedback in the format of a marking schematic or rubric (Question 25.3), while 32 (29%) stated they never received feedback in this manner. Regarding individual written or oral feedback, in Question 25.5, the response was very negative. A combined number of 98 (90%) participants indicated that they minimally (30%) or never (60%) receive feedback in this manner.

4.8.3 The presentation of performance feedback supplied to participants

Question 26 enquired about the manner of presentation of feedback supplied to participants. Question 26.1 was answered by 109 participants, of whom 71 (65%) indicated that feedback was always given by means of marks/symbols/percentages and 37 (34%)

participants selected most of the time in response. In response to Question 26.2, the majority, 61 (57%) participants, indicated that they never receive feedback in the form of descriptive comments and 29 (36%) participants selected “minimally” as a response (n=107). Similarly, 61 (60%) and 29 (29%) participants respectively, selected never and minimally in response to Question 26.3, which enquired if feedback was ever presented as a combination of marks/symbols/percentages and descriptive feedback [n=101].

4.8.4 Participants’ opinions regarding feedback after assessment

Table 4.11 is a graphical representation of data received from the responses to Question 27, which aimed to determine how students’ viewed feedback after assessments. Students were given options as responses to the statement “You experience feedback after assessments as”, and could select one of four electives to rate the rate the response, “Agree Strongly”, “Agree Mostly”, “Disagree Mostly” and “Disagree Strongly”.

TABLE 4.11: PARTICIPANT’S OPINIONS OF FEEDBACK AFTER ASSESSMENT. [N=110] [n=110]
(Question 27, Section 1.6 of the questionnaire)

QUESTION	FEEDBACK AFTER ASSESSMENT	DISAGREE STRONGLY	DISAGREE MOSTLY	AGREE MOSTLY	AGREE STRONGLY	N
27.1	A way in which to make you aware of where you can improve	2%	11%	45%	43%	110
27.2	An aid to help you better your learning methods	6%	18%	48%	27%	110
27.3	Just another way to make you feel as if you will never master the content of the module	50%	35%	11%	4%	110
27.4	Fair and reflective of the outcomes in the study guide	1%	29%	62%	8%	110

In Question 27.1, the majority of 49 (45%) participants agreed mostly that they experience feedback after assessment as a way to make them aware of where they can improve and 47 (43%) participants agreed strongly with this statement. In response to Question 27.2, 53 (48%) participants agreed mostly - that feedback helped them to positively alter their learning methods and 30 (27%) agreed strongly.

It is evident from the data obtained from Question 27.3 that participants did not view feedback negatively, as 55 (50%) disagreed strongly and 39 (35%) disagreed strongly that feedback is just another way to make them feel that they will never master the module

content. Participants had varied responses to Question 27.4, which stated that feedback is fair and reflective of outcomes in the study guide. While 67 (61%) participants mostly agreed with the latter statement, a significant number of 34 (29%) disagreed mostly.

4.9 GENERAL EXPERIENCES REGARDING ASSESSMENT

Section 1.7 of the questionnaire, Questions 28 to 37, was designed to collect data about participants' general experiences regarding assessment. This section consisted of closed questions, where students could choose from four options, and open-ended questions where students could state their own experiences regarding certain aspects of assessment.

4.9.1 Participants' responses regarding ranked statements about general experiences of assessment

In this section of the questionnaire, participants were asked to rank statements about their general experience concerning assessment. Students could select one of the following four options to score each statement, "disagree strongly", disagree mostly", "agree mostly" and "agree strongly". The responses received in this section is summarised in Table 4.12.

TABLE 4.12: INDICATE YOUR OPINION REGARDING THE FOLLOWING STATEMENTS AND QUESTIONS (WITHIN CONTEXT OF YOUR OWN MODULES) [N=110] [n=110]
(Question 28-37, Section 1.7 of the questionnaire)
(Table continues on next page)

QUESTION	STATEMENT	DISAGREE STRONGLY	DISAGREE MOSTLY	AGREE MOSTLY	AGREE STRONGLY	N
28.1	You feel overwhelmed with the amount of work in most of your modules.	5%	19%	39%	36%	110
28.2	You feel you write to many small and big tests which contribute to your marks.	27%	42%	22%	9%	110
28.3	The results of formative assessment (all assessments except formal scheduled class tests and exams) during the semester is not reflective of your academic capabilities.	22%	36%	30%	12%	110
28.4	Semester tests and exams are the only forms of assessment which really tests if you mastered the content of your modules.	15%	32%	34%	20%	110
28.5	You will only participate in assessment activities if it contributes to your participation mark.	13%	25%	40%	23%	110
28.6	You actively take part in all learning activities, regardless if it contributes to your marks or not.	11%	36%	35%	17%	110
28.7	The Final exam is the most important part of the assessment plan.	3%	10%	35%	52%	110
28.8	According to you, it is not really necessary that students write exam in some modules, the continuous assessment is enough to ensure you master the work.	40%	28%	23%	9%	110
28.9	You will work harder during the semester if it is possible for you to be promoted on the basis of your participation mark (promoted means that you do not have to write exams).	6%	5%	17%	72%	109
28.10	All students should be allowed to write the final exam, regardless of their participation mark.	31%	42%	14%	13%	109
28.11	Exams are essential, because it gives you the opportunity to study the work as a whole and be assessed accordingly.	2%	6%	40%	52%	109
28.12	Your exam marks are usually not comparable to your participation mark, there is a big difference.	17%	45%	31%	7%	109
29	You and/or other students misuse the second exam opportunity to work out an exam schedule which caters to your own needs.	90%	5%	3%	3%	110
30	Exams do not necessarily assess your knowledge and skills, but rather your ability to work under time constraint pressure.	25%	36%	34%	5%	110
32	You always feel stressed before formal tests and exams, because you are unsure about what the lectures expect from you.	3%	24%	45%	29%	110
34	You feel that tests and exams only evaluate your ability to memorise facts.	10%	42%	36%	12%	110
35	You feel tests and exams evaluate your ability to apply the knowledge you acquired in real life situations.	1%	26%	50%	23%	109

36	Most of your lecturers supply you with help and support in situations, which you do not perform well in assessments.	9%	26%	48%	16%	110

Out of 110 participants who responded to Question 28.1, 43 (39%) participants indicated that they agreed mostly with the statement that they feel overwhelmed with the amount of work in most of their modules, while 40 (36%) participants agreed strongly with this statement.

According to 46 (42%) participants, they disagreed mostly with the statement, in Question 28.2, that they feel they write too many small and big tests that contribute to their marks, while 30 (27%) disagreed strongly with this statement. In contrast with the latter findings, 24 (22%) participants agreed mostly. Concerning the statement in Question 28.3, that the results of formative assessments during the semester is not reflective of their academic capabilities, 40 (36%) participants mostly disagreed, 33 (30%) mostly agreed and a number of 24 (22%) participants strongly disagreed.

Participants had mostly opposite opinions regarding Question 28.4, stating that semester tests and exams are the only forms of assessment that really test if they mastered the content of their modules. A number of 37 (34%) participants agreed mostly with the statement, while 35 (32%) disagreed mostly. A number of 22 (20%) participants agreed strongly with this statement.

Of the 110 participants who responded to Question 28.5, 44 (40%) participants mostly agreed that they would only participate in assessment activities if it contributes to their participation mark and 25 (23%) agreed strongly. In contrast, 28 (25%) participants disagreed mostly with the statement. In Question 28.6, the responses concerning the statement that they actively take part in all learning activities, regardless of whether it contributes to your marks or not, differ greatly. Of the participants that responded to the latter, 40 (36%) mostly disagreed with the statement, while 39 (35%) mostly agreed.

In response to Question 28.7, 57 (52%) participants strongly agreed with the statement that the final exam is the most important part of the assessment plan, while 38 (35%) mostly agreed. A variety of responses were received towards Question 28.8, which states that it is not really necessary that students write exam in some modules and that continuous assessment is enough to ensure they mastered the work. A number of 44 (40%)

participants disagreed strongly with this statement, while 31 (28%) disagreed mostly. Of the participants, 25 (23%) agreed mostly with this statement.

An overwhelming majority of 79 (72%) participants agreed strongly with the statement in Question 28.9 that they would work harder during the semester if there were a possibility of promotion based on participation marks. In response to Question 28.10, most participants disagreed with the statement that all students should be allowed to write the final exam, regardless of their participation mark. A number of 46 (42%) participants disagreed mostly, while 34 (31%) disagreed strongly with the latter statement. The majority of participants agreed with the statement in Question 28.11 that exams are essential, because it gives them an opportunity to study the work as a whole and to be assessed accordingly. Concerning the latter statement, 57 (52%) participants strongly agreed and 44 (40%) agreed mostly.

A total number of 110 participants responded to Question 32, of which 49 (45%) agreed mostly with the statement that they feel stressed before assessments because they are unsure of lecturer expectancies and 32 (29%) agreed strongly. Only 26 (24%) participants disagreed mostly with the statement and three (3%) disagreed strongly.
The responses to Question 34, which stated that participants felt that assessments only evaluated their ability to memorise facts, were divided. While the majority of participants (52%) disagreed to some degree with this statement, a significant number of participants (48%) agreed at a level that this is true. A number of 46 (42%) of participants disagreed mostly with this statement, while 40 (36%) agreed mostly. Opposing the latter question, Question 35 asked if participants felt that assessments evaluate their ability to apply knowledge in real life situations. Most participants agreed in some way with this statement; 55 (50%) participants agreed mostly and 25 (23%) agreed strongly. Only 28 (26%) participants disagreed mostly with this statement.

In terms of support, Question 35 aimed to find out if students were of opinion that lecturers supply them with help and support when they do not perform well in assessments. Of the 110 participants responding, 53 (48%) participants agreed mostly that lecturers do assist them and 29 (26%) disagreed mostly.

4.10 THE MOTIVATION FOR PARTICIPANT RESPONSES

In these questions, students were asked to motivate their responses to some questions or respond to questions.

4.10.1 The comparability of exam marks to participation marks

In Question 28.12.1, participants were asked to motivate why they agree or disagree with the statement that their exam marks are usually not comparable to their participation mark. There were different opinions regarding the statement that participants' exam marks are usually not comparable with their participation mark (Question 28.12). Out of the responses received, 49 (45%) participants disagreed mostly with this statement, 18 (17%) disagreed strongly, while 34 (31%) agreed mostly with this statement. Only eight (7%) participants agreed strongly with the statement (cf. Table 4.12)

The researcher organised the responses of participants into themes, and statistically summarised the number of responses according to each theme. Figure 4.17 is a graphical representation of themes retrieved and the amount of participants who stated each theme as a reason why their exam mark is usually not comparable to their participation mark.

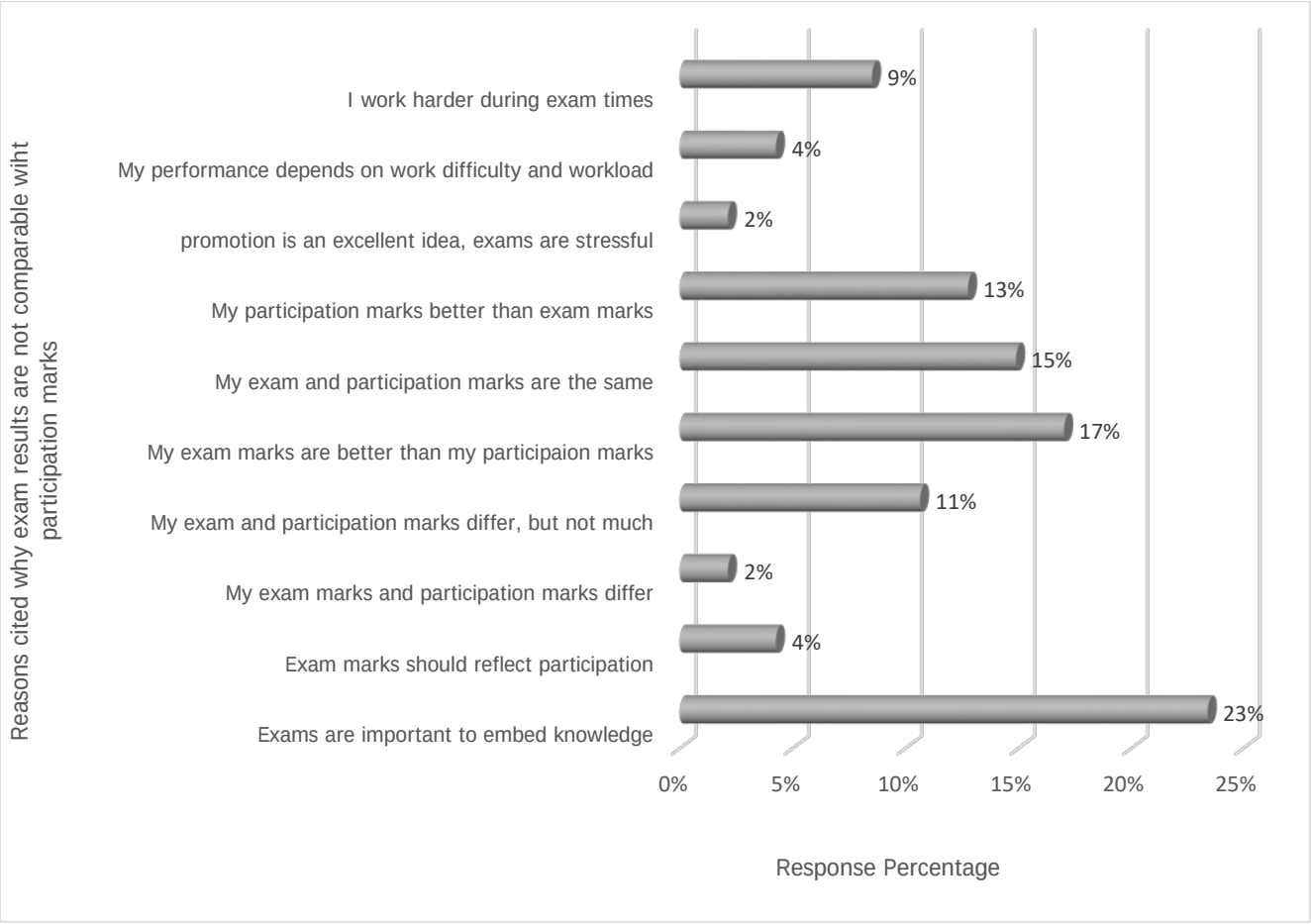


FIGURE 4.17: REASONS CITED WHY EXAM RESULTS ARE NOT COMPARABLE WITH PARTICIPATION MARKS [N=110] [n=47]
(Question 28.12.1, Section 1.7 of the questionnaire)

The main reason participants stated why their exam results are not comparable with their participation marks is that exams embed knowledge. Out of the 47 participants to respond to this question, 11 (23%) participants stated the latter as the reason why their exam results are usually not comparable with their participation mark. A quantity of eight (17%) participants stated that their exam marks were better than their participation marks, while seven (15%) participants indicated that their exam and participation marks were the same. A number of six (13%) participants indicated that their participation marks were better than their exam marks, while five (11%) indicated that their exam marks and participation marks differed but not much. Only four (9%) participants stated that that they worked harder during exam times and two participants (4%) indicated that their performance depended on the difficulty of the content and workload.

Table 4.13 contains examples of the quotes derived from this open question, pertaining to each theme.

TABLE 4.13: THEMES AND QUOTES OF REASONS PARTICIPANTS CITED WHY THEIR PARTICIPATION MARKS AND EXAM MARKS ARE NOT COMPARABLE
(Question 28.12.1, Section 1.7 of the questionnaire) [n=47]

THEME	QUOTES
Exams are important to embed knowledge	• "I think exams help you to review work in order to apply it." • "Exams and tests are important for students to learn and apply their knowledge but I think there is importance in testing student's practical skills."
Exam marks should reflect participation	• "Your participation mark should reflect your exam mark because it is an indication if you understand and could master the module." • "Your exam mark should half match your participation mark."
My exam marks and participation marks differ	• "In most modules it differs, but in about two modules the exam and participation marks are the same."
My exam and participation marks differ, but not much	• "There usually is not a great difference." • "At the most about a 10-15% difference. Usually there is not a great difference."
My exam marks are better than my participation marks	• "In the exams, my marks is usually better because I have a longer time to prepare and do not have classes in between." • "it usually differs about 5 and 10 marks, but it depends on how much stress I experience during exams."
My exam and participation marks are the same	• "My marks are usual."

4.10.2 Comparability of amount input and module marks

In Question 31 of the questionnaire, respondents were asked to respond to the statement that they feel that the marks they receive in most of their modules are not reflective of the input and time they spent mastering the contents of the modules, by selecting one of four options. The options to respond to the statement were, "disagree strongly", "disagree mostly", "agree mostly" and "agree strongly". Figure 4.18 is an illustration of the data obtained from this question.

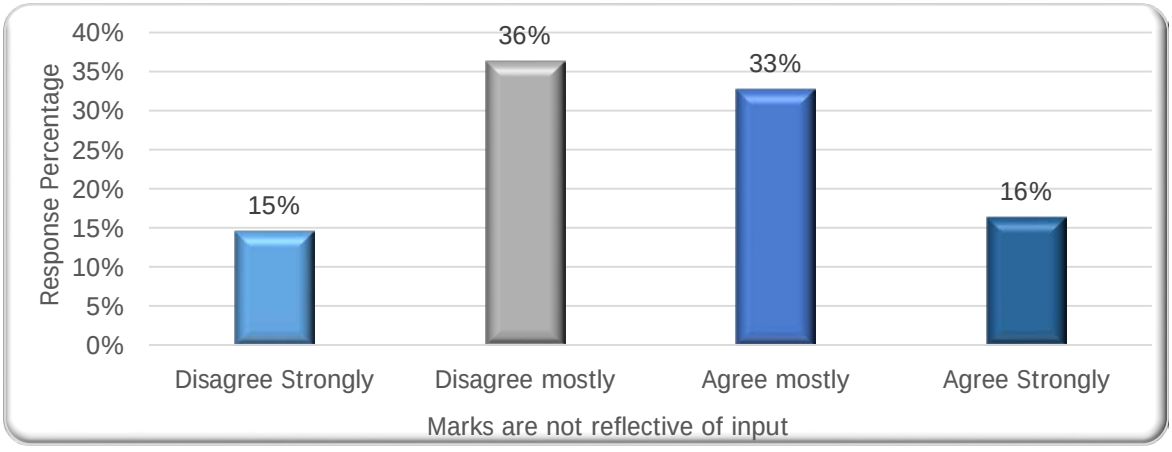


FIGURE 4.18: YOU FEEL THAT THE MARKS YOU RECEIVE FOR MOST OF YOUR MODULES ARE NOT REFLECTIVE OF THE INPUT AND TIME YOU SPENT MASTERING THE CONTENTS OF THE MODULES [N=110]
(Question 31, Section 1.7 of questionnaire)

The responses to this question were much divided. Some participants agreed with the statement that the marks they receive is not reflective of their effort. Statistically, 40 (36%) participants disagreed mostly and 16 (15%) participants disagreed strongly with this statement. In contrast to the latter, 36 (33%) participants agreed mostly with this statement, while 18 (16%) agreed strongly.

In Question 31.1 of the questionnaire, respondents were asked to motivate their response to Question 31. The researcher extracted themes from the responses received to this open question and calculated the amount of responses to each theme. The number of participants who stated each theme is graphically presented in Figure 4.19.

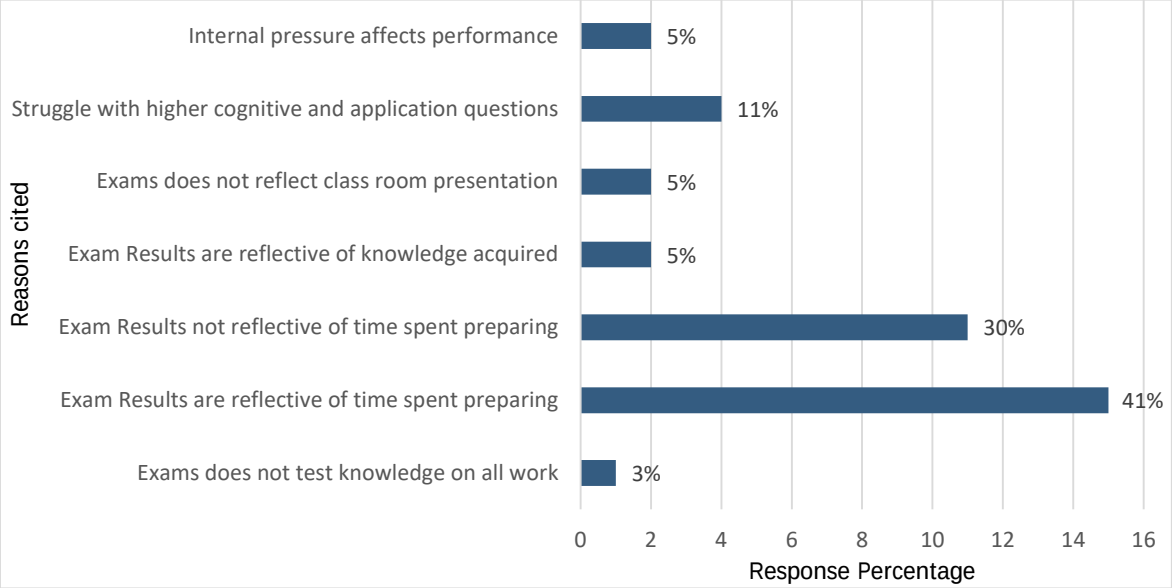


FIGURE 4.19: REASONS CITED MOTIVATING RESPONSES TO QUESTION ABOUT THE COMPARABILITY OF INPUT AND MARK RECEIVED IN MODULES [N=110] [n=37] (Question 31.1, Section 1.7 of the questionnaire)

The researcher found that 15 (41%) out of the 37 participants to answer this question felt that their exam results were reflective of the time they spent preparing, while 11 (30%) stated the opposite. Another theme, implied by four (11%) participants, was that they struggled with higher cognitive and application questions, and that their time spent preparing was not reflective in the marks the received. Few participants stated other

reasons; two (5%) stated that exams do not reflect classroom presentation; that exam results are reflective of the knowledge they acquired in the module; and that their own internal pressure affected their performance.

Table 4.14 contains examples of quotes pertaining to each theme derived from responses to open question regarding the comparability of participants'' marks received and amount of preparation for a module.

TABLE 4.14: THEMES AND QUOTES ON THE COMPARABILITY OF AMOUNT OF INPUT TO AND MARKS RECEIVED IN MODULES [N=37]
(Question 31.1, Section 1.7 of the Questionnaire)

THEME	QUOTES
Exams does not test knowledge on all work	• "An exam cannot test your knowledge on all aspects of the work."
Exam Results are reflective of time spent preparing	• "My results are usually reflective of input I gave preparing." • "The more time I spend on my work, the better my marks look."
Exam Results not reflective of time spent preparing	• "The time I put in to study al the content does not coincide with my marks. I work hard but my marks does not show it." • "In many cases I feel that I put in a lot of effort, but I am prone to understand the questions wrong or do not complete questions as required."
Exam Results are reflective of knowledge acquired	• "The marks I receive in exams shows what I know." • "Exams only test the theoretical part of the module."
Exams do not reflect class room presentation	• "Sometimes the content is asked in a difficult or unclear manner." • "Sometimes you would prepare very well, but the exam paper is mostly application and then it is more difficult because class did not help."
Struggle with higher cognitive and application questions	• "Sometimes you would prepare very well, but the exam paper is mostly application and then it is more difficult because class did not help."
Internal pressure affects performance	• "I always do my best and give my all. I try to understand the work well but anxiety lets me misunderstand the work."

4.10.3 The impact of pressure experienced during assessments

Question 33 of the questionnaire aimed to determine the impact that pressure experienced by participants during assessments had on their life. Participants could select one of four options in response to the statement "The pressure which you experience during assessment weeks and exams has a big negative impact on your life". The options participants could select were "disagree strongly", "disagree mostly", "agree mostly" and "agree strongly". Figure 4.20 is a graphical presentation of the responses to this statement.

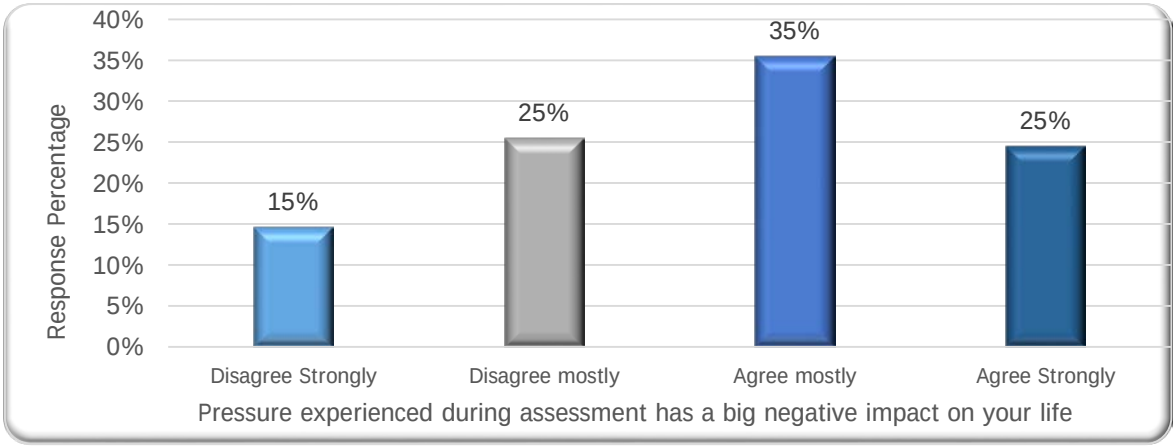


FIGURE 4.20: THE PRESSURE WHICH YOU EXPERIENCE DURING ASSESSMENT WEEKS AND EXAMS HAS A BIG NEGATIVE IMPACT ON YOUR LIFE [N=110]
(Question 33, Section 1.7 of the questionnaire)

Just more than half of the 110 participants agreed with the statement that the pressure they experienced during assessments had a negative impact on their lives. A total of 39 (35%) participants agreed mostly and 27 (25%) agreed strongly. Only 16 (15%) disagreed strongly with the statement and 28 (25%) disagreed mostly.

The researcher aimed to gather reasons for their responses in asking for a motivation in Question 33.1. A number of 68 participants cited reasons for their answer and could cite more than one reason. The number of different reasons cited amounted to [n=94]. The researcher sorted the responses into themes and calculated the amount of responses that cited each theme. Figure 4.21 is a graphical representation of the statistical analyses on the reasons why students stated that the pressure, which they experience during assessment periods, has a big negative impact on their life or not.

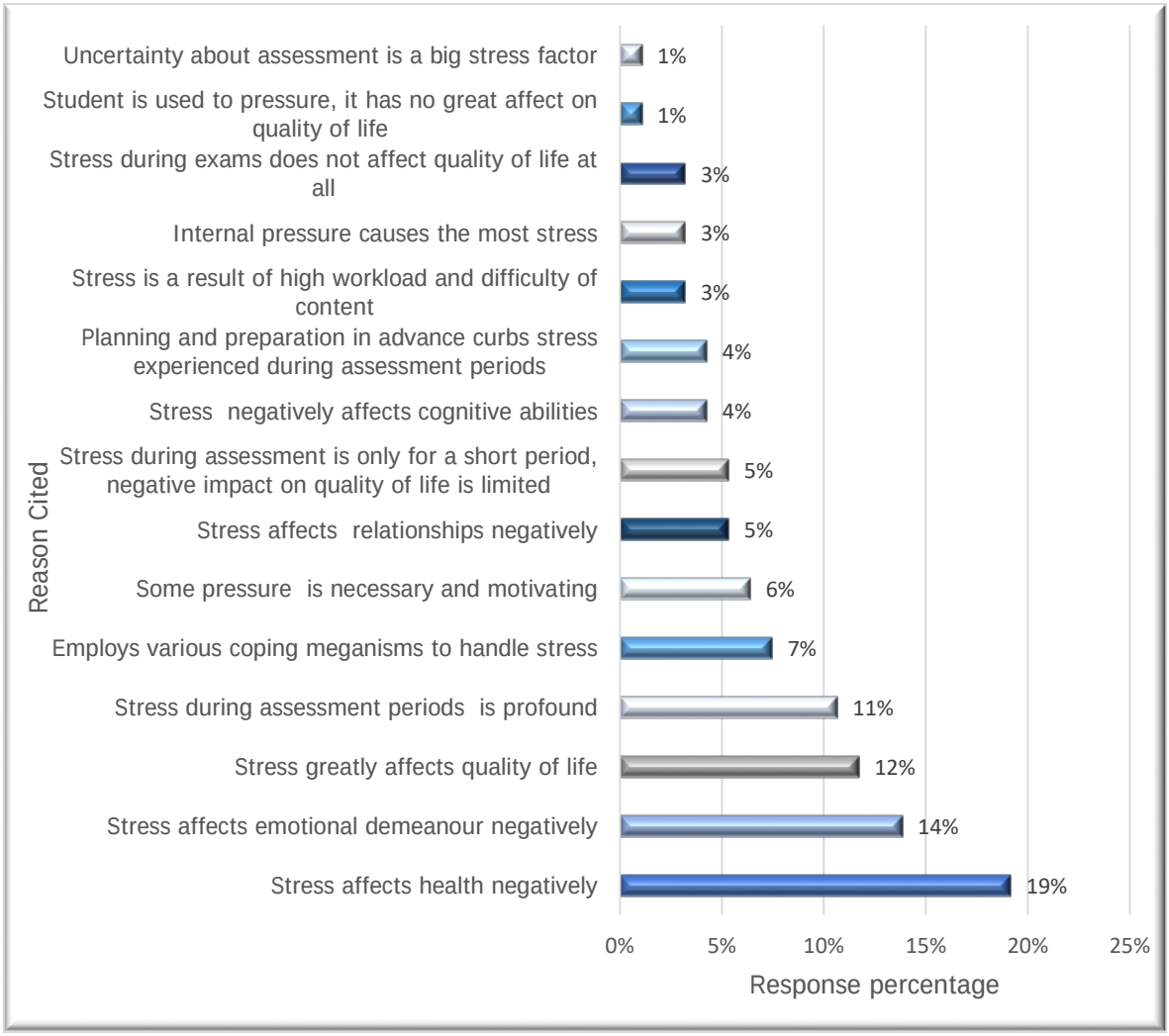


FIGURE 4.21: REASONS CITED BY PARTICIPANTS WHY THEY EXPERIENCE ASSESSMENT PRESSURE AS HAVING A BIG NEGATIVE IMPACT ON THEIR LIVES [N=110] *[n=94] (Question 33.1, Section 1.7 of the questionnaire)
(Response percentage was calculated in terms of the number of reasons cited and not the amount of participants to answer the question, participants could cite more than one reason)

Participants stated multiple reasons or motivations why they experienced the pressure during assessment periods as having a big negative impact on their lives. The most cited motivation by participants was that stress affected their health negatively; 18 (19%) participants implied this in their response. A number of 13 (14%) participants stated that stress affected their emotional demeanour in a negative way, while 11 (12%) gave reasons which suggest it affected their quality of life and 10 (11%) participants to respond to this question only stated that they experienced profound stress during assessment periods, but did not elaborate. Other reasons cited were that stress affected their relationships negatively (5%); inhibited or affected their cognitive abilities (4%). Some participants did not give reasons why assessment pressure altered their lives negatively, and rather supplied reasons for why they felt stressed. These participants stated they stress profoundly because

of the high workload and content difficulty (2%) and that their internal pressure (need to perform) was the greatest cause of stress during assessment periods (2%).

Some participants disagreed and implied that pressure during assessment periods did not have a big negative impact on their lives. Out of the 94 responses, seven (8%) implied that they employed various coping mechanisms to deal with the stress and six (7%) of participants stated that some pressure is necessary and motivating for them.

Various other themes stated by participants imply that assessment pressure did not affect them in a big negative way. Some of these themes are that the stress or pressure is only for a short period and the negative impact limited (5%); planning and advanced preparation alleviated stress during assessment periods (4%); and 3 (1%) participants even stated that stress during assessment periods did not affect their quality of life at all.

Table 4.15 contains examples of quotes that were received in response to Question 33.1.

TABLE 4.15: THEMES AND QUOTES ON REASONS CITED BY PARTICIPANTS WHY THEY EXPERIENCE ASSESSMENT PRESSURE AS HAVING A BIG NEGATIVE IMPACT ON THEIR LIVES [N=110] (Question 33.1, Section 1.7 Of the questionnaire)

THEMES	QUOTES
Stress affects health negatively	• "The pressure breaks down my immune system, because I always get sick during exams and assessment weeks." • "Ones health deteriorates drastically and you get burnt out most of the time."
Stress affects emotional demeanour negatively	• "I quickly get irritated with everything when I am stressed." • "Tests are stressful and gives me a lot of anxiety."
Stress greatly affects quality of life	• "I sleep poorly and I am very stressed." • "The stress and work load sometimes causes that other aspects of my life is not a priority anymore."
Stress during assessment periods is profound	• "Stress levels are very high during exams." • "(assessment periods) causes stress and stress has a big negative impact, I struggle to cope with it."
Employs various coping mechanisms to handle stress	• "I have learned to cope with stress, it does not affect me negatively." • "I try to be positive during the assessment week as that helps me to get through it."
Some pressure is necessary and motivating	• "One needs optimal pressure (not too much and not too little) to be effective." • "Stress is sometimes good."
Stress affects relationships negatively	• "I am very stressed during assessment weeks and exams and become agitated and unfriendly towards others." • "(pressure) affects how I behave towards other people."
Stress during assessment is only for a short period, negative impact on quality of life is limited	• "I know it is for a short period and therefor I can persevere." • "I am someone who takes one thing at a time. Pressure usually makes me sick, but a soon as a test is over, it is over. I am usually a positive person."
Stress negatively affects cognitive abilities	• "The stress and pressure which is experienced, makes it difficult to focus." • "I do not sleep well and experience a lot of headaches which sometimes impacts negatively on my study time."
Planning and preparation in advance curbs stress experienced during assessment periods	• "Vacation time is used to work and study so that tests and exams can be passed." • "Stress is experienced, but I cope with it by employing coping mechanisms, relaxation and planning."
Stress is a result of high workload and difficulty of content	• "A large work load causes me a lot of stress." • "It is very stressful because our workload is high and difficult."
Internal pressure causes the most stress	• "One wants to perform good to receive bursaries at the university and other institutions, it looks good on your CV." • "I want to do my best and know everything completely and I stress a lot about it."
Stress during exams does not affect quality of life at all	• "The pressure is a lot but it does not have a negative impact on my life." • "I enjoy studying for exams."
Student is used to pressure, it has no great effect on quality of life	• "It is part of life! We have to focus on the positive and not on the negative effects (of assessment)." • "One has to learn to work under pressure."
Uncertainty about assessment is a big stress factor	• "From my second year (of study) I had to take a variety of anxiety medication, I get sick before big exams and develop an ulcer. Uncertainty is a big stress factor."

4.10.4 Subject groups in which participants feel they spent the most effort preparing but perform the worst

In Question 36.1 participants were asked to name module codes in which they feel they spend the most time but perform the worst. Participants could cite more than one subject code [n=119]. The researcher analysed the data, and grouped answers according to the various subject groups the module codes sorted under and calculated the amount of participants, which cited each subject group in the form of a module code. Table 4.16 is a summary of data derived from this question.

TABLE 4.16: SUBJECT GROUPS CITED BY PARTICIPANTS IN WHICH THEY SPENT THE MOST TIME BUT PERFORM THE WORST. [N=110] [n=119]
(Question 36.1, section 1.7 of the questionnaire)

SUBJECT GROUP CITED	FREQUENCY OF SUBJECT GROUP CITATION
Pharmacology (FKLG codes)	86 (72 %)
Pharmaceutics (FMSG codes)	23 (19%)
Clinical Pharmacy (FPFG codes)	7 (6%)
Pharmaceutical Chemistry (FCHG codes)	3 (3%)
Pharmacy Practice (FPKG codes)	0 (0%)

Module codes sorting under the subject group Pharmacology was cited the most, by 86 (72%) participants. Other subject groups cited include Pharmaceutics, cited by 23 (19%) participants, Clinical Pharmacy, cited by seven (6%) participants and Pharmaceutical Chemistry, cited by three (3%) participants. The subject group Pharmacy Practice was not cited once.

4.10.5 Reasons for poor performance in some modules

Participants were asked in Question 37 for their opinion or possible reasons for their poor performance in modules where their input is high but their performance is the worst. The researcher analysed the answer to this question, extracted themes from the answers and calculated the number of times each theme was cited. Participants could cite more than one reason; the number of responses amounted to [n=164]. Figure 4.22 is a graphical representation of the data obtained from this question.

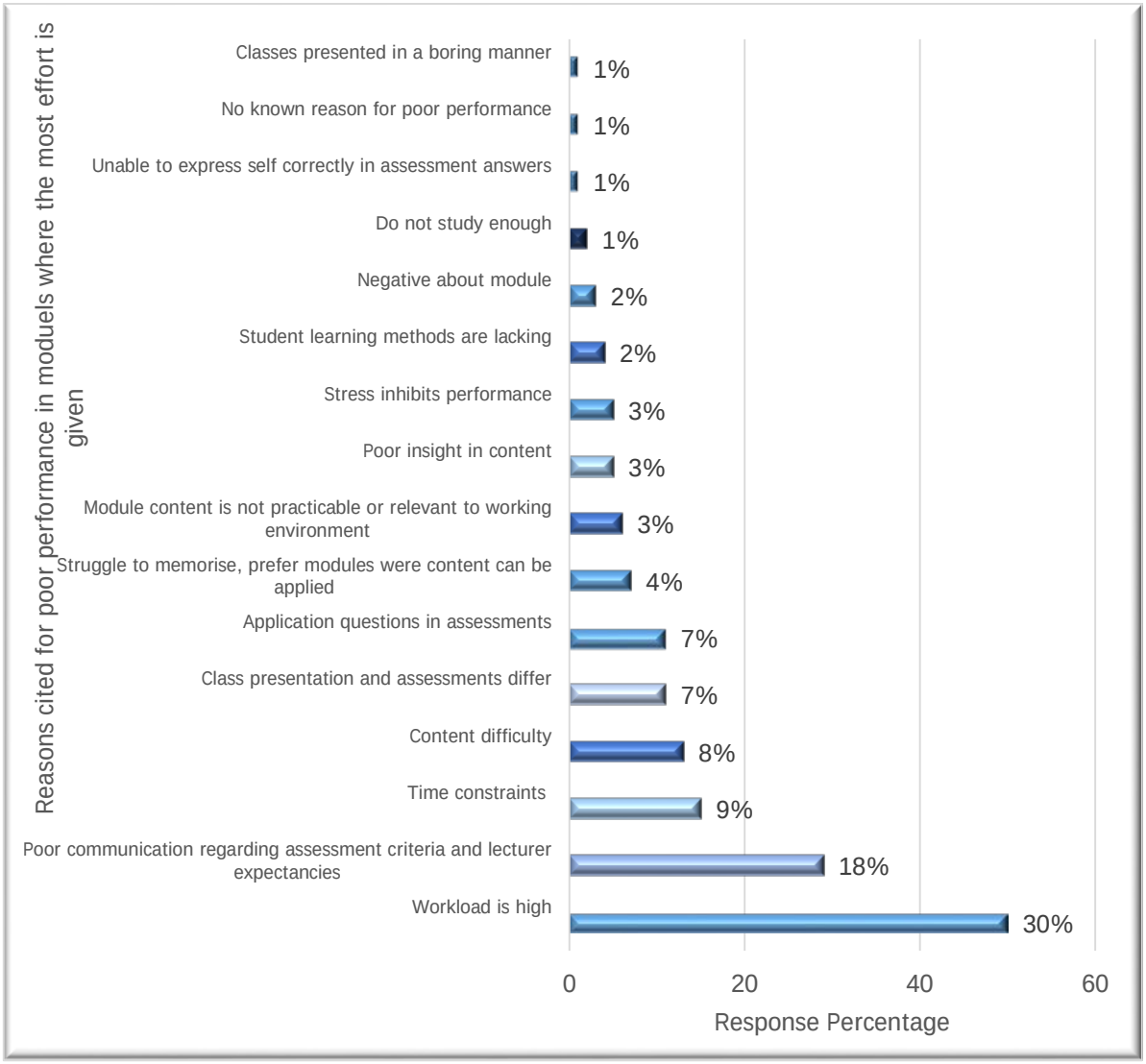


FIGURE 4.22: OPINIONS AND REASONS CITED FOR POOR PERFORMANCE IN MODULES WHERE THE MOST EFFORT IS GIVEN [N=110] [n=164]
(Question 37, Section 1.7 of questionnaire)

The most cited reason for poor performance in the modules where participants allegedly put in a lot of effort was a high workload; 50 (30%) participants stated this as the reason. Out of the 164 responses to this question, 29 (18%) participants stated that poor communication regarding assessment criteria and lecturer expectancies was the reason for poor performance. Various other reasons for poor performance include time constraints (9%), content difficulty (8%), class presentation and assessments differ (12%) and application questions asked during assessments (7%).

Table 4.17 contains examples of quotes, which illustrate the themes on reasons for poor performance, as stated by students.

TABLE 4.17: THEMES AND SUPPORTING QUOTES ON REASONS FOR POOR PERFORMANCE IN MODULE(S) [N=110] [n=94]
(Question 37, Section 1.7 of questionnaire)
(Table continues on next page)

THEME	QUOTE
Workload is high	• "Great amount of work, most of the time." • "The amount of work." • "The content of the work is al lot and the time is limited, because one has four other big modules."
Poor communication regarding assessment criteria and lecturer expectancies	• "Not subjected to application questions during contact sessions and the exam questions are usually application, it is difficult for me to know what to expect. • "The work on which they (lecturers) concentrate in class, is minimally asked in tests and of little practical value."
Time constraints	• "A lot of work, with full schedules there is not always time. to study a week or two before the assessment" • "Not enough time and therefore not getting enough sleep."
Content difficulty	• "It (the work) is difficult and a lot." • "It (the work) is difficult and the subject is presented monotonously."
Class presentation and assessments differ	• "What is asked is very different than what I learnt, thought it was going to be asked in a different manner." • "Assessments are asked differently than how it is presented in class."
Application questions in assessments	• "The work is very difficult and must be applied thoroughly." • "A lot of work to study. Exam questions are application. Application is not done enough during classes."
Struggle to memorise, prefer modules were content can be applied	• "I am very bad at memorising." • "Subject matter which require memorising, that cannot be seen or practiced or is not logical, takes me longer to study than other subject matter."
Module content is not practicable or relevant to working environment	• "More attention must be given to relevant medication, which are used in practice. I almost never see half of the medication (in practice)."
Poor insight in content	• "Sometimes I understand the work incorrectly, forget or get confused." • "I do not always understand the work."
Stress inhibits performance	• "Stress and workload." • "Too much work, study too much and then I sleep too little because of stress."
Student learning methods are lacking	• "I only study to remember for the test and then one forget (the content) again." • "Maybe I study the wrong way or do not always understand what is asked (in assessments)."
Negative about module	• "my view about the module is negative"
Do not study enough	• "I don't prepare enough, I am not in the mood to prepare, and I feel useless."
Unable to express self correctly in assessment answers	• "I sometimes struggle to express myself (in assessments) and because I do not have specific words in my explanation, I lose marks."

No known reason for poor performance	• "I honestly don't know."
Classes presented in a boring manner	• "It (the work) is difficult and the subject is presented monotonously. They can do more in order to make classes interesting."

4.11 COMPARING SOME RESULTS

The results from Question 22 and Question 23 were compared. Question 22 asked participants to cite the module codes in which they experienced the most anxiety during assessment, whereas Question 23 enquired into the reasons why they experienced anxiety during assessment in the module codes cited in Question 22. A total number of 105 participants answered both questions, citing one or multiple module codes and reasons. The top five reasons cited for anxiety with the top three module codes cited were recorded. Table 4.18 is a representation of the combined findings, showing the number of times each module code was cited by each participant giving a certain reason for anxiety in assessment.

TABLE 4.18: COMPARISON OF THE FREQUENCY OF MODULE CODES AND REASONS CITED FOR CAUSING ANXIETY DURING ASSESSMENTS [N=110] [n=105] (Question 22 - 23, Section 1.7 of the Questionnaire)

		FREQUENCY OF MODULE CODES CITED IN WHICH MOST ANXIETY IS EXPERIENCED DURING ASSESSMENT (QUESTION 22)		
REASONS CITED FOR ANXIETY EXPERIENCED DURING ASSESSMENT (Question 23)	**FREQUENCY OF REASON CITED**	**FKLG Pharmacology**	**FMSG Pharmaceutics**	**FPFG Clinical Pharmacy**
Workload	70 (67%)	69 (66%)	38 (36%)	12 (11%)
Communication constraints regarding assessment	38 (36%)	35 (33%)	17 (16%)	8 (8%)
Content difficulty	35 (33%)	35 (33%)	20 (19%)	3 (3%)
Assessment is not reflective of class presentation	26 (25%)	25 (24%)	10 (10%)	6 (6%)
Types of Questions ask in assessment	25 (24%)	24 (23%)	16 (15%)	5 (5%)

It is evident from these results that workload and Pharmacology module codes were cited together most of the time, out of 70 (67%) participants who cited workload, 69 (66%) of them also cited a Pharmacology module code. Pharmaceutics was cited by 38 (36%) participants who cited workload. Communication constraints regarding assessment were cited by 38 (36%) participants as a reason for anxiety and a Pharmacology module code

was cited by a similar number of 35 (33%) participants. Content difficulty was cited by 35 (33%) participants, and 35 (33%) of the participants who cited this reason also indicated that a Pharmacology module code caused them most anxiety.

It was also mindful to do a similar comparison with the results of Question 36.1 and Question 37. Question 36.1 asked participants to cite module codes in which they spend the most time but perform the worst. Question 37 required participants to cite reasons for their poor performance in the module codes cited by them in Question 36. 93 participants answered both questions, and participants could cite more than one module code or reason. Table 4.19 is a representation of the compared data, accounting the frequency of each reason cited and each module code cited.

TABLE 4.19: COMPARISON OF THE FREQUENCY WITH WHICH REASONS AND MODULE CODES WERE CITED FOR HIGH INPUT AND POOR PERFORMANCE [N=110] [n=93] (Question 36.1 - 37, Section 1.7 of the questionnaire)

		FREQUENCY OF MODULE CODES CITED FOR HIGH INPUT AND POOR PERFORMANCE (QUESTION 36.1)		
REASON CITED FOR POOR PERFORMANCE IN MODULE CODES (Question 37)	**FREQUENCY OF REASON CITED**	**FKLG Pharmacology**	**FMSG Pharmaceutics**	**FPFG Clinical pharmacy**
Workload	70 (75%)	69 (74%)	38 (41%)	12 (13%)
Communication constraints regarding assessment	38 (41%)	35 (38%)	17 (18%)	8 (9%)
Content difficulty	35 (38%)	35 (38%)	20 (22%)	3 (3%)
Assessment not reflective of class presentation	26 (28%)	25 (27%)	10 (11%)	6 (6%)
Types of Questions asked in assessment	25 (27%)	24 (26%)	16 (17%)	5 (5%)

Workload was cited by 70 (75%) participants as the reason why they spent the most time on modules, but perform the worst. The 69 (74%) participants who cited workload as the reason for poor performance indicated that they spent the most time on but perform the worst in Pharmacology module codes. Pharmaceutics was cited by 38 (41%) participants who cited workload as a reason for poor performance. Communication constraints were cited as a reason by 38 (41%) participants, and 35 (48%) of the same participants cited Pharmacology codes as a poor performance module.

Another interesting comparison was the one between the frequency of similar reasons cited for anxiety in Question 23 and reasons for poor performance in Question 37. Table 4.20 is a graphical representation of this comparison. The researcher considered only the answers of participants who answered both questions for the purpose of this comparison (n=90).

TABLE 4.20: COMPARISON OF THE FREQUENCY SIMILAR REASONS WERE CITED FOR ASSESSMENT ANXIETY AND POOR PERFORMANCE [N=110] [n=90]
(Question 23 - 37, Section 1.7 of the questionnaire)

REASON CITED FOR ANXIETY AND POOR PERFORMANCE	FREQUENCY CITED FOR ASSESSMENT ANXIETY	FREQUENCY CITED FOR POOR PERFORMANCE
Workload	66 (73%)	51 (57%)
Communication constraints regarding assessment	33 (37%)	25 (28%)
Content difficulty	31 (34%)	19 (21%)
Assessment not reflective of class presentation	21 (23%)	12 (13%)
Time constraints	18 (20%)	12 (13%)
Types of questions in assessments	22 (24%)	5 (6%)
Application and higher cognitive questions in assessments	19 (21%)	13 (14%)

The top three reasons cited for both anxiety and poor performance were workload, communication constraints regarding assessment and content difficulty. Workload was cited as a reason for anxiety by 66 (73%) participants and by 51 (57%) participants as a reason for poor performance in modules. Respectively 31 (34%) and 19(21%) participants cited content difficulty as a reason for anxiety and poor performance. Communication constraints regarding assessment was cited by 33 (37%) participants as reason for anxiety, while 25 (28%) participant chose this reason for poor performance.

4.12 CONCLUSION

In this chapter, the results obtained from the questionnaire were graphically illustrated in graphs or summarised in tables. The results will be discussed and reflected upon in Chapter 5.

CHAPTER 5
INTERPRETATION AND DISCUSSION OF RESULTS

5.1 INTRODUCTION

The results of the questionnaire were presented and illustrated visually in Chapter 4. In this chapter, the results, representing the opinions of final year pharmacy students, will be considered and discussed.
In this chapter, the researcher intended to answer research Question 2:

What are the opinions of students regarding assessment practices at the NWU School of Pharmacy with specific reference to the following:

- Communication practices in assessment
- Formative assessment practices
- Summative assessment practices
- Assessment anxiety
- Feedback practices after assessments
- The overall effect that assessment has on the student

The researcher investigated possible links between participant replies, through the statistical analysis of the data obtained from the questionnaire.

Figure 5.1 is a graphical representation of the layout of Chapter 5.

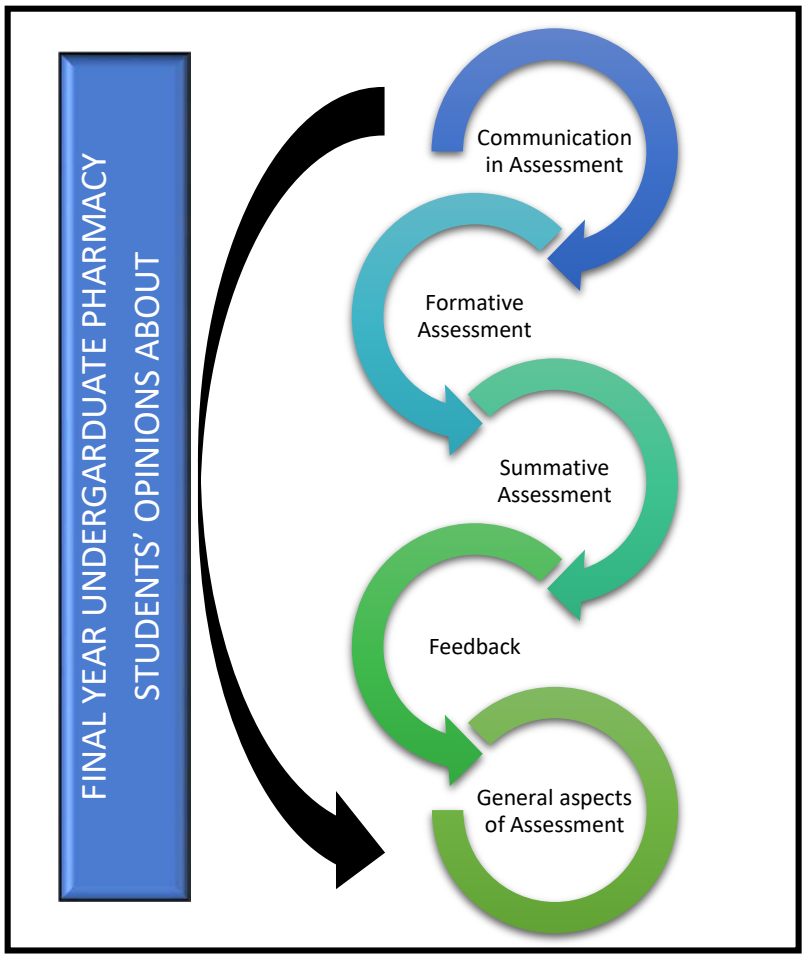


FIGURE 5.1: SCHEMATIC LAYOUT OF CHAPTER 5
(Compiled by the researcher, Mostert 2017)

For the purpose of this study at a mini-dissertation level a quantitative study was used. Further and more in-depth research using qualitative methodology may be useful to consider in this field. It is strongly recommended by the researcher.

The study constituted a 64% response rate. Literature shows that the response rate for questionnaire research varies (Baruch & Holtom 2008:1140). This is dependent on the manner in which the questionnaire is distributed, the timeframe of the research and the culture and nature of the population etc. (Baruch & Holtom 2008). For example, postal surveys are known to have a lower response rate compared to self-administered questionnaires which are completed and collected in one sitting.

In this study the 64% response rate can be attributed to the fact that students were pre-notified about the survey, invited to an information session and reminded constantly over a period of 30 days. The collection containers were also immediately available, so some students completed and submitted the survey straight after the information session. Furthermore, the NWU also regularly emphasises the importance of research and

encourages students and staff to participate, which may also be a contributing factor to the response rate of 64% in this study.

5.2 OPINIONS ABOUT COMMUNICATION IN ASSESSMENT

In Section 1.4 of the questionnaire, enquiries were made into participants' opinions regarding communication about aspects of assessment (cf. 4.5). The questionnaire made enquiries about the communication with regards to expectancies of lecturers regarding tests, the correlation between assessment content and module outcomes; if assessments were reflective of how content was communicated in the classroom; and the communication of the assessment plan of modules (cf. 4.5).

Results of these questions in Section 1.4 showed that participants were of the opinion that communication, in relation to assessment in most of their modules, was adequate always or most of the time (cf. Figure 4.5). Participants were of opinion that lecturers communicated their expectancies with regards to tests most of the time (78%). Findings also indicated that participants were of opinion that the content of assessments reflected the outcomes given to them most of the time (76%) and that questions in assessments were reflective of class representation most of the time (76%). With regards to the availability of assessment plans, 51% and 41% of participants respectively indicated that it was always available or available most of the time. In comparison to literature, these findings in point 4.4 is similar to the findings in a study done by Alkharusi *et al.* (2013:1687) (cf. 1.2), where students perceived most aspects of assessment in most modules, including lecturers' expectancies and transparency, in a positive light.

In contrast to the above positive findings regarding assessment communication, in other sections of the questionnaire, communication constraints about assessment criteria were cited as the reason for 36% of participants' anxiety - and according to 25% of participants, the lack of coordination between class presentation and assessment was the reason for their anxiety in specific modules (cf. Table 4.7). Considering responses to Question 37, communication constraints with regards to assessment criteria, lecturer expectancies and discrepancies between class presentation and assessments were also cited as reasons for poor performance in some modules (cf. Figure 4.22).

The latter results, where the lack of communication seemingly cause anxiety and poor performance, resonate with findings by Sarason (1984:20), Bolkan (2016:160) and Mazer

et al. (2014:163) (cf. 2.8). The authors also found in their studies that poor communication from lecturers is responsible for the increased cognitive burden, anxiety, feelings of anger and poor performance of students. Furthermore, the findings indicate that communication or a lack there of by lecturers, has an impact on learning, resonating with Cilliers *et al*. (2012:45) model of pre-assessment LESA (cf. 2.7).

The reason for the difference in the findings between closed questions in point 4.5 and the open-ended questions in point 4.7.7 and 4.10.5, may be the reference to "most of the modules" in the closed questions (cf. 4.5), and reference to a specific module(s) in the open questions (cf. 4.7.7 & 4.10.5). This discrepancy in results leads the researcher to conclude that although students were of opinion that communication about assessment was adequate in most of the modules, there is room for the improvement of communication in specific modules. This conclusion is supported by the results depicted by Table 4.18, where 33% of participants, who cited pharmacology module codes as the module where they experience the most anxiety, also cited communication constraints regarding assessment as a reason for anxiety. In Table 4.19 similar results presented, when 38% of participants who named pharmacology module codes as subjects in which they spend the most time but accomplish the least, also claimed that communication constraints regarding assessment represented the reason for their poor performance.

In light of these results, the researcher infers that according to students, communication in most of the modules are satisfactory, but that there is much room for improvement in some subjects. The findings also gives evidence of a relationship between poor communication regarding assessment and lecturer expectations and increased anxiety and poor performance, which is similar to findings made by Sarason (1984:20), Mushtaq and Khan (2012:21), Mazer *et al*. (2014:163), and Bolkan (2016:160) (cf. 2.8).

The researcher can deduce, from the opinions of students regarding communication in assessment, that in order for students to experience less anxiety and perform better in the modules they are enrolled for, it is necessary for the implementation and maintenance of better communication about assessment criteria, lecturer expectations and that the nonalignment between class presentation and assessment should be enhanced. This recommendation resonates with investigations done by Alkharusi *et al.* (2015:1690) where they found that if students had positive views about a lecturer's communication in terms of assessment, it increased their self-efficacy (cf. 2.10). This recommendation also resonates

investigations done by Nijhuis *et al.* (2005:412) and Ali and Khan (2016:192), which indicated that there is a direct relationship between the clear communication of course objectives and assessment expectations and constructive learning strategies that enhance deep learning (cf. 2.7).

5.3 OPINIONS REGARDING FORMATIVE ASSESSMENT

In this part of the discussion, results in Chapter 4 with regard formative assessment will be deliberated in view of literary findings made in Chapter 2. Participants' opinions resulting from the questionnaire about the frequency of, purpose of and feedback after formative assessment will be interpreted and conclusions will be made in relation to relevant literature.

5.3.1 The frequency of formative assessment

In point 4.6.1, the findings show that students were minimally subjected to preparation tests. The majority of participants (75%) indicated that they were minimally expected to write preparation tests at the beginning of lectures. Students were asked to indicate how often they were subjected to continuous small class tests after lectures and 72% of participants indicated that this was only the case in some of their modules (cf. 4.6.4).

The findings indicate that students are infrequently subjected to formative assessment during class in most of their modules. This lack of formative assessment in class may have a negative influence on the learning of students when considering the findings in research done by Norcini and Friedman Ben-David in Dent and Harden (2013:287), Dochy *et al*. in Boud and Falchikov (2007:89) and Hanauer *et al.* (2009:24) that learning is created and affected by partaking in such assessments (cf. 2.5.2).

Students may also be denied the benefit of deep learning due to the lack of formative assessment when considering findings by Ali and Khan (2016:192), where a direct link is made between deeper learning, continuous formative assessment and constructive feedback (cf. 2.7). This is echoed by Anwar and Hameed (2016:37) who also found in their study that students liked formative assessments and agreed that it enhanced deep learning.

The apparent infrequent formative assessment is also contradictory to the leading principles of the assessment and moderation policy at the NWU (cf. Table 2.8), which states that continuous formative assessment is to serve as a teaching and learning monitoring

instrument for both students and lecturers. The NWU policy also states that informal formative assessment opportunities (*cf.* 2.6.3) should be a part of contact sessions as much as possible (NWU 2011:Online) (*cf.* Table 2.8).

Although the current study did not explore the cause and effects of infrequent formative assessment, in light of the literature, the researcher deduces that the clear lack of continuous formative assessment indicated by the students in this study may certainly have a negative effect on students' ability to understand and find meaning in the contents of modules and affect their learning strategies negatively. The latter conclusion is supported by Crooks (1988) in Gijbels & Dochy (2006:401) (cf. 2.5.2) who states the purposes of formative assessment are to embed knowledge, highlight important aspects in the content, encourage good learning strategies, amalgamate skills and learning, create opportunity for remediation, monitor progress and encourage students to be self-efficient. If formative assessment is absent, these purposes cannot be fulfilled. The researcher recommends that the implementation of continuous formative assessment should be a priority and should be investigated further.

5.3.2 Opinions regarding the purpose of formative assessment

Derived from the statistics in Table 4.2, point 4.6.2 and 4.6.3 it is clear from the calculated mean that students mainly perceive the purpose of preparation tests and small class tests after lectures as a manner in which to do presence control (μ =83) (cf. Table 4.2). On average (μ =69) (cf. Table 4.2) students also indicated that the purpose of preparation tests and small class tests after lectures is to force them to prepare for lectures. These findings are contradictory to the purposes of formative assessment as stated by various researchers (cf. 2.3 & 2.5.2). According to the researchers (cf. 2.3 & 2.5.2) the purpose of formative assessment is to create, enhance and guide learning (Clark 2012:208; Hanauer *et al.* 2009:24; Norcini & Friedman Ben-David in Dent & Harden 2013:287) set standards for themselves and not passively force learning (Ali & Khan 2016:191).

It is noted by the researcher, from the varied responses to this question, that to many students, the purpose of formative assessment is not clear. According to the findings in this question, it can be concluded that there is a need for valuable, purpose-driven formative assessment. Considering the purposes of formative assessment as outlined by Crooks in Gijbels and Dochy (2006:401) (cf. 2.3), the researcher proposes that a detailed, purpose-

driven formative assessment plan be devised by lecturers and implemented with vigour. The plan should also be clearly explained to students at the beginning of each year.

The plan should be created in such a way that assessments will embed and consolidate knowledge and skills (Crooks in Gijbels & Dochy 2006:401), reflect module outcomes (Biggs & Tang 2011:16), direct learning and learning methods (Anward & Hameed 2016:38, Asikainen *et al.* 2013:216) and accustom the learner to the standards of the module (Ali & Khan 2016:191). The plan of different modules should also be custom made, according to the purpose and goal of each module (Brown 2004:81). Guidelines for the provision of constructive feedback and the encouragement of self-regulatory behaviour among students should also be included (Crooks in Gijbels & Dochy 2006:401). In light of the above literature, it is evident that when students are adequately informed about and understand the goal of formative assessment, it will help them to alter their study methods and attitude towards assessment.

5.4 SENTIMENTS OF PARTICIPANTS REGARDING SUMMATIVE ASSESSMENT

Results in Chapter 4 pertaining to summative assessment will be discussed with reference to literature in Chapter 2. Student's opinions resulting from the questionnaire about the frequency, purpose of and feedback after summative assessment will be interpreted and conclusions will be made in relation to relevant literature.

5.4.1 Opinions about the purpose of summative assessment

Considering the data yielded in point 4.7.1, which concerns how participants perceive test opportunities, a majority (73%) of students indicated that the summative assessment they are exposed to purposefully determines their understanding of the module and their ability to apply knowledge to problem solving. These results create a positive picture of the summative assessments students are subjected to in the programme, as they reflect that students are encouraged by assessments to approach the content with a deep-learning approach, affirming a finding by Struyven *et al.* (2005) concerning students' views about how assessment directs their learning (cf. 2.10).

The findings in point 4.7.1 also show resonate with research by Dochy *et al.* (2007:89), demonstrating the possible pre- and post-assessment effects on learning on students (cf. 2.7). Furthermore findings also resonate with the model of pre-assessment LESA (Cilliers

et al. 2012:44) (cf. Figure 2.10; Table 2.6) that suggests that cues from lecturers impact the student effort and choice of content and that the task type also impacts students' strategies in monitoring and adjusting their learning behaviour. In light of research by Biggs and Tang (2011:26), it can be deduced from the results in point 4.7.1, that summative assessment in the B.Pharm programme can be considered purposeful. The said authors found that summative assessment should be done to encourage deep learning, assess the ability of the student to effectively apply content and not focus on the memorization of independent facts, which is reflected in the results of point 4.7.1.

In spite of the positive findings above, a considerable number of students (39%) indicated that summative tests evaluated their ability to memorise the content of the module (cf. Figure 4.13). This leaves room for concern, because according to Biggs and Tang (2011:25), this response may indicate that some students are using a surface learning approach, which requires minimum cognitive effort (cf. 2.7). The questionnaire only referred to assessment of modules in general and not specific modules, and this might be the reason for this contradicting result, as modules are presented and assessed by different lecturers who employ different assessment approaches (cf. 2.9.1).

The above discrepancy reflects that there may be a difference in assessment practices in different modules. Possible reasons for the effective understanding and application of content in some modules are, according to Ali and Khan (2016:192) and Gijbels and Dochy (2006:408), good teaching methods, adequate feedback and clear communication regarding expectations (cf. 2.7). The reasons for surface learning in some modules might be attributed to excessive workload (Gijbels & Dochy 2006:408), the reason which was cited by most students as the reason for poor performance in modules (cf. 4.10.5). The latter results once again coincide with Cilliers *et al*. (2012:45) model of pre-assessment LESA (cf. Figure 2.10; Table 2.6), where it is shown that workload is a source with a profound impact on the learning effects of summative assessment.

The researcher suggests that a detailed study of each module's assessment practices should be conducted, in order to determine in which modules the summative assessment encourages surface learning.

5.4.2 Opinions about the value of different assessment forms

In the study, students' opinions about the value of different assessment methods were obtained. Students indicated that assessments that involved practical skills, large tests, large class tests and demonstrations were the most valuable assessment methods (cf. 4.7.3). The results further indicated that students found worksheets, small class tests, open book exams, project work, portfolios and journals as the least valuable methods of assessment (cf. 4.7.3). The value of assessment methods was defined by the researcher as the contribution the assessment method makes to the mastering of the module content. The results also indicated that the students do not have a preference regarding traditional or alternative assessment (cf. 2.7), as long as it contributes to their learning success. This finding relates to the statement by Savickiené (2014:29) that the assessment method should relate to the purpose (cf. 2.6).

When evaluating the above findings against propositions by Boud *et al.* (2010) on effective assessment (cf. 2.4.2), it seems that some assessment methods used in the programme do not yet effectively assess students. The fact that some assessment methods are not deemed valuable by students may not necessarily reflect that the assessment methods are poor, but can be an indication that it is inappropriately applied; that students do not have experience in the method; that feedback was inadequate or that the method did not reflect classroom teaching (cf. 2.6.3).

The findings in point 4.7.3 mirror findings by Lee *et al.* (2010:29) where they found that different assessment methods had either a positive or negative effect on learning (cf.1.3). This is affirmed by Struyven *et al.* (2005:331) who concluded that students' perceptions about evaluation plays a big role in their studying methods and whether learning is meaningful (cf. 2.10). The findings in point 4.7.3 also resonates with Cilliers *et al.* (2012:45) model of pre-assessment LESA (cf. Figure 2.10; Table 2.6), which indicated that the task type impacts pre-assessment LESA in a significant way.

If used appropriately, the findings in point 4.7.3 may contribute to enhancing the value of assessment in this programme. It can direct educators to only employ assessment methods that are meaningful to students and implement assessment methods in such a way that students have a positive attitude and experience consistent, fair and valuable assessment, as stated by Savickiené (2014:28) (cf. 2.6.3). The author also states that by using

assessment methods deemed by students as valuable, lecturers can be assisted in gathering objective data about how successful learning is.

The researcher recommends that current assessment methods used in the programme, be evaluated against the findings in point 4.7.3, the selection criteria as formulated by Savickiené (2014:28) (cf. 2.6.3) and the propositions by Boud *et al.* (2010) (cf. 2.4.2). This may assist educators in identifying and selecting assessment methods which encourage and direct deep learning, yield objective information about achievements and reflect the essence of the module.

5.5 OPINIONS ABOUT FEEDBACK

5.5.1 The frequency and effect of feedback

The results in cf. 4.6.5 indicate that the frequency of feedback after small class tests was lacking. A combined percentage of 69% of participants indicated that they receive feedback in none of their modules (27%) and in some of their modules (42%) (cf. Figure 4.10). The lack of feedback, as evident in the results, contradicts the purpose of assessment as stated by Norcini *et al.* in Dent and Harden (2013:288), which is to offer students and teachers a means to guide learning in the form of feedback (cf. 2.5.2).

Because of the evident lack of feedback, the researcher then also deduces that both the student and teacher are robbed of the opportunity to gather information about the learning that took place. According to Hanauer *et al.* (2009:24), information derived from formative assessments is compulsory in order to effectively convey and improve classroom teaching (cf. 2.5.2). The absence of adequate feedback also deprives students of learning from and during assessment. If no feedback is given, students are unable to evaluate their progress in achieving module outcomes and this restricts the student's means of revisiting content with a corrected approach, once again contradicting the purpose of formative assessment as stated by researchers (cf. 2.5.2).

In point 4.8.1, results were displayed regarding the frequency of feedback on different aspects of modules, and the results were negative. The results indicated that the students predominantly received no or minimal feedback with regards to individual achievements (67%), outcomes mastered individually (71%), individual strengths (94%) and weaknesses (94%), and aspects in which students require further support (74%).

The above results are of concern, as many researchers deem feedback as the key to give meaning to assessment and aid learning (cf. 2.4.3). Perera *et al.* (2008:395) point out that formative feedback should be task directed and be given continuously in order to be meaningful. Kim (2015:22) emphasizes the need for specific feedback, and this is also implied by Boud *et al.* (2010) (cf. 2.4.2). Perera *et al.* (2008:395) state that feedback should be tasked directed (cf. 2.4.3). According to Krackov in Dent and Harden (2013:324), feedback clarifies goals of learning and enhances good performance and communication between lecturer and student (cf. 2.4.3) and according to Dochy *et al.* in Boud and Falchikov (2007:90) feedback enables students to alter their learning behaviour as a post-assessment learning effect (cf.2.8). Boud *et al.* (2010) encourages lecturers to use feedback meaningfully by ensuring it is informative, supportive and facilitates a positive learning attitude (cf. 2.4.2).

An argument might be made that students may not deem feedback necessary and may not engage with it. Kim (2015:2) states that students are generally not motivated to use teacher feedback, but Ada and Stansfield (2017:227) found in their study that more than half of the students they tracked over a period of one year accessed their feedback.

Results concerning the effect of the feedback on determining students' shortcomings were rather scattered (cf. 4.6.6). A slight majority of 54% of students indicated that feedback was useful in determining their shortcomings in most or all of their modules, while the rest indicated that feedback served this purpose in some or none of their modules. If these results are viewed in relation to the results (cf. 4.6.5), the researcher can but only deduce that the reason the results in point 4.6.6 are so inconclusive, is because there is a clear lack of feedback in most of the modules. This is a major concern, because as previously stated, the whole purpose of formative assessment is to determine shortcomings and enhance learning (cf. 2.5.2).

Although the results concerning the role of feedback in determining shortcomings was inconclusive, the majority of students indicated that feedback assists them in learning more effectively and purpose driven (cf. 4.6.6). This positive finding is of importance, as it affirms findings made by various researchers that feedback in assessment directs, creates and supports learning (cf. 2.4.3).

When considering the results in light of the literature (cf. 2.4.3), the researcher can draw the conclusion that there is a great need for continuous and meaningful feedback. The shortage of feedback is not surprising when considering the results in point 4.6.1, where students were of opinion that there is also a noticeable deficiency in formative assessment. The researcher recommends that a plan of effective feedback be implemented as part of the assessment plan. Guidelines should be developed in order to ensure that meaningful and specific formative feedback be supplied to students on a continuous basis (cf. 2.4.3).

5.5.2 General opinions about feedback

Students indicated that although detailed feedback was limited (cf. 5.5.1), they experienced the feedback given in a positive light. In point 4.8.4, participants to this study indicated that feedback was mostly fair and reflective of outcomes in the study guide (70 %), aided them in better learning strategies (75%) and helped them determine where they can improve (88%).

When evaluating the above results in light of the literature in point 2.4.3, it seems that the feedback, though infrequent, is meaningful. Students indicated that, for the most part, feedback aided them in learning strategies and helped them determine where they needed to improve, which is similar to what Kim (2015:2) found (cf. 2.4.3). The findings are also affirmed by studies done by Krackov (in Dent & Harden 2013:323) and Lee *et al.* (2010:29), Dochy *et al.* in Boud and Falchikov (2007:90) who found that feedback affects learning behaviour and provides students with meaningful insights into their learning (cf. 2.4.3).

Students stated that for the most part, feedback was reflective of class presentation and the outcomes. This is a positive finding when evaluating it against statements by Krackov (in Dent & Harden 2013:324) where he says that by linking teaching and assessment, feedback is a reflection of the educator's commitment to assisting learners in achieving outcomes.

5.6 GENERAL EXPERIENCES REGARDING ASSESSMENT

In the following section, the results of questions regarding general experiences in assessment will be discussed.

5.6.1 Reasons for assessment anxiety

The questionnaire made a few enquiries about anxiety experienced during assessment. In point 4.7.4, results are shown for which assessment methods cause the most anxiety. Students indicated that they experience the most anxiety during oral assessments (88%), big assessments test (56%), big class tests (46%) and presentations (42%) (cf. 4.7.4). This is consistent with findings by Sparfeldt *et al.* (2013:201) that test anxiety among students varies for different examination methods (cf. 2.8).

The questionnaire also aimed to identify the cause of anxiety during assessment (cf. 4.7.5). In a closed question, students (63%) indicated that a combination of the type of assessment and the module content was the main reason for anxiety they experienced during assessment. In point 4.8.7 content difficulty was also cited in an open question as one of the main reasons for test anxiety. This result supports findings by researchers, Sarason and Palola (1960:185), Hong (1999:442) and Sommer and Arendasy (2016:2) (cf. 2.8), who all found that there is increased anxiety when the content difficulty is higher. The results above resonate with findings by Von der Embse and Hasson (2014:183) and Lotz and Sparfeldt (2017:399), who all found that when students view an assessment as high-stakes, their level of anxiety increases (cf. 2.8).

When participants were asked to supply the module codes of modules where they experienced the most anxiety, most of the participants stated that they experienced the most anxiety during assessment in Pharmacology (54%) and Pharmaceutics (30%) modules (cf. 4.6.6). This finding is supported by a study done by Sparfeldt *et al.* (2013:2), who found that test anxiety is higher for certain subjects (cf. 2.8). Pharmacology (78%) and Pharmaceutics (21%) were also cited as subjects in which participants spent the most time, but performed the worst (cf. 4.10.4).

In point 4.7.7, participants were asked to cite their own reasons for the anxiety they experience in these modules. Workload (67%), communication constraints regarding assessment criteria (36%) and content difficulty (33%) were cited as the main reasons for anxiety. Students were also asked to cite reasons for poor performance in some modules. Once again, the top two reasons for poor performance in some modules was high workload (53%) and communication constraints about assessment criteria and lecturer expectations.

The finding that workload or course load had a significant impact on the anxiety levels of students (cf. 4.7.7) is consistent with findings by various researchers, including Sansgiry and Sail (2006:5) and Mani (2010:109) who found that there is a direct positive relationship between course load and test anxiety (cf. 2.8). This finding causes concern, as Nijhuis *et al.* (2005:412) state that the workload, clarity of module objectives and the usefulness of content had a huge impact on their learning, and when students saw the above elements in a negative way, they mostly used a surface learning approach (cf. 2.7) This was affirmed by Ali and Khan (2016:192), who state that excessive workload causes surface learning, and Gijbels and Dochy (2006:408) who found that learning approaches are influenced by workload, inadequate feedback and structure (cf. 2.7).

Although course load or workload was cited by students as one of the major reasons for their anxiety (cf. 4.7.7), there was no enquiry made by the questionnaire into students' time management skills. The researcher argues that poor time management may also lead to students' feeling that the course load is too heavy, when in fact it was reasonable. Sansgiry and Sail (2006:5) found that there is a negative relationship between time management and test anxiety (cf. 2.8)

Another reason cited for test anxiety by students was communication constraints regarding assessment criteria (cf. 4.7.7). In another section of the questionnaire, students were asked to answer a closed question, where 45% agreed mostly and 29% agreed strongly that they always feel stressed about formal tests and exams, as they are unsure what lecturers expect (cf. Table 4.12). This relates directly to teacher clarity. This finding is consistent with findings in studies by Sarason (1984:20) and Mazer *et al.* (2014:163) (cf. 2.8), where there is a direct relationship between a lack of teacher clarity and high anxiety levels.

5.6.2 Reasons for poor academic performance

In point 4.10.5, results reflected reasons cited for alleged poor performance in modules where participants felt they put in the most work. According to Figure 4.22, the top ranking reasons for poor performance were high workload (30%) and poor communication of assessment criteria (18%), time constraints (9%) and content difficulty (8%).

The finding that increased workload and time constraints led to weaker academic performance resonate with findings by Sansgiry *et al.* (2006:6), Murray and Cummings

(2007:92) and Von der Embse and Hasson (2012:183) (cf. 2.8). The latter researchers found in their study that when students viewed course load as excessive and did not employ good time management, they performed poorly. Communication cited as a reason for poor performance echoes findings by Bolkan (2016:160), Mushtaq and Khan (2012:21) and Mazer *et al.* (2016:163) who found that communication affects academic performance profoundly (cf. 2.8).

Much of the findings in point 4.10.5 coincide with the pre-assessment learning effects of summative assessment (LESA) model developed by Cilliers *et al.* (2012:45). The latter researchers found that workload is a source factor which impacts all learning effects of summative assessment, and that assessment criteria is also a source factor which impacts the nature of students' cognitive processing activities and their learning efforts and the selection of resources (cf.2.7).

From the findings displayed in Table 4.20, which compared the reasons cited for test anxiety and poor performance, it can be concluded that workload and communication constraints are the two main reasons for both test anxiety and poor performance. Because of this finding, it can be concluded that there is a strong relationship between test anxiety and poor performance. This is consistent with findings by Chapell *et al.* (2005:271), Hembree (1988:73), Putwain (2008:11), Vitasari *et al.* (2010:495) and Von der Embse and Hasson (2012:183) (cf. 2.8 & 5.6.2).

5.7 CONCLUSION

Chapter 5 presented a discussion based on some of the main results of the research and a comparison to findings in the literature review. The results of the questionnaire, compared with other studies, put final year pharmacy students' opinions regarding assessment into perspective.

The results were evident of the following:

- Students viewed communication in most modules as adequate, but a lack of communication was evident in some individual modules. The insufficient communication with regards to assessment was cited as a reason for anxiety and poor performance in specific subject groups (cf. 5.1).

- According to the results, formative assessment is infrequent and most students view formative assessment as a way in which lecturers do presence control. It is also evident from results that students have varied opinions regarding the purpose of formative assessment (cf. 5.2).
- Summative assessment is viewed in a positive light by many students. Most students were of the opinion that the summative assessment they were exposed to aimed to determine their understanding of and ability to apply content meaningfully. This was contradicted by some students, who indicated that summative assessment evaluated their ability to memorise facts. The researcher concluded that, in general, students had positive opinions about summative assessment, but that students may still have concerns about summative assessments in specific modules (cf. 5.3).
- Students were of the opinion that practical skill tests, large tests, large class tests and demonstrations were most valuable with regards to the contribution it made to the mastering of their modules. Other assessment methods including worksheets, small class tests and portfolios were deemed invaluable to students. The researcher concluded that some assessments methods might be implemented incorrectly, and that that is why students do not deem it valuable (cf. 5.4).
- With regards to feedback, the results were mostly negative. Students were of the opinion that feedback was infrequent and did not address specific issues (cf. 5.5.1). In spite of this, the majority of students were of the opinion that feedback aided them in learning more effectively (cf. 5.5.2).
- The study found that oral assessments, big class tests and presentations caused students the most anxiety. Pharmacology and Pharmaceutics were cited as the subjects in which students experienced the most anxiety and performed the worst (cf. 5.6).
- It is evident that workload and communication constraints were the reasons cited by most students for their increased anxiety and decreased performance in modules (cf. 5.6).

In Chapter 6, the conclusions, recommendations and limitations of the study will be provided.

CHAPTER 6
CONCLUSION, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

6.1 INTRODUCTION

The study with the title, *THE OPINIONS OF FINAL YEAR UNDERGRADUATE PHARMACY STUDENTS AT THE NORTH-WEST UNIVERSITY REGARDING ASSESSMENT* was conducted by the researcher in order to gain insight into and make recommendations regarding to assessment practices at the NWU School of Pharmacy.

Previously, in Chapter 5, the results of the questionnaire were interpreted with regards to the objectives of the study.

The SAPC, NWU and SAQA all provide minimum standards and policies in order to guide assessment practices in such a way that graduate pharmacists possess all the competencies and skills a pharmacist needs to practise the profession of pharmacy with confidence. This study investigated the opinions of undergraduate fourth year students regarding assessment practices at NWU. The goal of the study is to supply information to lecturers regarding students' views about assessment practices, which may aid lecturers in altering current assessment practices in order to optimally support learning and enhance the learning experiences of students.

Chapter 6 will serve as a reflection on the study.

6.2 OVERVIEW OF THE STUDY

Two research questions were addressed by the completion of this study. The research findings served as the foundation for assessing the opinions of students regarding assessment at the NWU School of Pharmacy and for making recommendations.

In Chapter 1 (cf.1.3), the research questions were presented. The research questions directed and shaped the outcomes of the study. In the following sections, the two research questions and the main findings are reviewed.

6.2.1 Research question one

The first research question was:

i. How can academic assessment be conceptualised and contextualised as the theoretical framework of this study?
   The subsequent objective was pursued: *Conceptualising and contextualising academic assessment by means of a literature study with the purpose of compiling a theoretical framework for the study.*
   Question one was addressed by this objective.

The research question intended to provide a clear background regarding aspects of assessment. Assessment was conceptualised and contextualised in Chapter 2 (cf. Figure 2.1). The literature review supplied an elaborative overview of concepts in assessments, as well as findings from similar studies (cf. 2.10).

This information reported in Chapter 2, also served as the directive for the development of the paper based questionnaire, which was presented to the final year pharmacy students at the NWU School of Pharmacy. The details of the empirical part of the study were discussed in Chapter 3 and the results of the questionnaire were reported in Chapter 4.

In summary, the researcher found limited similar studies internationally and nationally in field of pharmacy, but found some similar studies internationally performed in other subject fields (cf. 2.10).

6.2.2 Research question two

The second research question was:

ii. What are the opinions of students regarding assessment practices at the NWU School of Pharmacy with specific reference to the following:
    - Communication practices in assessment
    - Formative assessment practices
    - Summative assessment practices

- Assessment anxiety
- Feedback practices after assessments
- The overall effect that assessment has on the student

The subsequent objective, in order to address the Question 2, was pursued: *To determine students' opinions concerning assessment practices at the NWU School of Pharmacy by means of a questionnaire.*

The literature review in Chapter 2 supplied the foundation to develop the questionnaire. The data resulting from the questionnaire, reported in Chapter 4, gave insight into the opinions of final year pharmacy students at the NWU School of Pharmacy regarding assessment. Opinions about communication in assessment, formative and summative assessment, feedback and other aspects of assessment practices were determined. In Chapter 5, the results from the questionnaire were interpreted.

The gender (cf. 4.3.1), age (cf. 4.3.2) and number of modules students were enrolled for (cf. 4.3.3) were included in the demography of participants. The number of test opportunities in each module per semester was reported in point 4.4.1.

In point 4.4, opinions regarding communication in assessment were reported. Although participants viewed communication regarding assessment aspects as positive in general (cf. 4.5), it was cited as one of the main reasons for provoking anxiety and poor performance in specific modules (cf. Table 4.7). Poor communication is evidently a common factor in test anxiety and poor performance (cf. 4.7.7, 4.10.5 & 2.8).

Opinions about formative assessment were reported in point 4.5. It was discovered that formative assessment, in the form of small tests before and after classes, were infrequent (cf. 4.6.1 & 4.6.2). In point 4.6.2 and 4.6.3 it showed that participants had contradicting views about the purpose of formative assessment. Participants mainly viewed the purposes of formative assessment as a means for lecturers to do presence control and to force them to prepare for class.

The findings about the frequency of formative assessment were compared with various research studies (cf. 5.3.1), after which the researcher concluded that the absence of formative assessment could lead to decreased learning, poor remediation and progress

monitoring and decreased self-efficiency amongst students. The researcher also concluded in point 5.3.2 that the findings in this study were different to other studies stating the purposes of formative assessment.

Summative assessment was also viewed in various ways by participants (cf. 4.7.1); some indicated that it evaluated their understanding of the module and problem-solving abilities, while others indicated that it only required them to memorise facts. The researcher concluded that the discrepancy in findings could be the result of the difference in summative assessment practices in different modules (cf. 5.4.1).

Participants viewed assessment which involved practical skills, large tests and demonstration as most valuable with regards to their mastering of module content (cf. 4.7.3). Participants were of the opinion that worksheets, small class tests, open book exams, project work, portfolios and journals were of least value (cf. 4.7.3). The researcher concluded, by means of comparing these findings to literature, that the assessment form was not necessarily deemed invaluable or valuable, but that the way in which it was related to its purpose was incorrect (cf. 5.4.2).

The questionnaire yielded negative results with regards to the frequency (cf. 4.6.5) and nature of (cf. 4.8.1) feedback. Participants viewed feedback as being infrequent and being non-specific, which the researcher concluded by means of literature, were detrimental to learning (cf. 5.5.1). In spite of this finding, most participants indicated that feedback had a positive effect on their learning, when supplied (cf. 4.6.6), which resonated findings by various researchers (cf. 5.5.1).

The main assessment method responsible for test anxiety, was the oral assessment method. The researcher found this finding resonate with the findings of other researchers' studies that some assessment methods cause more anxiety than others (cf. 5.6.1). Participants also indicated that they experienced more test anxiety when the content of the module was difficult and the assessment method was intricate (cf. 4.7.4), which also coincides with findings in other studies (cf. 5.6.1).

Pharmacology and Pharmaceutics were cited as the modules in which the participants experienced the most anxiety (cf. 4.10.4.6) and performed the worst (cf. 4.10.5). The latter finding was supported by results in other studies, which also showed that certain subjects

caused more anxiety and led to poor performance (cf. 5.6.1 & 5.6.2). The top two reasons cited as the causes of anxiety and poor performance in these modules were workload and communication constraints regarding assessment (cf. 4.11). The last four findings lead the researcher to believe that there is a strong relationship between high anxiety and poor performance, and that the same factors affect anxiety and poor performance (cf. 5.6.1 & 5.6.2).

6.3 LIMITATIONS OF THE STUDY

The following is recognised as limitations in the study:

A limited number of 110 participants completed the questionnaire. Although the response rate was 60%, the sample was limited to the opinions of final year students of the NWU institution within one specific year.

Another limitation was the fact that most questions in the questionnaire referred to most modules and not specific modules. The researcher was not always able to distinguish between or identify specific modules where problems in assessment might occur.

In some B.Pharm modules, there might be different lecturers who present the same module, and their assessment practices might differ. This is also deemed a limitation of the study, as no enquiry was made into this probability in the questionnaire.

The field of assessment is vast and not all elements of assessment were addressed or included in this study for the purpose of a mini-dissertation. Further studies may be conducted to address omitted elements of assessment.

The group of students who participated were self-selected and not a random sample and may not accurately reflect the opinions of the whole population of pharmacy students.

The researcher could have requested elaborated reasons for certain occurrences in assessment practices. Some of the questions could also have been misunderstood by some participants.

6.4 THE SIGNIFICANCE OF THE STUDY

The findings of the study were significant in that it offers a valuable contribution to the NWU School of Pharmacy's Director by providing an elaborative picture of the opinions of students regarding assessment practices. These may be used in the planning and implementation of future assessment practices within the Pharmacy programme.

Recommendations were made with regards to the optimisation of assessment practices at the NWU School of Pharmacy.

6.5 RECOMMENDATIONS

The researcher found it necessary to divide this section into two subsections: Recommendations regarding assessment practices as derived from the findings of this study and recommendations for further research.

6.5.1 Recommendations regarding assessment practices

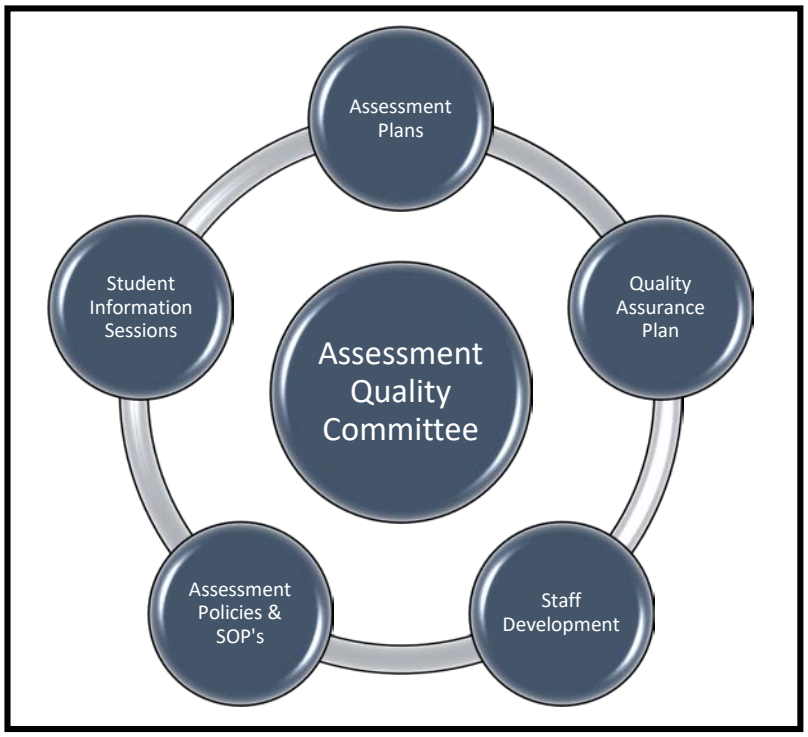


FIGURE 6.1: RECOMMENDATIONS REGARDING ASSESSMENT PRACTICES AT THE NWU SCHOOL OF PHARMACY (Compiled by the researcher, Mostert 2017)

Figure 6.1 is a graphical representation of the following recommendations made regarding assessment practices at the NWU School of Pharmacy, based on the findings in this study:

- An Assessment Quality Committee should be formed at the NWU School of Pharmacy. This committee should comprise lecturers representing each of the subject groups in the School of Pharmacy. Lecturers should only be considered for committee membership if they possess an assessment and moderation qualification, ideally a Health Professions Education qualification. The committee's main goal should be to ensure quality assessment practices at the NWU School of Pharmacy. The subsequent recommendations should all be addressed by the Assessment Quality Committee.
- Current assessment policies and practices should be evaluated and revised in light of the latest research and trends in Pharmacy education. Standard Operating Procedures (SOP's) for the implementation and regulation of assessment practices should be drafted in order to implement policies. All this should be done in considering the inputs of lecturers and students, and be made readily available to both staff and students.
- The Assessment Quality Committee should also have part in reviewing the balance of the curricula, ensuring that the amount of content in each module is reasonable with regards to the number of credits allocated and the SAQA guidelines for notional hours. This will help ensure that the workload for each module is acceptable to both lecturers and students.
- A Staff Development Programme should be developed and implemented. In light of findings in this study, the programme should include workshops or activities that also address the following topics:
  - **Communication**. When considering the findings in this study, it is apparent from participants' opinions that there are some gaps in communication regarding assessment. The ineffective or lack of communication may be the most probable cause of many misconceptions, misunderstandings and feelings of uncertainty regarding assessment practices at the NWU School of Pharmacy evident in this study. Lecturers are provided with assessment policies which provide structure and guidance in practice, but communication policies with specific reference to assessment principles and practices are rarely detailed. Most lecturers are left to their own devices with regards to communication, and personally they may or may not have the necessary skills or competencies. Communication skills should be vigorously addressed in the programme.
  - **Assessment policies and SOP's**: The staff development programme should refresh lecturers' knowledge on assessment policies and SOP's, and empower lecturers to

effectively communicate the policies and SOP's to students and successfully implement these in their module assessment.

- **Subject group specific issues**. The programme should not only aim to address general issues regarding assessment, but also cater for the unique assessment issues that arise in specific subject groups. The programme should comprise directed staff development that is focussed on the B.Pharm programme and its individual modules, for all academic and support personnel to unite and align their practices.
- **Theoretical foundation of assessment**. Although some of the lecturers in the School of Pharmacy have obtained postgraduate degrees in Health Professions Education, there are many lecturers who have practical experience in assessment, but lack the theoretical foundation. The researcher recommends that topics including, but not limited to, constructive alignment, the purpose of different assessment types, the implementation of assessment methods and the principles of good assessment should be addressed.
- **Continuous Professional Development**. The staff development programme should provide lecturers with the opportunity to update their skills in assessment practices continuously. Regarding the vast amounts of research with regards to new and innovative teaching, learning and assessment approaches, the possibilities for continuous professional and/or staff development are not only possible, but highly achievable. Each new generation of students provides a challenge with regards to teaching and communication, and necessitates the continuous improvement and development of subsequent and supportive practices in the form of staff development workshops and training.

- In light of the findings in this study, a comprehensive, evidence-based, formative assessment plan should be created and implemented. At the NWU School of Pharmacy, a detailed formative assessment plan is provided for each module, but the results of these formative assessments count towards the participation marks of the students, making it high-stakes assessment. A recommendation would be that students be subjected to a specified amount of low-stakes, formative assessment - before or after lectures - in order to attain the purpose of formative assessment. The detailed assessment plans should be devised by means of collaboration between the NWU School of Pharmacy Director, the Departmental Managers and the lecturer of each module, to promote transparency and standardise assessment practices.
- A functional quality assurance plan should be devised and executed in collaboration with all role-players, with regards to the specific and detailed assessment plans. The

researcher recommends that the quality assurance plan be devised by considering the principles of good assessment, as detailed in point 2.4. This quality assurance plan should aim to not be a burden on lecturers, but rather provide clear guidance and support in order to empower them and enlighten students with regards to the purpose of assessment.

- The researcher recommends that student information sessions should be provided in each module. In this session, the lecturer should clearly communicate and explain the assessment plan in the specific module including the level of assessment, outcomes and assessment criteria, assessment types and methods that will be used. This will assist students in being self-efficient, enhance participation, curb anxiety and ultimately lead to better performance.
- The results and recommendations of the current study should be made available to the management and lecturers at the NWU School of Pharmacy, in order to provide a comprehensive quantitative account of fourth year pharmacy students' opinions of assessment practices.
- Lastly, the results should also be presented in the form of journal articles and congress papers.

6.5.2 Research recommendations

The researcher takes this opportunity to make the following additional recommendations with reference to future research in the field:

- A qualitative study may be useful in order to accurately conceptualise the perceptions of students and identify reasons why students view current assessment practices in the way they do and could possibly identify other areas of change in assessment practices.
- Similar studies to this one should be conducted on students in specific subject groups, in order to identify shortcomings that are module specific.
- A study determining the perceptions of lecturers may also yield valuable results with regards to optimising assessment practices.
- Action research could be conducted, where the evidence-based assessment plans are developed, implemented and then evaluated after every cycle. This will allow for tailor-made assessment plans, which can be improved and adjusted after every evaluation.

6.6 FINAL REMARKS

Assessment is the core of education. The way in which it is conducted has a profound impact on students learning and learning experiences and determines the failure or success of students not only in institutions' undergraduate programmes, but in their profession and continuous education. Teaching-and-learning is the map determined by the destination of assessment. Although assessment practices at the NWU School of Pharmacy are clearly founded on good assessment policies and guidelines, there are seemingly, in the opinion of students, issues in the execution of some good assessment practices.

Challenges, including the lack of low-stakes formative assessment of and for learning, insufficient communication regarding assessment, the lack of standardisation and the absence of quality assessment support, most likely developed due to an absence of programme-specific staff development. By developing an assessment-focussed staff development programme and the convening of a committee directing the quality of assessment practices, the above issues could be resolved over time.

When successfully addressing and solving these challenges, the purpose of assessment can be fulfilled. Enhanced assessment practices NWU School of Pharmacy, developed by lecturers who are skilled and trained assessors, could most certainly create opportunities for students to learn effectively, enhance their learning experiences and ultimately lead to them graduating as self-efficient, confident, successful and skilful pharmacists.

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APPENDIX A1

QUESTIONNAIRE - THE OPINIONS OF FINAL YEAR UNDERGRADUATE PHARMACY STUDENTS AT THE NORTH-WEST UNIVERSITY REGARDING ASSESSMENT

Dear Student

This is a friendly but urgent request to complete this questionnaire as honest and completely as possible. Your participation is very important.

Please note that this questionnaire consists of two types of questions. Closed questions are where you only have to choose and mark an option of your choice, and open-end questions where more elaborate information or descriptions are required. Please ensure that you answer all the questions.

Please note that by completing this questionnaire you are voluntarily agreeing to participate in this research study and you may withdraw from this study at any given moment. You will remain anonymous and your data will be treated confidentially at all times. You will not receive any compensation for completing the questionnaire.

If you have any questions regarding this questionnaire, please contact me at liane.mostert@nwu.ac.za

BIOGRAPHICAL INFORMATION

Please circle the appropriate NUMBER reflecting your response

1.1 SECTION 1 – DEMOGRAPHIC INFORMATION

Office use only ☐☐☐ **1 - 3**

1.	**What is your gender?**	(a) Male	1	☐**4**
		(b) Female	2	
2.	**What is your age?**		1	☐**5**
3.	**Number of Modules you are enrolled for in the year 2016**	(a) One	1	
		(b) Two	2	
		(c) Three	3	☐**6**
		(d) Four	4	
		(e) Five	5	
		(f) Six or more	6	

1.2 GENERAL INFORMATION REGARDING ASSESSMENT

4.	**On average, how many test opportunities are scheduled for each module for which you are enrolled for per semester?**	(a) One	1	
		(b) Two	2	
		(c) Three	3	☐**8**
		(d) Four	4	
		(e) Five	5	
		(f) Six or more	6	

1.3 COMMUNICATION REGARDING ASSESSMENT

		Never	**Minimal**	**Most of**	**Always**	
5.	**Are the expectancies of the lecturer(s) regarding tests explained to you during contact sessions?**	1	2	3	4	☐**9**
6.	**In most of your modules, the content covered in tests and exams are reflective of the outcomes in the study guide**	1	2	3	4	☐**10**

7.	**In most of your modules, the types of questions asked in test and exams, are reflective of how the content of the modules has been explained to you in class**	1	2	3	4	**□11**
8.	**In most of your modules, is there an assessment plan made available to you at the beginning of every semester (by means of a study letter, study guide or eFundi) (an assessment plan indicates how, when and where you will be assessed)**	1	2	3	4	**□12**

1.4 CONTINUOUS ASSESSMENT (FORMATIVE ASSESSMENT)

		Never	**Minimal**	**Most of**	**Always**	
9.	**In the modules you are enrolled for, you are expected to write a preparation test before the beginning of every lecture.**	1	2	3	4	**□13**

10.	**In your opinion, preparation tests are used by lecturers ___:** *(You can choose more than one option)*	(a) To determine what you already know about the subject of the lecture	1	**□14** **□15**
		(b) To do presence control	2	**□16**
		(c) To contribute to your participation mark	3	**□17**
		(d) To force you to prepare for lectures	4	**□18**
		(e) Other		
10.1	If Other, please specify:			**□19** **□20** **□21** **□22**

11.	**In your opinion, small tests after lectures are used by lecturers _____:** *(You can choose more than one option)*	(a) To determine if you understand the content of the lecture	1	**□23**
		(b) To control class presence	2	**□24**
		(c) To contribute to you participation mark	3	**□25**
		(d) To force you to concentrate during the lecture	4	**□26** **□27**
		(e) Other	5	
11.1	If Other, please specify:			**□28** **□29** **□30** **□31**

		In **NONE** of my	In **SOME** of my	In **MOST** of my	In **ALL** of my	
12.	**In the modules you are enrolled for, you are expected to write continuous small class tests after the completion of each lecture**	1	2	3	4	**□32**
13.	**You receive feedback after the completion of small class tests**	1	2	3	4	**□33**
14.	**The feedback you receive helps you to determine where your short comings are with regards to the content of the modules**	1	2	3	4	**□34**

15.	**The feedback you receive, helps you to learn more effectively and purpose driven**	1	2	3	4	**□35**

1.5 TESTS AND EXAMS (SUMMATIVE ASSESSMENT)

The following questions regard all the modules you are enrolled for.

16.	**You experience test opportunities as a way in which lecturers:** *(You can choose more than one option)*	(a) Determine if you sufficiently memorised the content of the module	1	**□36**
		(b) Determine if you understand the content of the module	2	**□37**
		(c) Determine if you can use knowledge about to content to solve problems	3	**□38**
		(d) Other	4	**□39**
16.1	If Other, please specify:			**□40** **□41** **□42** **□43**

17.	**Who decides on what content of the modules should be assessed?**	**Never**	**Minimal**	**Most of the time**	**Always**	
17.1	Lecturers	1	2	3	4	**□44**
17.2	Students	1	2	3	4	**□45**
17.3	Lecturers and Students	1	2	3	4	**□46**
17.4	If Other, please specify:					**□47** **□48** **□49** **□50**
18.	**Who decides on how the modules should be assessed?**	**Never**	**Minimal**	**Most of the time**	**Always**	
18.1	Lecturers	1	2	3	4	**□51**
18.2	Students	1	2	3	4	**□52**
18.3	Lecturers and Students	1	2	3	4	**□53**
18.4	If Other, please specify:					**□54** **□55** **□56** **□57**

19.	**You experience the following forms of assessment as _____ in terms of the contribution it has to your ability to master the content of the modules you are enrolled for.** *1 – a Waste of time* *2 – Of minimum value* *3 – Of more value* *4 – Very valuable* *5 – Not applicable (form of assessment not used in any of your modules)*	**Waste of time**	**Of minimum value**	**Of more value**	**Very valuable**	**Not applicable**	
19.1	Portfolios	1	2	3	4	5	**□58**
19.2	Work sheets	1	2	3	4	5	**□59**
19.3	Journals (Diaries)	1	2	3	4	5	**□60**

19.4	Demonstrations	1	2	3	4	5	☐61
19.5	Presentations	1	2	3	4	5	☐62
19.6	Practical skills tasks (during practical periods)	1	2	3	4	5	☐63
19.7	Big assessment tests (1-3 hour papers under examination conditions, equal to semester tests)	1	2	3	4	5	☐64
19.8	Big class test (20-100 marks, for example those written during test periods, smaller than big assessment tests)	1	2	3	4	5	☐65
19.9	Small class tests (5-10 marks, during contact sessions, contributes to participation mark)	1	2	3	4	5	☐66
19.10	Small class tests (5-10 marks, during contact sessions, which doesn't contributes to participation mark)	1	2	3	4	5	☐67
19.11	Oral assessments	1	2	3	4	5	☐68
19.12	Multiple choice tests (on multiple choice cards or on eFundi)	1	2	3	4	5	☐69
19.13	Big theoretical assignments (Essays, referents)	1	2	3	4	5	☐70
19.14	Practical reports	1	2	3	4	5	☐71
19.15	Project work	1	2	3	4	5	☐72
19.16	Debates	1	2	3	4	5	☐73
19.17	Open book exams in a venue under examination conditions	1	2	3	4	5	☐74
19.18	Open book exams in the form of "take home" papers (take-home exam)	1	2	3	4	5	☐75
19.19	If Other, please specify:						☐76 ☐77 ☐78 ☐79

20.	**Use the following scale to indicate the level of anxiety (e.g. I experience _____ anxiety) you experience before and/or during the following assessment methods.** **1 – Much anxiety 2 – Moderate anxiety** **3 – Little anxiety 4 – No anxiety** **5 – N/A Not applicable (methods of assessment not used in the modules I am enrolled for)**	**Much**	**Moderate**	**Little**	**None**	**Not Applicable**	
20.1	Portfolios	1	2	3	4	5	☐80
20.2	Work sheets	1	2	3	4	5	☐81
20.3	Journals (Diaries)	1	2	3	4	5	☐82
20.4	Demonstrations	1	2	3	4	5	☐83
20.5	Presentations	1	2	3	4	5	☐84
20.6	Practical skills tasks (during practical periods)	1	2	3	4	5	☐85
20.7	Big assessment tests (1-3 hour papers under examination conditions, equal to semester tests)	1	2	3	4	5	☐86
20.8	Big class test (20-100 marks, for example those written during test periods, smaller than big assessment tests)	1	2	3	4	5	☐87
20.9	Small class tests (5-10 marks, during contact sessions, contributes to participation mark)	1	2	3	4	5	☐88

20.10	Small class tests (5-10 marks, during contact sessions, which doesn't contributes to participation mark)	1	2	3	4	5	☐89
20.11	Oral assessments	1	2	3	4	5	☐90
20.12	Multiple choice tests (on multiple choice cards or on eFundi)	1	2	3	4	5	☐91
20.13	Big theoretical assignments (Essays, referents)	1	2	3	4	5	☐92
20.14	Practical reports	1	2	3	4	5	☐93
20.15	Project work	1	2	3	4	5	☐94
20.16	Debates	1	2	3	4	5	☐95
20.17	Open book exams in a venue under examination conditions	1	2	3	4	5	☐96

20.18	If Other, please specify:			☐97 ☐98 ☐99 ☐100
21.	**Is the anxiety you experience caused by:**	(a) The type of assessment	1	☐101
		(b) The content of the module	2	☐102
		(c) The type of assessment and content of the module	3	☐103 ☐104
		(d) Other	4	☐105
21.1	If Other, please specify:			☐106 ☐107 ☐108 ☐109

22.	**Write down the module code(s) in which you experience the most anxiety in terms of assessment**	
		☐110 ☐111 ☐112 ☐113 ☐114
23.	**Briefly explain the reasons why you experience anxiety during certain assessment methods or modules**	
		☐115 ☐116 ☐117 ☐118 ☐119

1.6 FEEDBACK

The following questions are applicable to all the modules you are currently enrolled for:

24.	**Your lecturers reports back regularly about the following aspects in the modules which you are enrolled for:**	**Never**	**Minimal**	**Most of the time**	**Always**	
24.1	Your achievements in comparison to the rest of the class	1	2	3	4	☐120
24.2	Outcomes you have mastered	1	2	3	4	☐121
24.3	Student(s) strengths (in relation to the class or individually)	1	2	3	4	☐122
24.4	Student(s) weaknesses (in relation to the class or individually)	1	2	3	4	☐123

24.5	Aspects which requires further support and or help from lecturer	1	2	3	4	☐124
25.	**In which format is feedback/report of assessment tasks supplied to you?**	**Never**	**Minimal**	**Most of the time**	**Always**	
25.1	Memorandums are placed on eFundi and students can work through it by themselves	1	2	3	4	☐125
25.2	Memorandums are discussed in class	1	2	3	4	☐126
25.3	Marking schematic or rubric is made available, in either the study guide, eFundi or in the class	1	2	3	4	☐127
25.4	Oral feedback is given in class	1	2	3	4	☐128
25.5	Individual feedback (written or oral):	1	2	3	4	☐129
25.6	If Other, please specify:					☐130 ☐131 ☐132 ☐133
26.	**In which way is your performance feedback supplied to you regarding the assessments you undertook?**	**Never**	**Minimal**	**Most of the time**	**Always**	
26.1	Only by means of marks/symbols/percentages	1	2	3	4	☐134
26.2	Descriptive comments on the assessment document or in the form of a analytical rubric	1	2	3	4	☐135
26.3	A combination of the above	1	2	3	4	☐136
26.4	If Other, please specify:					☐137 ☐138 ☐139 ☐140
27.	**You experience feedback after assessments as:**	**Disagree Strongly**	**Disagree mostly**	**Agree mostly**	**Agree Strongly**	
27.1	A way in which to make you aware of where you can improve.	1	2	3	4	☐141
27.2	An aid to help you better your learning methods	1	2	3	4	☐142
27.3	Just another way to make you feel as if you will never master the content of the module	1	2	3	4	☐143
27.4	Fair and reflective of the outcomes in the study guide	1	2	3	4	☐144
27.5	Fair and reflective of how work was presented in class	1	2	3	4	☐145
27.6	If Other, please specify:					☐146 ☐147 ☐148 ☐149

1.7 GENERAL EXPERIENCES REGARDING ASSESSMENT

The following questions are regarding all modules you are enrolled for:

28.	**Indicate your opinion regarding the following statements and questions (within context of your own modules):**	**Disagree Strongly**	**Disagree mostly**	**Agree mostly**	**Agree Strongly**	
28.1	You feel overwhelmed with the amount of work in most of your modules.	1	2	3	4	☐150

28.2	You feel you write to many small and big tests which contribute to your marks.	1	2	3	4	☐151
28.3	The results of formative assessment (all assessments except formal scheduled class tests and exams) during the semester is not reflective of your academic capabilities.	1	2	3	4	☐152
28.4	Semester tests and exams are the only forms of assessment which really tests if you mastered the content of your modules.	1	2	3	4	☐153
28.5	You will only participate in assessment activities if it contributes to your participation mark.	1	2	3	4	☐154
28.6	You actively take part in all learning activities, regardless if it contributes to your marks or not	1	2	3	4	☐155
28.7	The Final exam is the most important part of the assessment plan.	1	2	3	4	☐156
28.8	According to you, it is not really necessary that students write exam in some modules, the continuous assessment is enough to ensure you master the work	1	2	3	4	☐157
28.9	You will work harder during the semester if it is possible for you to be promoted on the basis of your participation mark (promoted means that you do not have to write exams)	1	2	3	4	☐158
28.10	All students should be allowed to write the final exam, regardless of their participation mark.	1	2	3	4	☐159
28.11	Exams are essential, because it gives you the opportunity to study the work as a whole and be assessed accordingly.	1	2	3	4	☐160
28.12	Your exam marks are usually not comparable to your participation mark, there is a big difference.	1	2	3	4	☐161
28.12.1	Please motivate your answer:					☐162 ☐163 ☐164 ☐165
		Disagree Strongly	**Disagree mostly**	**Agree mostly**	**Agree Strongly**	
29.	**You and/or other students misuse the second exam opportunity to work out an exam schedule which caters to your own needs**	1	2	3	4	☐166
30.	**Exams do not necessarily assess your knowledge and skills, but rather your ability to work under time constraint pressure**	1	2	3	4	☐167
31.	**You feel that the marks you receive for most of your modules are not reflective of the input and time you spent mastering the contents of the modules.**	1	2	3	4	☐168
31.1	Please motivate your answer:					☐169 ☐170 ☐171 ☐172

		Disagree Strongly	Disagree mostly	Agree mostly	Agree Strongly	
32.	**You always feel stressed before formal tests and exams, because you are unsure about what the lectures expect from you.**					**□173**
33.	**The pressure which you experience during assessment weeks and exams has a big negative impact on your life.**					**□174**
33.1	Please motivate your answer:					**□175** **□176** **□177** **□178**
34.	**You feel that tests and exams only evaluate your ability to memorise facts**					**□176**
35.	**You feel tests and exams evaluate your ability to apply the knowledge you acquired in real life situations**					**□177**
36.	**Most of your lecturers supply you with help and support in situations which you do not perform well in assessments.**					**□178**
36.1	**If it is the case, please name the module code(s) in which you spend the most time, but perform the worst:**					**□179** **□180** **□181** **□182**
37.	**Briefly give your opinion / possible reasons for your poor performance in the above mentioned modules:**					**□183** **□184** **□185** **□186**

Thank you for your participation. Your time and input is greatly appreciated. The results of this study will be made available to the School of Pharmacy, and will possibly contribute greatly to the enhancement of assessment practices.

APPENDIX A2

VRAELYS - DIE OPINIES VAN FINALE JAAR VOORGRAADSE FARMASIE STUDENTE BY DIE NOORDWES UNIVERSITEIT TEN OPSIGTE VAN ASSESSERING

Beste Student

Hierdie is 'n vriendelike tog dringende versoek om hierdie vraelys so eerlik en volledig moontlik te voltooi. U deelname is baie belangrik.

Neem asseblief kennis dat hierdie vraelys uit twee tipe vrae bestaan. Geslote vrae is waar jy slegs 'n opsie van u keuse moet kies en merk. Oop vrae is waar u gevra word om meer uit te brei of 'n beskrywing moet gee van 'n spesifieke vraag. Maak asseblief seker dat u so ver as moontlik al die vrae beantwoord.

Neem ook kennis dat deur die voltooiing van die vraelys, u vrywilliglik instem om deel te neem aan hierdie navorsingsprojek, en dat u ten enige tyd mag ontrek van die studie. U deelname en data sal anoniem en konfidensieel hanteer word ten alle tye. U sal nie enige vergoeding ontvang vir die voltooiing van hierdie vraelys nie.

Indien u enige vrae het aangaande die vraelys, is 'n vry om my te kontak by liane.mostert@nwu.ac.za

BIOGRAFIESE INLIGTING

Please circle the appropriate NUMBER reflecting your response

1.2 Deel 1 – DEMOGRAFIESE INLIGTING

Office use only ☐☐☐ **1 - 3**

1.	**Wat is u geslag?**	(a) Manlik	1	☐**4**
		(b) Vroulik	2	
2.	**Hoe oud is u?**		1	☐**5**
3.	**Dui asseblief aan vir hoeveel modules u ingeskryf is in 2016**	(a) Een	1	☐**6**
		(b) Twee	2	
		(c) Drie	3	
		(d) Vier	4	
		(e) Vyf	5	
		(f) Ses	6	

1.2 ALGEMENE INLIGTING OOR ASSESSERING

4.	**Gemiddeld, per semester, hoeveel toetsgeleenthede is geskeduleer per module waarvoor u ingekryf is?**	(a) Een	1	☐**8**
		(b) Twee	2	
		(c) Drie	3	
		(d) Vier	4	
		(e) Vyf	5	
		(f) Ses	6	

1.3 KOMMUNIKASIE TEN OPSIGTE VAN ASSESSERING

		Nooit	**Minimaa**	**Meeste van die**	**Altyd**	
5.	**Word die dosent se verwagtinge ten opsigte van toetse aan u verduidelik tydens kontaksessies?**	1	2	3	4	☐**9**
6.	**Die inhoud vervat in toetse en eksamens is reflekterend van die uitkomste in die studiegids, in meeste van u modules.**	1	2	3	4	☐**10**

7.	**In meeste van u modules, is die tipe vrae wat gevra word in toetse en eksamens is reflekterend van hoe die inhoud van die module aan u verduidelik is in klas,**	1	2	3	4	**□11**
8.	**Is daar in meeste van jou modules, 'n assesseringsplan beskikbaar gestel aan die begin van elke semester (deur middle van 'n studiebrief, studiegids of eFundi)?('n assesseringsplan dui aan hoe, waar en wanneer jy geassesseer gaan word.)**	1	2	3	4	**□12**

1.4 DEURLOPENDE ASSESSERING (FORMATIEWE ASSESSERING)

		Nooit	**Minimaa**	**Meeste van die**	**Altyd**	
9.	**In die modules waarvoor jy ingeskryf is, word daar van jou verwag om 'n voorbereidings toets te skryf aan die begin van elke lesing.**	1	2	3	4	**□13**

10.	**In jou opinie, word voorbereidingstoetse gebruik deur dosente om _____(jy mag meer as een opsie kies)**	(f) Te bepaal wat jy alreeds weet van die onderwerp van die lesing.	1	**□14** **□15**
		(g) Presensie te neem	2	**□16**
		(h) By te dra tot jou deelname punt	3	**□17**
		(i) Jou te dwing om voor te berei vir lesings	4	**□18**
		(j) Ander		
10.1	Indien "Ander" Spesifiseer asseblief:			**□19** **□20** **□21** **□22**

11.	**In jou opinie, word klein toetse na die lesings gebruik deur dosente om _____(jy mag meer as een opsie kies)**	(f) Te bepaal of jy die inhoud van die lesing verstaan het.	1	**□23**
		(g) Presensie te neem	2	**□24**
		(h) By te dra tot jou deelnamepunt	3	**□25**
		(i) Jou te forseer om te konsentreer tydens die lesing	4	**□26** **□27**
		(j) Ander	5	
11.1	Indien "Ander" Spesifiseer asseblief:			**□28** **□29** **□30** **□31**

		In **GEEN** van my modules	In **SOMMIGE** van my modules	In **MEESTE** van my modules	In **AL** my modules	
12.	**In die modules waarvoor jy ingeskryf is, word daar van jou verwag om deurlopend klein klastoetse te skryf na afloop van elke lesing**	1	2	3	4	**□32**
13.	**Jy ontvang terugvoer na die voltooiing van klein klastoetse**	1	2	3	4	**□33**
14.	**Die terugvoer wat jy ontvang, help jou om te bepaal wat jou tekortkominge is**	1	2	3	4	**□34**

	ten opsigte van die inhoud van die modules.					
15.	**Die terugvoer wat jy ontvang help jou om meer effektief en doelgerig te leer.**	1	2	3	4	**□35**

1.5 TOETSE EN EKSAMENS (SUMMATIEWE ASSESSERING)

Die volgende vrae handel oor die modules waarvoor jy ingeskryf is.

16.	**Jy ervaar toetsgeleenthede as 'n manier vir dosente om:_____ (*Jy mag meer as een opsie kies)***	(e) Te bepaal of jy die inhoud van die module genoegsaam gememoriseer het.	1	**□36**
		(f) Te bepaal of jy die inhoud van die module verstaan	2	**□37**
		(g) Te bepaal of jy jou kennis van die inhoud kan gebruik om probleme op te los.	3	**□38**
		(h) Ander	4	**□39**
16.1	Indien "Ander" Spesifiseer asseblief:			**□40** **□41** **□42** **□43**

17.	**Wie besluit watter deel van die inhoud in die module moet geassesseer word?**	**Nooit**	**Minimaa**	**Meeste van die**	**Altyd**	
17.1	Dosente	1	2	3	4	**□44**
17.2	Studente	1	2	3	4	**□45**
17.3	Dosente and Studente	1	2	3	4	**□46**
17.4	Indien "Ander" Spesifiseer asseblief					**□47** **□48** **□49** **□50**

18.	**Wie besluit oor hoe die modules geassesseer moet word?**	**Nooit**	**Minimaa**	**Meeste van die**	**Altyd**	
18.1	Dosente	1	2	3	4	**□51**
18.2	Studente	1	2	3	4	**□52**
18.3	Dosente and Studente	1	2	3	4	**□53**
18.4	Indien "Ander" Spesifiseer asseblief					**□54** **□55** **□56** **□57**

19.	**Na aanleiding van jou ervaring, sien jy die volgende assesseringvorme as _____ ten opsigte van die bydrae wat dit het tot jou bemeestering van die module inhoud in die modules waarvoor jy ingeskryf is:** *1 – 'n mors van tyd 2 – van minimum waarde 3 – Van meer waarde 4 – Baie waardevol 5 – Nie van toepassing (assesseringsvorm nie gebruik in die modules nie)*	**'n mors van tyd**	**Van minimum waarde**	**Van meer waarde**	**Baie waardevol**	**Nie van toepassing**	
19.1	Portfolios	1	2	3	4	5	**□58**

19.2	Werkskaarte	1	2	3	4	5	☐59
19.3	Joernale (Dagboeke)	1	2	3	4	5	☐60
19.4	Demonstrasies	1	2	3	4	5	☐61
19.5	Voordragte	1	2	3	4	5	☐62
19.6	Praktiese vaardigheidstake (gedurende praktiese periodes)	1	2	3	4	5	☐63
19.7	Groot assesseringstoetse (1-3 uur vraestelle, onder eksamen toestande gelykstaande aan semester toetse)	1	2	3	4	5	☐64
19.8	Groot klastoetse (20-100 punte, byvoorbeeld die toetse gekryf in toetsperiodes, kleiner as groot assesseringstoetse)	1	2	3	4	5	☐65
19.9	Klein klastoetse (5-10 punte, gedurende 'n kontaksessie, dra by tot deelnamepunte)	1	2	3	4	5	☐66
19.10	Klein klastoetse (5-10 punte, gedurende 'n kontaksessie, dra nie by tot deelnamepunte nie)	1	2	3	4	5	☐67
19.11	Mondelinge assesserings (toetse)	1	2	3	4	5	☐68
19.12	Meervoudige keuse toetse (Multiple choice) (op meervoudige keuse (multiple choice) karate of op eFundi)	1	2	3	4	5	☐69
19.13	Groot teoretiese werkstukke/opdragte (Opstelle, referente)	1	2	3	4	5	☐70
19.14	Praktiese verslae	1	2	3	4	5	☐71
19.15	Projek werk	1	2	3	4	5	☐72
19.16	Debatte	1	2	3	4	5	☐73
19.17	Oop-boek eksamens in 'n lokaal onder eksamen toestande	1	2	3	4	5	☐74
19.18	Oop-boek eksamens in die vorm van "weg neem/huiswerk" toetse (take-home exam)	1	2	3	4	5	☐75
19.19	Indien daar ander is, spesifiseer asseblief						☐76 ☐77 ☐78 ☐79

20.	**Gebruik die volgende skaal om die vlak van angstigheid te beskryf (vb. Ek ondervind _____angstigheid) voor en/of gedurende die volgende metodes van assessering.** **1 – Baie angstigheid 2 – Matige angstigheid** **3 – Min Angstigheid 4 – Geen angstigheid** **5 – Nvt – Nie van toepassing (metode van assessering word nie gebruik in die modules waarvoor ek ingeskryf is nie)**	**Much**	**Moderate**	**Little**	**None**	**Not Applicable**	
20.1	Portfolios	1	2	3	4	5	☐80
20.2	Werkskaarte	1	2	3	4	5	☐81
20.3	Joernale (Dagboeke)	1	2	3	4	5	☐82
20.4	Demonstrasies	1	2	3	4	5	☐83
20.5	Voordragte	1	2	3	4	5	☐84
20.6	Praktiese vaardigheidstake (gedurende praktiese periodes)	1	2	3	4	5	☐85
20.7	Groot assesseringstoetse (1-3 uur vraestelle, onder eksamen toestande gelykstaande aan semester toetse)	1	2	3	4	5	☐86

20.8	Groot klastoetse (20-100 punte, byvoorbeeld die toetse gekryf in toetsperiodes, kleiner as groot assesseringstoetse)	1	2	3	4	5	☐87
20.9	Klein klastoetse (5-10 punte, gedurende 'n kontaksessie, dra by tot deelnamepunte)	1	2	3	4	5	☐88
20.10	Klein klastoetse (5-10 punte, gedurende 'n kontaksessie, dra nie by tot deelnamepunte nie)	1	2	3	4	5	☐89
20.11	Mondelinge assesserings (toetse)	1	2	3	4	5	☐90
20.12	Meervoudige keuse toetse (Multiple choice) (op meervoudige keuse (multiple choice) karate of op eFundi)	1	2	3	4	5	☐91
20.13	Groot teoretiese werkstukke/opdragte (Opstelle, referente)	1	2	3	4	5	☐92
20.14	Praktiese verslae	1	2	3	4	5	☐93
20.15	Projek werk	1	2	3	4	5	☐94
20.16	Debatte	1	2	3	4	5	☐95
20.17	Oop-boek eksamens in 'n lokaal onder eksamen toestande	1	2	3	4	5	☐96

20.18	Indien daar ander is, spesifiseer asseblief			☐97 ☐98 ☐99 ☐100
21.	**Word die angstigheid wat jy ervaar veroorsaak deur:**	(e) Die tipe assessering	1	☐101
		(f) Die inhoud van die Module	2	☐102
		(g) The tipe assessering en die inhoud van die module	3	☐103 ☐104
		(h) Ander	4	☐105
21.1	Indien ander, spesifiseer asseblief			☐106 ☐107 ☐108 ☐109

22.	**Skryf die module kode(s) neer waarin jy die meeste angstigheid ervaar ten opsigte van assessering.**	
		☐110 ☐111 ☐112 ☐113 ☐114
23.	**Verduidelik kortliks die redes wat lei tot jou ervaring van angstigheid tydens sekere assessering metodes of modules**	
		☐115 ☐116 ☐117 ☐118 ☐119

1.6 TERUGVOER

Die volgende vrae is van toepassing op die modules waarvoor u tans ingekryf is:

24.	**Jou dosente lewer gereeld verslag aan jou ten opsigte van die volgende aspekte, in die modules waarvoor jy ingeskryf is:**	**Nooit**	**Minimaa**	**Meeste van die**	**Altyd**	
24.1	Jou prestasies in vergelyking met die res van die klas	1	2	3	4	☐120

24.2	Uitkomste wat jy bemeester het	1	2	3	4	☐121
24.3	Student(e) sterkpunte (ten opsigte van die klas of individueel)	1	2	3	4	☐122
24.4	Student(e) swakpunte (ten opsigte van die klas of individueel)	1	2	3	4	☐123
24.5	Aspekte wat verdere ondersteuning of hulp vereis van die dosent	1	2	3	4	☐124
25.	**In watter format word die terugvoer van assesseringstake aan jou verskaf?**	**Nooit**	**Minimaa**	**Meeste van die**	**Altyd**	
25.1	Memorandums word op eFundi geplaas en studente kan self daardeur werk.	1	2	3	4	☐125
25.2	Memorandums word bespreek in die klas	1	2	3	4	☐126
25.3	'n Merk skema of rubriek (merklys) word beskikbaar gestel, in die studiegids, op eFundi of in die klas	1	2	3	4	☐127
25.4	Mondelingse terugvoer word gegee in die klas	1	2	3	4	☐128
25.5	Individuele terugvoer word gegee (geskryf of mondelings):	1	2	3	4	☐129
25.6	Indien ander, spesifiseer asseblief					☐130 ☐131 ☐132 ☐133
26.	**Op watter manier word jou terugvoer aan jou verskaf ten opsigte van jou prestasies in die assesserings wat jy voltooi het?**	**Nooit**	**Minimaal**	**Meeste van die**	**Altyd**	
26.1	Slegs deur middle van punte/simbole/persentasies	1	2	3	4	☐134
26.2	Beskrywende opmerkings op die assessering of in die vorm van 'n analitiese rubriek (merkskema)	1	2	3	4	☐135
26.3	'n kombinasie van die bogenoemde	1	2	3	4	☐136
26.4	Indien ander, spesifiseer asseblief					☐137 ☐138 ☐139 ☐140
27.	**Jy ervaar terugvoer na afloop van assesserings as:**	**Stem GLAD nie**	**Stem GEDEELTE**	**Stem**	**Stem HEELTEMA**	
27.1	'n manier om jou aandag te vestig op aspekte waarin jy kan verbeter.	1	2	3	4	☐141
27.2	'n manier om jou te help om jou leermetodes te verbeter	1	2	3	4	☐142
27.3	Net nog 'n manier om jou te laat voel dat jy nooit die inhoud van die module sal bemeester nie.	1	2	3	4	☐143
27.4	Regverdig en reflekterend van die uitkomste in die studiegids	1	2	3	4	☐144
27.5	Regverdig en reflekterend van hoe werk in die klas behandel is.	1	2	3	4	☐145
27.6	Indien ander, spesifiseer asseblief					☐146 ☐147 ☐148 ☐149

1.7 ALGEMENE ERVARINGS TEN OPSIGTE VAN ASSESSERING

Die volgende vrae is van toepassing op die modules waarvoor u tans ingekryf is:

28.	**Stel jou opinie ten opsigte van die volgende stellings en vrae (binne die konteks van jou eie modules)**	**Stem GLAD nie saam nie**	**Stem GEDEELTELIK nie**	**Stem MEESTAL**	**Stem HEELTEMAL SAAM**	
28.1	Jy voel oorweldig deur die hoeveelheid werk in die meeste van jou modules.	1	2	3	4	**☐150**
28.2	Jy voel dat jy te veel klein en groot toetse moet skryf wat bydrae tot jou punte	1	2	3	4	**☐151**
28.3	Die uitslae van Formatiewe assesserings (alle assesserings behalwe geskeduleerde klastoetse en eksamens) gedurende die semesters is nie ‘n refleksie van jou akademiese vermoëns nie.	1	2	3	4	**☐152**
28.4	Semestertoetse en eksamens is die enigste vorms van assessering wat werklik toets of jy die inhoud van die module bemeester het.	1	2	3	4	**☐153**
28.5	Jy sal slegs deelneem aan assesseringsaktiwiteite indien dit bydra tot jou deelname punt.	1	2	3	4	**☐154**
28.6	Jy neem aktief deel in alle leer aktiwiteite, ongeag of dit bydra tot jou punte of nie.	1	2	3	4	**☐155**
28.7	Die finale eksamen is die mees belangrikste deel van die assessering plan.	1	2	3	4	**☐156**
28.8	In jou opinie is dit nie waarlik nodig dat studente eksamen skryf in sommige modules nie, die deurlopenede assesserings is genoegsaam om te verseker dat jy die werk bemeester.	1	2	3	4	**☐157**
28.9	Jy sal harder werk gedurende die semester, indien dit moontlik is dat jy gepromoveer kan word op die basis van jou deelnamepunt(promoveer beteken jy hoef nie eksamen te skryf nie)	1	2	3	4	**☐158**
28.10	Alles studente moet toegelaat word om die finale eksamen te skryf, ongeag hulle deelname punt..	1	2	3	4	**☐159**
28.11	Eksamens is essensieel, want dit gee jou die geleentheid om die werk te leer as ‘n geheel en aan die hand daarvan geassesseer te word.	1	2	3	4	**☐160**
28.12	Jou eksamen punte is gewoonlik nie vergelykbaar met jou deelnamepunt nie, daar is ‘n groot verskil.	1	2	3	4	**☐161**
28.12.1	Motiveer asseblief jou antwoord:					**☐162** **☐163** **☐164** **☐165**

		Stem GLAD nie saam nie	Stem GEDEELTELIK nie	Stem MEESTAL	Stem HEELTEMAL SAAM	
29.	**Jy en/ of ander studente misbruik die 2de eksamen geleentheid om 'n eksamen skedule uit te werk volgens jou behoeftes.**	1	2	3	4	**☐166**
30.	**Eksamens assesser nie noodwendig jou kennis en vaardighede nie maar eerder jou vermoë om onder tydsbeperkings druk te werk**	1	2	3	4	**☐167**
31.	**Jy voel dat die punte wat jy behaal vir die meeste van jou modules nie reflekterend is van die insette en tyd wat jy spandeer het om die inhoud van die module te bemeester nie.**	1	2	3	4	**☐168**
31.1	Motiveer asseblief jou antwoord:					**☐169** **☐170** **☐171** **☐172**

		Stem GLAD nie saam nie	Stem GEDEELTELIK nie	Stem MEESTAL	Stem HEELTEMAL SAAM	
32.	**Jy voel altyd gespanne voor formele toetse en eksamens, want jy is onseker van wat die dosente van jou verwag.**					**☐173**
33.	**Die druk wat jy ervaar gedurende assesseringsweke en eksamens het 'n groot negatiewe impak op jou lewe..**					**☐174**
33.1	Motiveer asseblief jou antwoord:					**☐175** **☐176** **☐177** **☐178**
34.	**Jy voel dat toetse en eksamens net jou vermoë om te memoriseer evalueer.**					**☐176**
35.	**Jy voel dat toetse en eksamens jou vermoë toets, om kennis wat jy geleer het toe te pas op ware lewensgetroue situasies**					**☐177**
36.	**Die meeste van jou dosente verskaf aan jou hulp en ondersteuning in gevalle waar jy nie goed presteer in assesserings nie.**					**☐178**
36.1	**Indien dit die geval is, noem asseblief die module kode(s) waaraan jy die meeste tyd spandeer maar die slegste presteer.**					**☐179** **☐180** **☐181** **☐182**

37.	**Gee kortliks jou opinie / moontlike redes vir jou slegte prestasies in die bogenoemde module(s).**	**☐183** **☐184** **☐185** **☐186**

Thank you for your participation. Your time and input is greatly appreciated. The results of this study will be made available to the School of Pharmacy, and will possibly contribute greatly to the enhancement of assessment practices.

APPENDIX B1

LETTER TO THE DEAN OF THE FACULTY OF HEALTH SCIENCES AT THE NORTH WEST UNIVERSITY TO REQUEST PERMISSION TO EXECUTE THE STUDY

Prof A Kotze
Dean of Faculty of Health Sciences
North-West University

APPLICATION FOR PERMISSION TO CONDUCT RESEARCH ON THE OPINIONS REGARDING ASSESSMENT OF UNDERGRADUATE STUDENTS AT THE NWU SCHOOL OF PHARMACY

I am in the process of writing a mini-dissertation to obtain the Magister in Health Professions Education in the Faculty of Health Sciences at the University of the Free State (Student number 2013190901). The title of my study is: **THE OPINIONS OF FINAL YEAR UNDERGRADUATE PHARMACY STUDENTS AT THE NORTH-WEST UNIVERSITY REGARDING ASSESSMENT**

My study leader is:

Dr SB Swart
Division Health Science Education
Faculty of Health Sciences, UFS
Bloemfontein, SOUTH AFRICA

The aim of the study is to determine how undergraduate fourth year Pharmacy students experience assessment practices at the NWU School of Pharmacy.

To achieve the aim, the following objectives will be pursued:

1. Conceptualising and contextualising academic assessment by means of a literature study with the purpose of compiling a theoretical framework for the study. This objective addresses research question 1.
2. To determine students' views about assessment by means of a questionnaire survey. This objective addresses research question 2.
3. To determine how students experience the different assessment types, methods and tools used in fourth year modules at the NWU School of Pharmacy. This objective addresses research question 3.
4. To determine if the purpose of different assessment types, methods and tools are clear to the students. This objective addresses research question 4.
5. To determine according to the students', whether the assessment practices are reflective of their experience in the classroom. This objective addresses research question 5.
6. To determine if the various assessment practices have an effect on student learning ability and learning methods. This objective addresses research question 6.
7. To determine how they experience feedback from lecturers after assessments. This objective addresses research question 7.

My target population are fourth year undergraduate students of the School of Pharmacy in the Faculty of Health Sciences at the NWU.

A literature review will be done. This literature review will ensure that the researcher will have the necessary knowledge to conduct the research in order to answer the research questions. The existing questionnaire will be delivered to all students in the fourth year of study taking into consideration the availability in their time table. The questionnaire will be available in both Afrikaans and English as these are the languages used in the School of Pharmacy at the NWU. The questionnaire is quantitative and will be investigated accordingly.

I hereby apply to conduct research as approved by the Ethics Committee (Faculty of Health Sciences at the UFS and NWU) on 4th year Pharmacy Students' opinions with regards to assessment at the

NWU School of Pharmacy. Authorization is a prerequisite to request that the students to take part in the study.

Yours faithfully

Mrs CS Mostert
Lecturer
Department of Clinical Pharmacy, School of Pharmacy
North-West University, Potchefstroom Campus
Tel: 0832754525/ 0182992231

Please feel free to contact the University of the Free State Health Sciences Research Ethics Committee (HSREC) for any ethical questions relating to this study:
Mrs. Maré Marais
Head: Health Sciences Research Ethics Committee Administration
Faculty / Fakulteit: Health Sciences / Gesondheidswetenskappe
PO Box / Posbus 339, Bloemfontein 9300, Republic of South Africa / Republiek van Suid-Afrika
051 4017795
MaraisMGE@ufs.ac.za

APPENDIX B2

LETTER TO DIRECTOR OF THE SCHOOL OF PHARMACY AT THE FACULTY OF HEALTH SCIENCES, NORT-WEST UNIVERSITY TO REQUEST PERMISSION TO EXECUTE THE STUDY

Prof S van Dyk
Director: School of Pharmacy
Faculty of Health Sciences
North-West University

APPLICATION FOR PERMISSION TO CONDUCT RESEARCH ON THE OPINIONS REGARDING ASSESSMENT OF UNDERGRADUATE STUDENTS AT THE NWU SCHOOL OF PHARMACY

I am in the process of writing a mini-dissertation to obtain the Magister in Health Professions Education in the Faculty of Health Sciences at the University of the Free State (Student number 2013190901). The title of my study is: **THE OPINIONS OF FINAL YEAR UNDERGRADUATE PHARMACY STUDENTS AT THE NORTH-WEST UNIVERSITY REGARDING ASSESSMENT**

My study leader is:
Dr SB Swart
Division Health Science Education
Faculty of Health Sciences, UFS
Bloemfontein, SOUTH AFRICA.

The aim of the study is to determine how undergraduate fourth year Pharmacy students experience assessment practices at the NWU School of Pharmacy.

To achieve the aim, the following objectives will be pursued:

1. Conceptualising and contextualising academic assessment by means of a literature study with the purpose of compiling a theoretical framework for the study. This objective addresses research question 1.
2. To determine students' views about assessment by means of a questionnaire survey. This objective addresses research question 2.
3. To determine how students experience the different assessment types, methods and tools used in fourth year modules at the NWU School of Pharmacy. This objective addresses research question 3.
4. To determine if the purpose of different assessment types, methods and tools are clear to the students. This objective addresses research question 4.
5. To determine according to the students', whether the assessment practices are reflective of their experience in the classroom. This objective addresses research question 5.
6. To determine if the various assessment practices have an effect on student learning ability and learning methods. This objective addresses research question 6.
7. To determine how they experience feedback from lecturers after assessments. This objective addresses research question 7.

My target population are fourth year undergraduate students of the School of Pharmacy in the Faculty of Health Sciences at the NWU.

A literature review will be done. This literature review will ensure that the researcher will have the necessary knowledge to conduct the research in order to answer the research questions.

The existing questionnaire will be delivered to all students in the fourth year of study taking into consideration the availability in their time table. The questionnaire will be available in both Afrikaans and English as these are the languages used in the School of Pharmacy at the NWU. The questionnaire is quantitative and will be investigated accordingly.

I hereby apply to conduct research as approved by the Ethics Committee (Faculty of Health Sciences at the UFS and NWU) on 4th year pharmacy students' experiences of assessment at the NWU School of Pharmacy. Authorization is a prerequisite to request that the students to take part in the study.

Yours faithfully
Mrs CS Mostert
Lecturer
Department of Clinical Pharmacy, School of Pharmacy
North-West University, Potchefstroom Campus
Tel: 0832754525/ 0182992231

Please feel free to contact the University of the Free State Health Sciences Research Ethics Committee (HSREC) for any ethical questions relating to this study:
Mrs. Maré Marais
Head: Health Sciences Research Ethics Committee Administration
Faculty / Fakulteit: Health Sciences / Gesondheidswetenskappe
PO Box / Posbus 339, Bloemfontein 9300, Republic of South Africa / Republiek van Suid-Afrika
051 4017795
MaraisMGE@ufs.ac.za

APPENDIX B3

LETTER TO THE VICE RECTOR: TEACHING AND LEARNING AT THE NORTH-WEST UNIVERSITY TO REQUEST PERMISSION TO EXECUTE THE STUDY

Prof RS (Rantoa) Letšosa
Vice Rector: Teaching-Learning
North-West University

APPLICATION FOR PERMISSION TO CONDUCT RESEARCH ON THE OPINIONS REGARDING ASSESSMENT OF UNDERGRADUATE STUDENTS AT THE NWU SCHOOL OF PHARMACY

I am in the process of writing a mini-dissertation to obtain the Magister in Health Professions Education in the Faculty of Health Sciences at the University of the Free State (Student number 2013190901). The title of my study is: **THE OPINIONS OF FINAL YEAR UNDERGRADUATE PHARMACY STUDENTS AT THE NORTH-WEST UNIVERSITY REGARDING ASSESSMENT**

My study leader is:
Dr SB Swart
Division Health Science Education, Faculty of Health Sciences,
UFS, Bloemfontein, SOUTH AFRICA.

The aim of the study is to determine how undergraduate fourth year Pharmacy students experience assessment practices at the NWU School of Pharmacy.

To achieve the aim, the following objectives will be pursued:

1. Conceptualising and contextualising academic assessment by means of a literature study with the purpose of compiling a theoretical framework for the study. This objective addresses research question 1.
2. To determine students' views about assessment by means of a questionnaire survey. This objective addresses research question 2.
3. To determine how students experience the different assessment types, methods and tools used in fourth year modules at the NWU School of Pharmacy. This objective addresses research question 3.
4. To determine if the purpose of different assessment types, methods and tools are clear to the students. This objective addresses research question 4.
5. To determine according to the students', whether the assessment practices are reflective of their experience in the classroom. This objective addresses research question 5.
6. To determine if the various assessment practices have an effect on student learning ability and learning methods. This objective addresses research question 6.
7. To determine how they experience feedback from lecturers after assessments. This objective addresses research question 7.

My target population are fourth year undergraduate students of the School of Pharmacy in the Faculty of Health Sciences at the NWU.

A literature review will be done. This literature review will ensure that the researcher will have the necessary knowledge to conduct the research in order to answer the research questions.

The existing questionnaire will be delivered to all students in the fourth year of study taking into consideration the availability in their time table. The questionnaire will be available in both Afrikaans and English as these are the languages used in the School of Pharmacy at the NWU. The questionnaire is quantitative and will be investigated accordingly.

I hereby apply to conduct research as approved by the Ethics Committee (Faculty of Health Sciences at the UFS and NWU) on 4th year pharmacy students' opinions of assessment at the NWU School of Pharmacy. Authorization is a prerequisite to request that the students to take part in the study.

Yours faithfully

Mrs CS Mostert
Lecturer, Department of Clinical Pharmacy, School of Pharmacy
North-West University, Potchefstroom Campus
Tel: 0832754525/ 0182992231

Please feel free to contact the University of the Free State Health Sciences Research Ethics Committee (HSREC) for any ethical questions relating to this study:
Mrs. Maré Marais
Head: Health Sciences Research Ethics Committee Administration
Faculty / Fakulteit: Health Sciences / Gesondheidswetenskappe
PO Box / Posbus 339, Bloemfontein 9300, Republic of South Africa / Republiek van Suid-Afrika
051 4017795
MaraisMGE@ufs.ac.za

APPENDIX B4

LETTER TO THE DEAN: STUDENT AFFAIRS AT THE NORTH-WEST UNIVERSITY TO REQUEST PERMISSION TO EXECUTE THE STUDY

Prof R Fick
Dean: Student Affairs
North-West University
Potchefstroom Campus

APPLICATION FOR PERMISSION TO CONDUCT RESEARCH ON THE OPINIONS REGARDING ASSESSMENT OF UNDERGRADUATE STUDENTS AT THE NWU SCHOOL OF PHARMACY.

I am in the process of writing a dissertation to obtain the Magister in Health Professions Education in the Faculty of Health Sciences at the University of the Free State (Student number 2013190901). The title of my study is: **THE OPINIONS OF FINAL YEAR UNDERGRADUATE PHARMACY STUDENTS AT THE NORTH-WEST UNIVERSITY REGARDING ASSESSMENT**

My study leader is:
Dr SB Swart
Division Health Science Education, Faculty of Health Sciences,
UFS, Bloemfontein, SOUTH AFRICA.

The aim of the study is to determine how undergraduate fourth year Pharmacy students experience assessment practices at the NWU School of Pharmacy.

To achieve the aim, the following objectives will be pursued:

8. Conceptualising and contextualising academic assessment by means of a literature study with the purpose of compiling a theoretical framework for the study. This objective addresses research question 1.
9. To determine students' views about assessment by means of a questionnaire survey. This objective addresses research question 2.
10. To determine how students experience the different assessment types, methods and tools used in fourth year modules at the NWU School of Pharmacy. This objective addresses research question 3.
11. To determine if the purpose of different assessment types, methods and tools are clear to the students. This objective addresses research question 4.
12. To determine according to the students', whether the assessment practices are reflective of their experience in the classroom. This objective addresses research question 5.
13. To determine if the various assessment practices have an effect on student learning ability and learning methods. This objective addresses research question 6.
14. To determine how they experience feedback from lecturers after assessments. This objective addresses research question 7.

My target population are fourth year undergraduate students of the School of Pharmacy in the Faculty of Health Sciences at the NWU.

A literature review will be done. This literature review will ensure that the researcher will have the necessary knowledge to conduct the research in order to answer the research questions.

The existing questionnaire will be delivered to all students in the fourth year of study taking into consideration the availability in their time table. The questionnaire will be available in both Afrikaans and English as these are the languages used in the School of Pharmacy at the NWU. The questionnaire is quantitative and will be investigated accordingly.

I hereby apply to conduct research as approved by the Ethics Committee (Faculty of Health Sciences at the UFS and NWU) on 4th year pharmacy students' opinions of assessment at the NWU School of Pharmacy. Authorization is a prerequisite to request that the students to take part in the study.

Yours faithfully

Mrs CS Mostert
Lecturer, Department of Clinical Pharmacy, School of Pharmacy
North-West University, Potchefstroom Campus
Tel: 0832754525/ 0182992231

Please feel free to contact the University of the Free State Health Sciences Research Ethics Committee (HSREC) for any ethical questions relating to this study:

Mrs. Maré Marais
Head: Health Sciences Research Ethics Committee Administration
Faculty / Fakulteit: Health Sciences / Gesondheidswetenskappe
PO Box / Posbus 339, Bloemfontein 9300, Republic of South Africa / Republiek van Suid-Afrika
051 4017795
MaraisMGE@ufs.ac.za

APPENDIX C

ETHICS COMMITTEE APPROVAL LETTER (UFS)

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

UFS·UV
HEALTH SCIENCES
GESONDHEIDSWETENSKAPPE

IRB nr 00006240
REC Reference nr 230408-011
IORG0005187
FWA00012784

16 March 2016

MS CORNELIA MOSTERT
DIVISION HEALTH SCIENCES EDUCATION
FACULTY OF HEALTH SCIENCES
UFS
Send per email: sonetswart31@gmail.com

Dear Ms Cornelia Mostert

HSREC NR 47/2016
MS CORNELIA MOSTERT
DIVISION HEALTH SCIENCES EDUCATION
PROJECT TITLE: THE EXPERIENCES OF FINAL YEAR UNDERGRADUATE PHARMACY STUDENTS AT THE NORTH-WEST UNIVERSITY REGARDING ASSESSMENT.

1. You are hereby kindly informed that the Health Sciences Research Ethics Committee (HSREC) reviewed the above research project and it was presented at the meeting on 15 March 2016. Research may not be conducted before the following condition(s) has/have been met and the HSREC grants final approval for the project:

   - *The signed permission letters from the NWU Dean of Faculty of Health Sciences and Student affairs must be submitted before final approval will be granted.*
   - *The current title refers to qualitative research. Please change the title to 'The **opinions** of final year undergraduate pharmacy students at the North-West University regarding assessment.'*

   *Upon receipt of the above document(s), the HSREC will issue a final approval letter. Only thereafter may the study be conducted.

3. The Committee must be informed of any serious adverse event and/or termination of the study.

4. Any amendment, extension or other modifications to the protocol must be submitted to the HSREC for approval.

5. Kindly use the **HSREC NR** as reference in correspondence to HSREC Administration.

6. Thus, this letter only serves as **conditional** approval.

7. The HSREC functions in compliance with, but not limited to, the following documents and guidelines: The SA National Health Act. No. 61 of 2003; Ethics in Health Research: Principles, Structures and Processes (2015); SA GCP(2006); Declaration of Helsinki; The Belmont Report; The US Office of Human Research Protections 45 CFR 461 (for non-exempt research with human participants conducted or supported by the US Department of Health and Human Services-(HHS), 21 CFR 50, 21 CFR 56; CIOMS; ICH-GCP-E6 Sections 1-4; The International Conference on Harmonization and Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH Tripartite), Guidelines of the SA Medicines Control Council as well as Laws and Regulations with regard to the Control of Medicines, Constitution of the Ethics Committee of the Faculty of Health Sciences.

Yours faithfully

.....
DR SM LE GRANGE
CHAIR: HEALTH SCIENCES RESEARCH ETHICS COMMITTEE

Health Sciences Research Ethics Committee
Office of the Dean: Health Sciences
T: +27 (0)51 401 7795/7794 | F: +27 (0)51 444 4359 | E: ethicsfhs@ufs.ac.za
Block D, Dean's Division, Room D104 | P.O. Box/Posbus 339 (Internal Post Box G40) | Bloemfontein 9300 | South Africa
www.ufs.ac.za

APPENDIX D

ETHICS COMMITTEE APPROVAL LETTER (NWU)

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

Private Bag X6001, Potchefstroom
South Africa 2520

Tel: 018 299-1111/2222
Web: http://www.nwu.ac.za

Faculty of Health Sciences
Health Sciences Ethics Office for Research, Training and Support
Health Research Ethics Committee (HREC)

Tel: 018-285 2291
Email: Wayne.Towers@nwu.ac.za

30 June 2016

Dr SB Swart
Health Professions Education
UFS

Dear Dr Swart

APPROVAL OF YOUR APPLICATION BY THE HEALTH RESEARCH ETHICS COMMITTEE (HREC) OF THE FACULTY OF HEALTH SCIENCES

Ethics number: NWU-00044-16-S1

Kindly use the ethics reference number provided above in all correspondence or documents submitted to the Health Research Ethics Committee (HREC) secretariat.

Study title: The opinions of final year undergraduate Pharmacy students at the North-West University regarding assessment

Study leader/supervisor: Dr SB Swart

Student: CS Mostert

Application type: Single study

Risk level: Minimal

You are kindly informed that your application was reviewed at the meeting held on 11/05/2016 of the HREC, Faculty of Health Sciences, and was approved on 30/06/2016.

The commencement date for this study is 30/06/2016 dependent on fulfilling the conditions indicated below. Continuation of the study is dependent on receipt of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation up to a maximum period of three years when extension will be facilitated during the monitoring process.

After ethical review:

Translation of the informed consent document to the languages applicable to the study participants should be submitted to the HREC, Faculty of Health Sciences (if applicable).

The HREC, Faculty of Health Sciences requires immediate reporting of any aspects that warrants a change of ethical approval. Any amendments, extensions or other modifications to the proposal or other associated documentation must be submitted to the HREC, Faculty of Health Sciences prior to implementing these changes. Any adverse/unexpected/unforeseen events or incidents must be reported on either an adverse event report form or incident report form at Ethics-HRECIncident-SAE@nwu.ac.za.

A monitoring report should be submitted within one year of approval of this study (or as otherwise stipulated) and before the year has expired, to ensure timely renewal of the study. A final report must be provided at completion of the study or the HREC, Faculty of Health Sciences must be notified if the study is temporarily suspended or terminated. The monitoring report template is obtainable from the Faculty of Health Sciences Ethics Office for Research, Training and Support at Ethics-Monitoring@nwu.ac.za. Annually a number of studies may be randomly selected for an external audit.

Please note that the HREC, Faculty of Health Sciences has the prerogative and authority to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process.

Please note that for any research at governmental or private institutions, permission must still be obtained from relevant authorities and provided to the HREC, Faculty of Health Sciences. Ethics approval is required BEFORE approval can be obtained from these authorities.

The HREC, Faculty of Health Sciences complies with the South African National Health Act 61 (2003), the Regulations on Research with Human Participants (2014), the Ethics in Health Research: Principles, Structures and Processes (2015), the Belmont Report and the Declaration of Helsinki (2013).

We wish you the best as you conduct your research. If you have any questions or need further assistance, please contact the Faculty of Health Sciences Ethics Office for Research, Training and Support at Ethics-HRECApply@nwu.ac.za.

Yours sincerely

Dr Wayne Towers
HREC Chairperson

Prof Minrie Greeff
Ethics Office Head

Current details: (13210572) C:\Users\13210572\Documents\HREC\HREC - Applications\2016 Applications\Applications 04 - 11 May 2016\NWU-00044-16-S1 (SB Swart-CS Mostert)\NWU-00044-16-S1 (SB Swart-CS Mostert) - AL\NWU-00044-16-S1(SB Swart-CS Mostert)-AL.docm
30 June 2016

File reference: 9.1.5.3

APPENDIX E

CONFIRMATION LETTER: LANGUAGE EDITING

22 January 2018

Luna Bergh

55 Jim Fouché Avenue

Universitas, Bloemfontein

To whom it may concern

This is to certify that I language-edited Chapters 1-6 of Cornelia S. Mostert's dissertation, excluding references. She effected the changes herself. In this way, both linguistic excellence and the candidate's ownership of her text were ensured.

Sincerely

Luna Bergh

D Litt et Phil

Language and writing specialist

TURN-IT-IN REPORT

finaldraft

ORIGINALITY REPORT

9%	8%	1%	6%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

MATCH ALL SOURCES (ONLY SELECTED SOURCE PRINTED)

3%

★ Submitted to North West University

Student Paper

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	Off		