AN INVESTIGATION INTO THE CHARACTERISTICS OF THE ANATOMY AND EMBRYOLOGY MODULE (MEF153) THAT AFFECT FIRST-YEAR MEDICAL STUDENTS' ACADEMIC PERFORMANCE AT THE UNIVERSITY OF THE FREE STATE: A STUDENTS' PERSPECTIVE

By

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STUDY LEADER: DR J. BEZUIDENHOUT

DECLARATION

I hereby declare that the work submitted here, is the result of my own independent investigation. Where help was sought, it was acknowledged. I further declare that this work is submitted at this university/faculty towards a Master's Degree in Health Professions Education and that it has never been submitted to any other university/faculty for the purpose of obtaining a degree.

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DEDICATION

I dedicate this extended mini-dissertation to my colleagues in the Department of Basic Medical Sciences, School of Medicine, University of the Free State and lastly but not least to my family, my wife Celia and children Hardus, Emke and Vicky, who supported me despite difficult circumstances. Thank you very much!

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TABLE OF CONTENTS

CHAPTER 6: CONCLUSION, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS:

CHE:	Council for Higher Education
CPS:	Classroom Performance Management System
DoE:	Department of Education
FHS:	Faculty of Health Sciences
HE:	Higher Education
HEI:	Higher Education Institution
HEQC:	Higher Education Quality Committee
HEQF:	Higher Education Qualifications Framework
HPCSA:	Health Professions Council of South Africa
HPE:	Health Professions Education
HSRC:	Human Sciences Research Council
IMA:	Integrated Medical Assessment
LMS:	Learning Management System (Blackboard)
MBChB:	Bachelor of Medicine and Bachelor of Surgery (Programme for Professional Medicine)
MEF153:	Structure and Development of the Body (including Anatomy and Embryology Module
NDoH:	National Department of Health
SoM:	School of Medicine
UFS:	University of the Free State
UK:	United Kingdom

SUMMARY

Key terms: Academic Performance, Anatomy and Embryology, Student Perspectives, First-Year Medical Students, Academic Demands

The first two years of higher education is critical in creating a foundation for future academic success as this is the time with the highest gain in knowledge, namely the development of critical thinking and cognitive development (Reason, Terenzini & Domingo 2006:150). Experiences during this stage will influence future academic performance. In South Africa, as many as 33% of enrolled students do not proceed beyond the first year of study (CHE 2013:44).

Factors that influence academic performance of first-year students include individual, organisational, environmental and academic programme factors. These factors are often interconnected (James 2007:2; Krumrei-Mancuso, Newton, Kim & Wilcocs 2013:248-253; Reason *et al.* 2006:149,167; Yates 2012:46-49). The extent to which a specific factor will influence an individual student is affected by the individual's perspective and experience of such a factor.

The strengths and weaknesses of a curriculum - as perceived by students - will affect academic performance, among other factors (Henzi, Davis, Jasinevicius & Hendricson 2007:642-645).

Against this background, the problem that was addressed was the poor academic performance of students in module MEF153 (Structure and development of the body) in the first year of the Programme for Professional Medicine (MBChB), in the School of Medicine, Faculty of Health Sciences, University of the Free State.

The question that had arisen was: "*Which factors, within the curriculum of the first-year undergraduate medical programme module MEF153, influence the academic performance of students in this module?*"

An investigation was done by the researcher to identify factors contributing to the poor academic performance of students in the module MEF153. Therefore the aim of the study that was pursued was to investigate students' perspectives regarding the importance of the various factors affecting their academic performance in their first year of study in the module MEF153. Research was conducted with the goal of making recommendations for changes to the curriculum of module MEF153. This was deemed necessary to improve the academic performance of first-year medical students in the module, without the lowering of academic standards.

To answer the research question and in order to achieve the aim, the objectives pursued included conceptualising and contextualizing factors affecting students' academic performance through conducting a literature survey. The presence and relevance of these factors within module MEF153 were determined through the analysis of module MEF153. Emphasis was placed on the curriculum, module structure and layout, educational strategies and methods, study content, assessment methods and finally, the time available for this module. A questionnaire was composed from these factors. The students' perception of the importance of factors affecting academic performance in module MEF153 was then evaluated by means of the questionnaire and statistical analysis of data.

The research approach used was a descriptive survey with quantitative and qualitative methodologies. All students registered for the module MEF153, and present on the day of data collection were included. The prevalence and perceived importance of factors affecting academic performance was determined by means of voluntary participation in an anonymous and confidential self-administered questionnaire completed by numerous research participants. The questionnaire contained questions with reference to demographic- and personal information, curriculum and programme characteristics and educational information such as teaching and learning methods used in this module. Quantitative data on the perceived importance and effect of factors on academic performance were recorded with the aid of questions and a Likert scale. Qualitative data were gathered through open-ended questions in the questionnaire.

The results of the quantitative data were reported as frequencies and percentages or medians for each factor evaluated and discussed. The major findings from this study were that all factors, except “personal interracial relations”, investigated for their possible effect on academic performance, are perceived to have an effect of median = 5 or more on academic performance on a scale from 0 to 10 where 10 = most important. Except for nine factors, the majority of participants reported a positive effect on academic performance for factors investigated. The factors that reported a majority negative effect on academic performance included financial cost of studies; workload of the undergraduate medical programme; workload of module MEF153; load of independent study in module MEF153; difficulty of content in module MEF153; difficulty of language in resources used in module MEF153; number of assessment opportunities in module MEF153; volume of content assessed per assessment opportunity; and stress associated with assessment in module MEF153. The qualitative data presented and discussed here were classified in themes and categories for each question. It provided further insight and understanding of the quantitative results.

These results show that the undergraduate medical programme and module MEF153 manage most factors in such a way that it contributes positively to academic performance for the majority of participants in this study. It also identifies areas that negatively influence the academic performance of the majority of participants. Furthermore, it emphasises the diverse effect of each factor on academic performance among participants. This knowledge can be used to address problematic areas of the curriculum to improve academic performance. It can also be used to improve academic development and support activities to address shortcoming in skills among students.

OPSOMMING

Sleutelterme: Akademiese prestasie, Anatomie en Embriologie, Studente perspektief, Eerstejaar mediese studente, Akademiese vereistes

Die eerste twee jaar van hoër onderwys is van kritiese belang as fondasie vir toekomstige sukses, want dit verteenwoordig die tydperk met die grootste toename in kennis, naamlik die ontwikkeling van kritiese denke en kognitiewe vaardighede (Reason, Terenzini & Domingo 2006:150). Ervarings gedurende hierdie fase sal toekomstige akademiese prestasie beïnvloed. Drie-en-dertig persent van ingeskrewe studente in Suid-Afrika vorder nie verder as die eerste jaar van studie nie (CHE 2013:44).

Faktore wat die akademiese prestasie van eerstejaar studente beïnvloed sluit individuele, instansie-, omgewings- en akademiese programfaktore in. Hierdie faktore is dikwels onderling verwant (James 2007:2; Krumrei-Mancuso, Newton, Kim & Wilcocs 2013:248-253; Reason *et al.* 2006:149,167; Yates 2012:46-49). Die mate waartoe ‘n spesifieke faktor ‘n individu sal beïnvloed, word deur die individu se perspektief op, en ondervinding van die faktor beïnvloed.

Die sterk- en swak punte van ‘n kurrikulum – soos deur studente ervaar – sal onder andere studente se akademiese prestasie beïnvloed (Henzi, Davis, Jasinevicius & Hendricson 2007:642-645).

Met hierdie agtergrond in gedagte is die probleem rakende swak akademiese prestasie onder studente in die module MEF153 (Struktuur en ontwikkeling van die liggaam) in die eerste jaar van die Program vir Professionele Geneeskunde (MBChB) in die Skool vir Geneeskunde, Fakulteit Gesonheidswetenskappe, Universiteit van die Vrystaat ondersoek.

Die vraag wat na vore gekom het, was: *“Watter faktore in die kurrikulum van die eerste jaar voorgraadse mediese program module MEF153 beïnvloed die akademiese prestasie van studente in hierdie module?”*

Die navorser het ‘n ondersoek uitgevoer om faktore wat bydra tot die swak prestasie van studente in module MEF153 te identifiseer. Vervolgens was die doel van die studie om studente se perspektief op die belang van faktore wat hul akademiese prestasie in die module MEF153 in hul eerste jaar van studies beïnvloed, te ondersoek. Navorsing is uitgevoer met die doel om aanbevelings vir wysigings aan die kurrikulum van module MEF153 te maak. Hierdie wysigings was nodig om die akademiese prestasie van eerstejaar mediese studente in die module MEF153 te verbeter, sonder verlies van akademiese standaarde.

Die doelwitte wat ondersoek is met die doel om hierdie navorsingsvraag te beantwoord en die doel van die studie te bereik, het ingesluit die konseptualisering en kontekstualisering van faktore wat studente se akademiese prestasie beïnvloed d.m.v. ‘n literatuurstudie. Analise van module MEF153 is het die teenwoordigheid en relevansie van hierdie faktore in die module bepaal. Faktore wat beklemtoon was, is die kurrikulum, modulestruktuur en -uitleg, onderwysstrategieë en -metodes, vakinhoud, assesseringsmetodes en laastens beskikbare tyd vir hierdie module. Vanuit hierdie faktore is ‘n vraelys opgestel. Die studente se persepsie van die belang van faktore wat akademiese prestasie in die module MEF153 beïnvloed, is bepaal deur middel van die vraelys en statistiese ontleding van hierdie data.

Die navorsingsbenadering in die studie was ‘n beskrywende opname met kwantitatiewe- en kwalitatiewe metodiek. Alle geregistreerde studente in die module MEF153 wat teenwoordig was op die dag van data insameling, is in die studie ingesluit. Die teenwoordigheid en persepsie van belangrikheid van faktore wat akademiese prestasie beïnvloed is deur die vrywillige voltooiing van ‘n anonieme, vertroulike vraelys deur studente bepaal. Die vraelys sluit demografiese- en persoonlike inligting in, asook kurrikulum en programkenmerke en onderwyskundige faktore soos onderrig- en leermetodes wat in hierdie module gebruik word. Kwantitatiewe data oor die persepsiële belang en effek van faktore op akademiese prestasie is deur middel van vrae met ‘n Likert-skaal ingesamel. Kwalitatiewe data is deur middel van oop vrae in die vraelys ingesamel.

Die resultate van die kwantitatiewe data is met frekwensies en persentasies of mediane beskryf vir elke faktor wat geëvalueer en bespreek is. Die belangrikste bevindings van hierdie studie is dat alle faktore, met die uitsondering van "persoonlike interras verhoudings" wat bestudeer is vir hul moontlike effek op akademiese prestasie, ervaar word om 'n effek met 'n mediaan = 5 of meer op akademiese prestasie te hê op 'n skaal van 0 tot 10, met 10 = belangrikste effek. Behalwe vir nege faktore is bevind dat die meerderheid deelnemers 'n positiewe effek op akademiese prestasie ervaar het vir al die oorblywende faktore. Die faktore wat deur die meerderheid ervaar is om 'n negatiewe effek op akademiese prestasie te hê, sluit in finansiele koste van studies; werkslading in die voorgraadse mediese program, werkslading in module MEF153; hoeveelheid selfstandige studie in module MEF153; moeilikheidsgraad van die vakinhoud in module MEF153; moeilik verstaanbare taal van bronne in module MEF153; aantal assesseringsgeleenthede in module MEF153; volume vakinhoud per assesseringsgeleentheid; en die stres rakende assessering in module MEF153. Kwalitatiewe data is in temas en kategorieë geklassifiseer en beskryf vir elke vraag. Die kwalitatiewe bevindings het dieper insig en begrip aan kwantitatiewe resultate verleen.

Hierdie bevindings toon dat meeste van die faktore wat bestudeer is, op sodanige wyse bestuur word dat dit 'n positiewe effek op akademiese prestasie uitoefen vir die meerderheid deelnemers aan die studie - in die voorgraadse mediese program en module MEF153. Faktore wat 'n oorheersend negatiewe effek op akademiese prestasie uitoefen is ook geïdentifiseer. Die uiteenlopende effek van elke faktor op akademiese prestasie onder deelnemers is verder beklemtoon. Hierdie kennis kan gebruik word om tekortkominge in die kurrikulum aan te pas, met die doel om akademiese prestasie te bevorder. Dit kan ook gebruik word om aandag aan gebrekkige vaardighede van studente te verleen deur akademiese ontwikkeling- en ondersteuningsinisiatiewe te verbeter.

AN INVESTIGATION INTO THE CHARACTERISTICS OF THE ANATOMY AND EMBRYOLOGY MODULE (MEF153) THAT AFFECT FIRST-YEAR MEDICAL STUDENTS' ACADEMIC PERFORMANCE AT THE UNIVERSITY OF THE FREE STATE: A STUDENTS' PERSPECTIVE

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION AND BACKGROUND TO THE STUDY

The first two years of higher education is critical in creating a foundation for future academic success. Experiences during this stage will influence future academic success (Krumrei-Mancuso, Newton, Kim & Wilcocs 2013:261; Reason *et al*. 2006:150). In South Africa, 30% of enrolled students did not proceed beyond the first year of tertiary study in 2008 (HSRC 2008:5). This number increased to 33% for the first-year group of 2010 (CHE 2013:44).

Factors that influence academic performance of first-year students include individual, organisational, environmental, and academic programme factors. These factors are often interconnected (James 2007:2; Krumrei-Mancuso *et al*. 2013:248-253; Reason *et al.* 2006:149,167; Yates 2012:46-49). The extent to which a specific factor will influence an individual student is affected by the individual's perspective and experience of such a factor (Reason *et al.* 2006:153-154).

The aim of this first chapter is to orientate the reader to the study. It provides background to the research problem, followed by the problem statement – including the overall goal and objectives of the study. These are followed by a demarcation of the study, all of which highlight its significance and value. This is followed by a brief overview of the research design and methods of investigation. The chapter is completed by a layout of the subsequent chapters and conclusion.

In this study, an investigation was done by the researcher to identify factors contributing to the poor academic performance of students in module MEF153 Structure and Development of the Body (12 credits) (including Introduction to anatomy and embryology) of the undergraduate medical programme of the School of Medicine, Faculty of Health Sciences, University of the Free State. Research was conducted with the aim of making recommendations for changes to the curriculum of module MEF153, and considered necessary to improve the academic performance of first-year medical students in the module, without the lowering of academic standards. Recommendations from this study can also be used for the development and improvement of student support initiatives that address general and specific skills needed for academic success (Cho & Karp 2012:17-18; Lown, Davies, Cordingley, Bundy & Braidman 2009:75).

Module MEF153 is one of six modules that comprise phase I of the undergraduate medical programme. These six modules are presented within the first semester of the first academic year. Module MEF153 covers the initial stages of embryonic development (from gametogenesis to the end of week eight of gestation and the placenta) and an introduction to systemic gross anatomy of all anatomical systems. The content is studied over a period of 14 academic weeks of the first semester and organised into 18 themes. Each theme is studied over a period of five hours through structured lectures, practical demonstrations and tutorial discussions (UFS 2010:Online).

Academic records of the medical programme showed that the number of students that failed the module MEF153 between 2008 and 2010 is amongst the top three modules with the highest failure rate when compared with other modules presented in the first semester of the undergraduate medical programme (Du Toit 2011:Personal communication) (See Table 1.1).

Table 1.1: Number of students that failed modules in semester 1

MODULE	NUMBER OF STUDENTS THAT FAILED		
	2008	2009	2010
MEA113	4	0	0
MEB153	25	17	7
MEC153	6	7	1
MED153	18	10	**23**
MEE153	**46**	8	10
MEF153	23	**19**	7

This study can serve as a directive for higher education institutions to address factors affecting students' academic performance in the development and improvement of academic programmes and modules. It may especially be important in the development of modules for first-year students to create an effective academic foundation and positive perception of higher education for successful future studies. This study may also identify common factors among first-year students that can be developed through student academic development and support initiatives.

1.2 BACKGROUND TO THE RESEARCH PROBLEM

The South African graduation rate varied between 15% and 22% from 2001 to 2003 (HSRC 2008:5). As was pointed out, 30%+ of enrolled students in tertiary education institutions in South Africa do not proceed beyond the first academic year of study (CHE 2013:44; HSRC 2008:5). According to Reason *et al.* (2006:150), the first two years of higher education is critical for students as this is the time with the highest gain in knowledge, development of critical thinking, and cognitive development. This initial period of study creates the foundation for future academic success.

Reasons for the student loss include a lack of general and academic skills, poor career choice and dissatisfaction with the academic institution (Yorke & Longden 2008:5). Factors that contribute to the before-mentioned reasons for the loss of

first-year students can be organised into individual, organisational, environmental, policy, and programme/curriculum factors.

The study by Henzi, Davis, Jasinevicius and Hendricson (2007:636-639,642-645) concluded that the strengths and weaknesses of a curriculum - as perceived by students - will affect academic performance among other factors. This study further identified several aspects linked to the curriculum that negatively affect students' performance. These aspects include:

- Inefficient time management by the faculty (staff) that leads to time lost for studies;
- This inefficient time management has a demoralising effect on students, which has a further negative impact on performance;
- The choice of educational strategies and teaching methods used by lecturers also affect students' performance;
- Teachers with a perceived negative attitude towards teaching or subject content contribute negatively towards students' performance; and
- The perspective of the quality of evaluations/assessments also affects students' attitudes and learning processes.

James (2007:12) identified teaching methods, study content, and assessment as factors affecting a student's learning process. The same factors were also identified by other authors (Draffan & Rainger 2006:55; McMillan 2007:213-214,217; Nelson & Kift 2005:226-228). These form an integral part of a curriculum and can be manipulated by faculty to improve academic performance, without compromising the quality of education.

James (2007:2) furthermore attempted to identify general international trends regarding factors affecting a student's academic performance in higher education, but concluded that generalising can lead to incorrect conclusions. Pabst (2009:541) concluded that one cannot assume that academic experiences in one institution will apply to another due to the great variability in teaching, learning approaches, methods, time for modules, experience of students, and abilities of

lecturers. Twenge (2009:399) emphasised that factors affecting students' performance are different for specific generations. Moagi-Jama (2009:98-119) concluded that different student groups are affected by different factors with reference to the effect on students' academic performance. Students in the South African environment are unique in their diversity of background, culture, preparedness for higher education and abilities (Boughey 2004:1-3; James 2007:13; Smit 2012:369-371; Snowball & Boughey 2012:195). The student population of medical schools in South Africa is a gender, racial and socio-culturally diverse group with growing numbers of students receiving education in a third language (HSRC 2008:6; Kent & De Villiers 2007:906-907).

The students' perspective of factors affecting academic performance determines the degree of the effect of such factors to a large extent. Therefore, it is important to determine these factors (Reason *et al.* 2006:153-154).

The academic success of students can be greatly increased by identifying and responding to the factors responsible for poor academic performance (Krumrei-Mancuso *et al*. 2013:261; Reason *et al.* 2006:155). This can lead to the improvement of academic programmes (Lown *et al.* 2009:475). The academic programme can be adapted to limit the effect of factors contributing to poor academic performance (Yorke & Longden 2008:4-5). Furthermore it can lead to the development and improvement of student support (Cho & Karp 2012:17-18; Lown *et al.* 2009:475). Adaptations to the academic programme will include adaptations within each module, and adaptations that will influence each module, including module MEF153. Examples of changes within the module include choice of teaching method, volume and difficulty of content, resources, and assessment methods. The duration of the academic programme, language and assessment policies are examples of changes to the academic programme that will influence all modules.

1.3 PROBLEM STATEMENT AND RESEARCH QUESTIONS

The problem that was addressed in this research project is the poor academic performance of students in module MEF153 in the first year of the undergraduate medical programme (MBChB: Bachelor of Medicine and Bachelor of Surgery, Programme for Professional Medicine), at the University.

Moagi-Jama (2009:98-119) evaluated factors affecting students' academic performance in non-traditional medical undergraduates at the University. This study emphasises the role of individual factors in academic performance. The main factors affecting academic performance of non-traditional medical undergraduates at the University according to the author's studies, include: under-preparedness for tertiary education, financial problems, poor understanding of content, poor time management, poor test/examination preparation, poor motivation and personal problems.

The current study differs from that of Moagi-Jama (2009) in terms of the following aspects: the emphasis was on factors within the curriculum that influence academic performance; the entire student population that attend the module MEF153 was studied and results were reported for the student population as a whole; and only students in their first semester of studies (attending the module MEF153) were included in the study. If the trend of the past number of years continues, the preparedness of the first-year student population for higher education in the undergraduate medical programme will change with regard to generic and academic skills, such as language ability and critical thinking (James 2007:6; Nelson & Kift 2005:226; Smit 2012:369-371).

No other recent study identifying and analysing the factors affecting the academic performance of first-year students in undergraduate medical programmes could be traced as far as the curriculum is concerned. However, a number of articles were found on factors affecting academic performance of students in general and on strong and weak points within a curriculum. Some sections in the articles were informative and helpful and are acknowledged and referenced as such.

In conclusion, there seems to be no recent scientific assessment of factors within the curriculum that influence the academic performance of first-year medical students in undergraduate medical programmes in South Africa that could form the basis for adapting the curriculum to improve the academic performance of students.

In order to address the problem stated, the following research question was posed:

Which factors, within the curriculum of the first-year undergraduate medical programme module MEF153, influence the academic performance of students in this module?

This research study was carried out and completed based on this research question. The findings of the research will contribute to curriculum development and curriculum review, with the purpose of improving student academic performance.

1.4 OVERALL GOAL, AIM AND OBJECTIVES OF THE STUDY

1.4.1 Overall goal of the study

The overall goal of this study was to make recommendations to adapt the curriculum of module MEF153 and the development of appropriate student support initiatives with the purpose of improving students' academic performance by identifying and addressing the factors that influence student academic performance.

1.4.2 Aim of the study

The aim of the study was to investigate students' perspectives regarding the importance of factors affecting their academic performance in their first year of

studies in module MEF153 (anatomy and embryology) in the undergraduate medical programme.

1.4.3 Objectives of the study

To answer the research question and achieve the aim, the following objectives were pursued:

1. Conceptualising and contextualising factors affecting student's academic performance, including factors perceived by students as affecting academic performance through a **literature survey**. This included factors originating from the curriculum, module structure and layout, educational strategies and methods, study content, assessment methods, and time available for a single module. The presence and relevance of these factors within module MEF153 were determined through analysis of its organisation, structure, layout and components. The emphasis was on previously mentioned factors. (Literature survey)
2. Using the literature survey to identify a selection of factors/criteria present within the structure of module MEF153, including those affecting students' academic performance and those perceived by students to affect academic performance. A **questionnaire** was composed from these factors/criteria to determine the students' perspective of the relative importance of each factor affecting academic performance.
3. Evaluating the students' perception of the importance of factors affecting academic performance by means of the questionnaire and **statistical analysis of data**. Emphasis was on the students' perspective of the relative importance of various factors affecting academic performance.

The above-mentioned objectives comprehensively address the research question.

1.5 DEMARCATION OF THE FIELD AND SCOPE OF THE STUDY

This research study conforms to the field of Health Professions Education (HPE). Due to the application of the study in the field of undergraduate medical programmes, the study can be classified as being interdisciplinary.

The participants in the questionnaire survey in this study were students registered on the first of May 2011 for the module MEF153.

The combination of interest in the students' perspective of teaching and the personal goal of the researcher, to improve his teaching and lecturing skills, led to the formulation of this research study.

1.6 SIGNIFICANCE AND VALUE OF THE STUDY

The University of the Free State constantly strives to improve the academic standards of UFS programmes and the academic performance of students. Improvement is only possible with accurate and detailed knowledge of factors affecting academic performance. These factors vary between student populations and academic institutions. Since no recent studies exist describing the factors affecting undergraduate medical students in their first year of studies, results from this study will contribute to a significant improvement in the medical curriculum of the undergraduate medical programme.

The findings of the study may be applied (after consultation and approval) to the undergraduate medical curriculum of the University as well as medical curricula of other medical schools/faculties with similar challenges with regard to academic performance.

Academic performance of students is further improved by specific student development and support initiatives by specifically addressing factors responsible for poor academic performance. Research results from this study will identify the

factors responsible for poor academic performance, enabling the development of specific student development initiatives.

Results from this study can also be of value to other academic programmes with a similar student population and profile.

1.7 RESEARCH DESIGN OF THE STUDY AND METHODS OF INVESTIGATION

1.7.1 Design of the study

The research approach may be defined as a quantitative study enhanced by qualitative methodologies. This approach was used to allow for elaboration on factors included in the questionnaire and to identify factors excluded in the questionnaire.

The research design best suited for the quantitative component of the proposed study, is a descriptive survey. Surveys are especially effective to collect information, and describe and interpret current status. Data are analysed with statistical methods, and results are presented as generalised statistical values (Maree & Pietersen 2012a:155). The prevalence and perceived importance of factors affecting academic performance are determined by means of a self-administered questionnaire by research participants. The perceived effect and importance of each factor are determined for students in general and specifically for each participant.

The qualitative data are collected through open-ended questions in the questionnaire.

The design followed in this study is described in more detail in Chapter 3 (cf. 3.2.3)

1.7.2 Methods of investigation

The methods that were used and which formed the basis of this study consisted of a literature study and a questionnaire survey. The literature study focussed on the conceptualisation and contextualisation of factors affecting a student's academic performance that is present in the MEF153 curriculum.

This study was followed up with a questionnaire survey among first-year undergraduate medical students registered for module MEF153 to determine the prevalence and perceived importance of each factor for students in general and specifically for each participant. The questionnaire is mainly quantitative with some open-ended questions (cf. Chapter 4). The qualitative assessment of the effect/importance of each factor is expressed as a value on a Likert scale. The questionnaires were completed during a scheduled MEF153 contact session in May 2011. The data collected with the open-ended questions of the questionnaire provided additional information on the qualitative component and identified factors not included by the quantitative component (cf. Chapter 5).

The study population consisted of 152 registered students of whom 133 voluntarily participated in the study. An effort was made to include the entire study population in the study to ensure scientific correctness by eliminating possible sampling error. Data obtained from this study were analysed by a statistician from the department of Biostatistics at the University.

The results from the literature survey and questionnaire were used to identify the factors that influence academic performance as well as the perceived importance of each specific factor.

The detailed description of the population, data collection and techniques, data analysis and reporting, and ethical considerations are given in Chapter 3 (cf. 3.3). A schematic overview of the study is given in Figure 1.1.

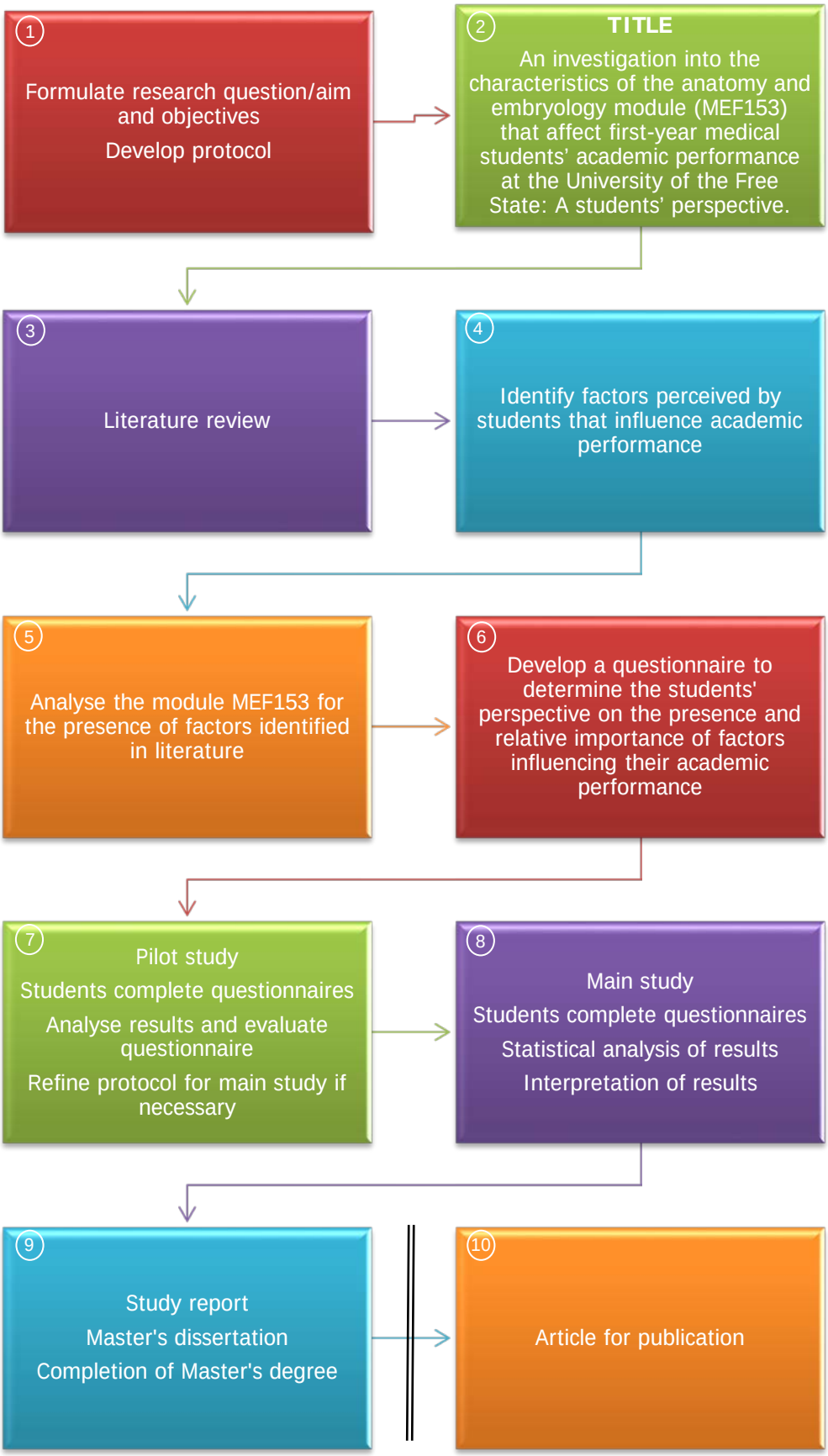

Figure 1.1: A schematic overview of the study

[Compiled by the Researcher, Van Zyl: 2011]

1.8 IMPLEMENTATION OF THE FINDINGS

This report containing the findings of the research, will be brought to the attention of the module leader of module MEF153, curriculum committee of the Faculty of Health Sciences, the Programme Director, Undergraduate Medical programme, and Faculty Management of the Faculty of Health Sciences of the University.

The findings of this research project will be used during curriculum review in the revision of module MEF153. Findings will also be communicated to units for student academic development and student academic support in the Faculty of Health Sciences. These units can utilise the findings in planning for student academic development and student academic support.

Students will be informed and advised about their perspectives of factors affecting academic performance. These information sessions will also address mechanisms to minimise the negative effects and utilise any positive effects of the studied factors. Students will be sensitised to areas that can influence academic support negatively.

The results will also be communicated to the personnel responsible for staff development. Results from this study will be used in the planning of training of new lecturers. The results of this study will also be sent to other faculties of the University. Other faculties may identify correlations between their student populations and the student population studied and apply proposals from this study.

A full-length article will be written after completion of the master's degree for publication in an accredited journal to enable the academic community to share in the results of this study. The research findings will also be presented at conferences. Results from this study will be analysed to identify additional research questions and plan further research in this field.

1.9 ARRANGEMENT OF THE REPORT

The report on the research findings and the final outcome are arranged as follows:

Chapter 1: ***Orientation to the study.*** In this chapter, the background to the study was provided. The problem statement, research question, goal, and objectives were stated. The research design and methodology were discussed briefly to give the reader an overview of what the report contains.

Chapter 2: ***Influences on the academic performance of first-year medical students in the Anatomy and Embryology module (MEF153).*** In this chapter, factors influencing student academic performance will be conceptualised and contextualised and further discussed within the context of first-year undergraduate medical students. The important contribution of students' perspectives regarding their personal academic performance will be explained. Curriculum composition will be discussed with the emphasis on characteristics that influence student academic performance. This chapter in the form of a literature study serves as the theoretical basis for the study.

Chapter 3: ***Research design and methodology***. Here, the research design and methods used in this study will be discussed in detail. The construction of the questionnaire, data collecting and data analysis will also be discussed.

Chapter 4: ***Results and discussion of findings of the quantitative section of the questionnaire survey*****.** This chapter will include the quantitative results of the questionnaire survey, as employed in this study and will be reported. The quantitative results will be discussed.

Chapter 5: ***Results and discussion of findings of the qualitative section of the questionnaire survey*****.** In this chapter, the qualitative results of the questionnaire survey, as employed in this study, will be reported. The qualitative results will be discussed.

Chapter 6: *Conclusion, recommendations and limitations of the study*. This chapter will include a summative conclusion on the study, and recommendations and limitations of the study will also be provided.

1.10 CONCLUSION

Chapter 1 provided the background and introduction to the research undertaken regarding the identification of factors within the curriculum that influence the academic performance of first-year undergraduate medical students in the anatomy and embryology module (MEF153). Findings from this research may influence curriculum review and student academic support initiatives.

The next chapter, Chapter 2, entitled *Influences on the academic performance of first-year medical students in the Anatomy and Embryology module (MEF153)* will include a review of the relevant literature, which will provide a theoretical background to the research problem. It will serve as the theoretical base for the development of the research methodology of this study and the development of the questionnaire components.

CHAPTER 2

INFLUENCES ON THE ACADEMIC PERFORMANCE OF FIRST-YEAR MEDICAL STUDENTS IN THE ANATOMY AND EMBRYOLOGY MODULE (MEF153)

2.1 INTRODUCTION

Students in their first-year of studies have the highest failure rate at South African universities. Thirty-three per cent of students enrolling for the first academic year do not proceed to the second year (CHE 2013:44). Over the past few years, students entering tertiary education have become more diverse than ever before, bringing with them characteristics and needs that were not experienced in higher education before (Nelson & Kift 2005:226; Smit 2012:369-371; Snowball & Boughey 2012:195). Furthermore, under-preparedness of students at entry level to universities has become more apparent in recent years (James 2007:6). Factors that influence the academic performance of first-year students are diverse and include individual, organisational, environmental, and academic programme factors (James 2007:2; Krumrei-Mancuso *et al*. 2013:248-253; Reason *et al.* 2006:149,167; Yates 2012:46-49). These factors are often interconnected. This study is focussed on characteristics of the academic programme that influence academic performance.

By identifying the factors that influence academic performance in the introductory anatomy and embryology module, the opportunity to improve academic performance arises. Factors that affect academic performance that is embedded in the institution and/or academic programme can be acted upon by the academic institution. Factors that already have a positive influence on academic performance can be further developed and applied in additional learning opportunities to further improve academic performance. Factors that negatively affect academic performance can be researched and altered to improve academic performance through changes in the academic programme and/or additional academic development and support programmes.

In Chapter 1, the background to this study was discussed. In this chapter, the theoretical perspectives underlying this study are explained. Firstly, a discussion of personal factors that affect a student's academic performance is presented. Secondly, the characteristics of the undergraduate medical programme that affect a student's academic performance, are discussed. Thirdly, an overview of the structure and composition of the undergraduate medical curriculum is provided. Detail on the structure and composition of the module MEF153 is provided with emphasis on components that affect academic performance. Penultimately, the influence of student academic development and support will be discussed. Lastly, the chapter is concluded by discussing the combined effect of all before-mentioned factors on the student's academic performance.

2.2 AN OVERVIEW OF THE DIFFERENT ASPECTS THAT WILL INFLUENCE ACADEMIC PERFORMANCE

This study focuses on factors embedded in the academic programme and curriculum that may influence academic performance. The extent to which these factors may influence the academic performance in module MEF153 was investigated. Factors within the academic programme and curriculum that influence academic performance are often linked to personal and individual problems. Therefore, the student as individual, and factors influencing the academic performance of the student on a personal level, need to be included in this study.

To ensure all relevant factors are included, this study investigated those factors affecting academic performance in module MEF153 within the following categories: characteristics of the student as individual; characteristics of the university as academic institution; characteristics of the undergraduate medical programme; and the possible contribution student academic development and support may have on academic performance. The role of student academic development and support is not discussed as a separate entity, but incorporated in the discussions of various characteristics where it may have an influence. The

following figure (Figure 2.1) provides an outline of the different aspects which will subsequently be described in this chapter.

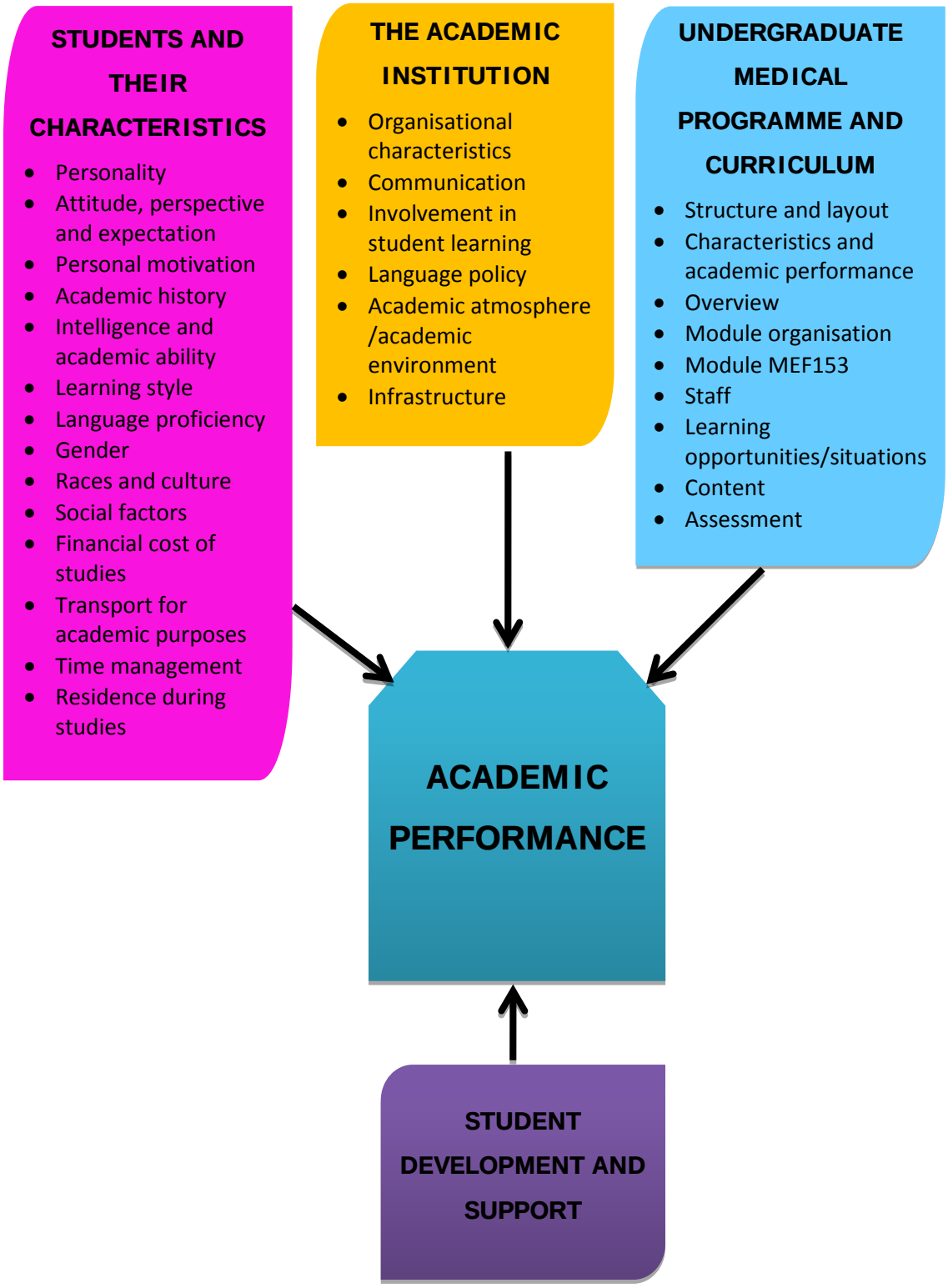

Figure 2.1: A diagrammatic overview of the different aspects that will influence academic performance

[Compiled by the Researcher, Van Zyl: 2012]

2.3 THEORETICAL PERSPECTIVES ON STUDENT CHARACTERISTICS AFFECTING ACADEMIC PERFORMANCE

The personal and academic profile of a student includes information on personality, attitude, perspective, expectations, motivation, academic history, intelligence, academic ability, learning preferences and learning style, language proficiency, gender, race and social identity. The combination of environment, social factors and cognitive ability will influence the student's ability to engage with the study material and will have an impact on academic performance (Ackerman, Kanfer & Beier 2013:911-913; Hutt 2013:13-17; Nelson & Kift 2005:227). The literature is inconsistent with regard to the influence of the before-mentioned factors on academic performance. Differences among students based on these factors had a limited effect on the academic success of students in their first-year of higher education in the United Kingdom (UK) (Yorke & Longden 2008:8). Other student characteristics that may also influence academic performance include financial cost of studies, transport, time management and place of residence during studies. These factors are often linked and/or have a combined effect. The influence of the personal and academic profile of students on their academic performance in module MEF153 was unknown, and was chosen to be part of this study.

2.3.1 Personality

In a study by Heindrich and Scheepers (2004:262), no statistically significant correlation was shown between personality type and academic success in first-year students in Public Relation Studies at the Vaal University of Technology. The correlation between preferred learning styles, teaching approaches, methods used, and the ability of the student to adapt to these teaching styles and methods can influence academic performance (cf. 2.3.6).

2.3.2 Attitude, perspective and expectation

A first-year student's attitude towards his/her studies has a significant influence on his/her academic success (Heindrich & Scheepers 2004:260,261), even students' attitude towards the language of instruction influence their ability to study the subject content (Van Rensburg & Lamberti 2004:72). Dissatisfaction with the academic institution may also negatively influence academic performance (Yorke & Longden 2008:5). Reason *et al.* (2006:164) report a student's perception, based on personal experiences, as the most powerful predictor of academic success during their first-year of study. The possibility exists that students may have established perceptions about the institution, programme or module, which may influence academic performance.

In the UK, students in their first-year of higher education indicated that deficient knowledge of the institution and programme was a major factor in considering withdrawing from the programme (Yorke & Longden 2008:7).

James (2007:1) indicates that student expectations of teaching and learning are changing. This conversion is mainly influenced by a changing social and technological environment. Higher education institutions need to recognize and respond to these transformative student expectations to ensure optimal teaching and learning. Misguided expectations by students with regard to their role in their studies, as well as the university's role, negatively influence their attitude toward their studies, which will in turn influence their academic performance (James 2007:4 Smit 2012:372-377).

Perceptions and attitudes of students toward the University's undergraduate medical programme and module MEF153 have not been studied before and are therefore included in this study.

Academic records of the University show that the module MEF153 has one of the highest failure rates among modules in the first semester of the undergraduate medical programme from 2008 to 2010 (Du Toit 2011:Personal communication).

These statistics are publicly available and one can assume that students are aware of this trend. It is unknown whether any pre-existing attitude or perspective or expectation is present among students in module MEF153. This study investigated any possible effect of attitude, perspective and expectations on academic performance with regard to the module MEF153 and undergraduate medical programme of the University.

2.3.3 Personal motivation

Motivation is primarily based in the students' interest in a topic. If students are not interested in an academic topic they are unmotivated to perform in that topic. They will adapt learning styles that require the least effort from them. These are often superficial learning techniques and do not generate an understanding or mastering of the content (Biggs & Tang 2007:31). Ackerman *et al*. (2013:917), Cheruvalath (2012:294) and Heindrich and Scheepers (2004:260,261) indicate a positive correlation between motivation and academic success in first-year students. Yorke and Longden (2008:7) found that older students were more motivated than younger students in their first-year of higher education in the UK. Biggs and Tang (2007:32) discovered that if students are forced to engage in their studies, it positively influences the student's motivation.

2.3.4 Academic history

Students with prior tertiary education experience tend to perform better in the undergraduate medical programme at the University of the Free State (Moagi-Jama 2009:101). In a study conducted by Yorke and Longden (2008:17), the majority of students with prior academic experience in higher education were more certain about their choice of programme and more committed than students without prior higher education experience. Students with prior academic experience are also more critical towards the quality of teaching (Yorke & Longden 2008:22).

Bernal and Aragon (2004:209) described the lack of skills to navigate the academic process among first-generation students. Also, students from the previously disadvantaged population groups often did not have the necessary skills for effective learning (Heindrich & Scheepers 2004:250).

The majority of students enrolled into the first-year of the undergraduate medical programme are selected from grade 11 learners of two years year ago. More mature students engaging into tertiary studies for the first time, students that previously studied other academic programmes, and students repeating their first-year of medical studies are also present as part of the class composition (HPCSA 2010:Online). The exact number of students in module MEF153 with prior tertiary academic experience was unknown and included as part of this study.

2.3.5 Intelligence and academic ability

Harvey, Drew and Smith (2006:41) determined a tendency among first-year students to overestimate their academic ability. Staff experienced a lack of academic preparedness among new first-year students, especially with regard to academic standard on entering tertiary studies and having basic skills needed for mastering tertiary studies. Such students will have difficulty coping with the demands of tertiary education programmes (James 2007:6-8). One way to address this problem is through support programmes which are not part of the formal curriculum. More ideally, this issue should be addressed within the main curriculum (James 2007:7). Yorke and Longden (2008:40) suggest that the institutional choice of teaching style should also emphasise and include academic study style development.

During the first two weeks of the undergraduate medical programme, the module MEA113 evaluates many of the basic skills needed to be successful in medical studies and is used to identify and respond to students with insufficient basic academic skills. The findings made in module MEA113, as well as all other modules in the undergraduate medical programme, are reported to the Division of Health Science Education. These results are responded to, through the actions of

Student Academic Development and Support. The contribution of the latter support programmes towards academic success was evaluated as part of this study.

2.3.6 Learning style

Writing, speaking, listening, thinking and the use of electronic devices contribute to the learning process. Students have a preference for one or another learning style, but learning is not always the most effective in their preferred learning style. Students continuously need to develop their study skills and adapt their learning style to best suit the content and the expected outcomes of study (Bandaranayake 2009:385). Not all students are equally effective learners, which will greatly affect their academic performance (Bandaranayake 2009:385; Gqweta 2012:214-215).

Good teaching and learning activities will promote learning by encouraging and promoting the desired learning style (Biggs & Tang 2007:15; Weisel 2012:288). Different modes of learning should be included in the curriculum to accommodate the preferences of different students (Glatthorn, Boschee & Whitehead 2006:357-366). Study aids and self-testing, as components of learning style, show a positive correlation with academic success in first-year Public Relation students at the Vaal University of Technology (Heindrich & Scheepers 2004:260,261).

A preferred learning style and different learning styles employed by students are not established in the undergraduate medical programme. Lecturers in module MEF153 are aware of the existing diversity of learning styles in a typical student group and employ different teaching strategies and methods in a range of learning opportunities including formal lectures, small group activities, tutorial sessions, demonstrations and computer based activities (UFS 2010:Online).

2.3.7 Language proficiency

Teaching is done through a particular language of instruction. In South Africa, most university classes will have students from different first languages. For

many, the language of instruction will be their second or third language. These students are often not proficient in the language of instruction. Students experience difficulty with the language of instruction, not only in understanding and speaking, but also in reading and writing. This can lead to difficulty in understanding and interpreting subject content. In most programmes, assessment is conducted mainly through written examinations and assignments. Poor language ability may lead to poorly written assessments and assignments (San Miguel, Townsend & Waters 2013:21). Students' attitudes towards the language of instruction may further influence their ability to master the subject content (Van Rensburg & Lamberti 2004:71-86).

Academic institutions and lecturers of the said instructions should be aware of the differences in language ability and respond pro-actively accordingly. This can be accomplished by creating learning opportunities and assessment methods that focus on aspects other than formal lectures, for example practical sessions. Academic development and support for students who are not proficient in the language of instruction should also assist these students in improving their language proficiency (Van Rensburg & Lamberti 2004:71-86).

Module MEF153 is offered in Afrikaans or English. For some students the language of instruction is often their second or third language (UFS 2010:Online).

2.3.8 Gender

Students may experience bias against them or towards others based on gender. Bias may exist between lecturers and students or between the students themselves. Bias may lead to discrimination or preferential treatment of students, which may influence their academic performance (Weinstein & Obear 1992:39-49).

Moagi-Jama (2009:100) and Dobson (2004:1221) determined that male students are more likely to fail or quit their studies, but did not determine any reasons for this observation.

In a study by Moagi-Jama (2009:99-104), most of the students who failed the undergraduate medical modules were black. This may be linked to several factors including language, poor prior education environment, academic skills, and other factors associated with first-generation students.

Selection for the undergraduate medical programme is primarily based on academic performance in grade 11 of secondary school. Academic instruction is presented in Afrikaans or English, and an attempt is made to select equal numbers of students in each group. Selection also occurs according to gender, with an equal number of male and female students selected, if a sufficient number of students are available, which adhere to all selection criteria (HPCSA 2010:Online). The study population that participated in this study consisted of 56% females and 44% males.

2.3.9 Races and culture

The racial, cultural and social diversity on university campuses worldwide increased over the past number of years (Nel, Kistner & van der Merwe 2013:90-91). The integration of diverse cultural and racial groups into a single multicultural campus community, while maintaining the integrity of the different groups, remains a challenge. Interracial interactions are not always ideal and influence campus life and academic performance (Hardiman & Jackson 1992:21-24). Hardiman and Jackson (1992:34-36) state that it is important that the university recognises and understands different racial and cultural groups. How these different groups interact will develop and change with time. The university can, and should, facilitate this process to create the best environment for academic and social functioning (Hardiman & Jackson 1992:21-24,34-36). The effects of racial and cultural diversity may affect teaching and learning in learning opportunities. The effect of bias towards or against a specific grouping may generate issues of conflict amongst students, or between students and lecturers (Weinstein & Obear 1992:40).

Selection into the undergraduate medical programme includes selection according to race, with predetermined numbers of students for each race. Selection according to race is dependent on fulfilment of other selection criteria, for example academic requirements (HPCSA 2010:Online). This study investigated the extent to which diversity exists in race and the possible effects of the diversity on academic performance.

2.3.10 Social factors

The social environment of a student includes relationships on a personal level, relationship and association with groups and, relationships with academic staff. These relationships will influence students' attitude and academic achievement (Glatthorn *et al*. 2006:25). Diverse socio-economic conditions exist among first-year students at the University. The main factors within the socio-economic environment that influence academic performance negatively include financial pressure, strained relationship with family members, limited self-knowledge, reluctance to talk to counsellors, and cultural issues (Strydom, Heyns & Grobler 1999:241). Support and a sense of belonging on a social level have increased academic success and motivation (Bernal & Aragon 2004:205,210; Hixenbaugh, Dewart & Towell 2012:295). Yorke and Longden (2008:4) suggest that institutional commitment to student learning can improve academic success for students in higher education in the UK.

No data is available with regard to the socio-economic characteristics of students currently in module MEF153. This study did not investigate the social characteristics or socio-economic diversity of the student population in module MEF153. Only the students' perspective of the effect of the social environment on academic performance was measured.

2.3.11 Financial cost of studies

Yorke and Longden (2008:2,7) found that financial problems are one of the major factors for ending studies during the first-year of higher education in the UK. Due

to the high cost of studies, students expect better quality of teaching. This "better value for their money" in students' attitude can lead to a more passive role in their studies, which may reflect negatively on their academic performance (James 2007:3). Working students have fewer hours available for their studies. Their working arrangement will influence their perspective on the timetable of the programme, volume of the programme content and expected engagement with the study material (James 2007:4-6). A lack of financial resources have been shown to affect a student severely, including family relationships and motivation and the chances of academic success are influenced negatively due to the factors mentioned before (Jones-White, Radcliffe, Lorenz & Soria 2013:Online; Strydom *et al*. 1999:239).

The increasing cost of medical training influences not only the student, but also the lecturers and the infrastructure and technology that can be developed and maintained (Dent & Harden 2009:5).

Financial constraints of students affect their studies in all modules of the undergraduate medical programme. This study evaluated the perceived effect of financial stress on academic performance as experienced by students in module MEF153, amongst other factors.

2.3.12 Transport for academic purposes

The existing public transport system in Bloemfontein creates problems with regard to coordination between the transport schedules and class schedules, and can negatively affect class attendance (Strydom *et al.* 1999:239). Poor class attendance does affect academic success negatively due to the decreased contact sessions available for teaching. Poor class attendance can also create a situation where a student does not comply with the regulations with regard to satisfactory class attendance.

All contact sessions for the module MEF153 is on the main campus of the University. Some sessions are presented during the morning and some during the

afternoon. All sessions are presented between 08h00 and 17h00 (UFS 2010:Online).

2.3.13 Time management

According to Heindrich and Scheepers (2004:260) no statistically significant correlation was found between time management and academic success in first-year Public Relation students at the Vaal University of Technology.

Six modules are presented during the first semester of the undergraduate medical programme. Module MEA113 is presented during the first two weeks of the semester. The remaining five modules, which include the module MEF153, are presented concurrently during the remainder of the first semester. Each module is presented on a separate day of the week, according to a fixed timetable (UFS 2010:Online). Students are responsible for managing their own time to ensure that they cope with the demands of study and social life.

2.3.14 Residence during studies

Yorke and Longden (2008:20) identified differences in the advantages and disadvantages for different types of accommodation. Students living at home had better family support and less financial stress due to the cost of residence, but experienced more stress associated with their studies. Students in private accommodation were more often dissatisfied with their academic progress (Yorke & Longden 2008:20). Medical students in the UK that lived off campus had a 40% higher dropout rate than students that lived on campus (Dobson 2004:1221).

The students' residence during studies and the possible effect it may have on their academic performance in the undergraduate medical programme was also investigated in this study.

2.4 THEORETICAL PERSPECTIVES OF THE UNIVERSITY AS ACADEMIC INSTITUTION AFFECTING ACADEMIC PERFORMANCE

2.4.1 Organisational characteristics and communication

Bernal and Aragon (2004:209) indicated that a lack of knowledge of existing regulations and codes of conduct could negatively influence students' academic performance. These students often acted outside the regulations of the University. The negative response of the academic institution towards these students could create stress and even cause students to disrupt their studies. Examples of this include a misunderstanding of the billing system, expectations with regard to class attendance and the assessment system. A lack of understanding of the institutional requirements of the programme was also a major factor considered for withdrawing from a programme among first-year students in the UK (Yorke & Longden 2008:7). Poor career choice was amongst the major factors for terminating studies (Yorke & Longden 2008:2). Harden (2009a:14) and Glatthorn *et al.* (2006:26) emphasised the importance of effective communication within the institution and between the institution and students to prevent failure of students and/or the academic programme. Communication can be improved by documentation of all aspects of the curriculum (Harden 2009a:14).

Communication in the undergraduate medical programme is accomplished by various modes. Rules, regulations, codes of conduct, information with regard to academic and administrative procedures, and guidelines for ethical and professional conduct are communicated through printed and electronic media, as well as verbal information sessions. Printed media include yearbooks, phase guides, workbooks and notices. Electronic media include compact discs (cd's) handed to the students containing information on regulations and modules and the Blackboard LMS (learning management system), which is actively incorporated into the teaching and learning activities. Announcements are posted and updated on Blackboard LMS as an official communication channel. Lecturers in the medical programme also have scheduled consultation times for students.

2.4.2 Institutional involvement in student learning

Students are exposed to stressors such as ineffective time management, work overload, financial stress, dysfunctional social interactions, and examination stress. Stressors usually manifest as personal or academic problems. Not all students are able to handle these stressors on their own. Student support initiatives, driven by the university, can and do assist students in managing their stressors. Support initiatives can be divided in proactive developmental initiatives and support initiatives once a problem arises (Barnett, Bork, Mayer, Pretlow, Wathington, & Weiss. 2012:45-49; Dent & Rennie 2009:378-379).

Yorke and Longden (2008:2) found a lack of contact between students and academic staff to be one of the major factors for ending studies during the first-year of higher education in the UK. They also suggest that institutional commitment to student learning can improve academic success for students in higher education in the UK (Yorke & Longden 2008:4). Mentoring students provides support to the said students and creates the opportunity to link theory and practice (Evans 2012:6). Students in a career ladder programme in Colorado reported the tutor and mentor programme as essential for their academic success (Bernal & Aragon 2004:209-211). Student academic development and student academic support must be an integral component of the curriculum. It must be constructed in such a way that it supports the student's needs (James 2007:7; Nelson & Kift 2005:229). Peer mentoring programmes enhance communication and contact with peers (James 2007:8-9).

A unit for students' academic development and student academic support is functional within the Faculty of Health Sciences of the University. Student academic development forms an integral part of the undergraduate medical programme. Student academic support is available to all students in the Faculty of Health Sciences. There is effective communication between this unit of support and the academic modules in order to identify and address academic problems of the students. Results of all assessment opportunities are also monitored by this

unit as well as the Programme Director in order to identify students with academic problems. Academic support for students with study problems based on a specific module is addressed in cooperation with the lecturers in that specific module.

2.4.3 Language policy of the University

A study by Strydom *et al.* (1999:234) indicates poor English reading comprehension among students of the University. This negatively affects the student-facilitator communication (cf. 2.3.7).

No statistical data is available for the perceived effect of language of instruction on academic performance in module MEF153. This study aims to determine the effect of language of instruction, as well as the effect of language used in textbooks and workbooks on academic performance, amongst other factors focussed on.

2.4.4 Academic environment

Glatthorn *et al*. (2006:5) state that the learning environment is part of the curriculum and will influence learning. The same academic environment can be experienced differently by a variety of students. A student's perspective influences his/her experience of the academic environment. Academic environment is influenced by many diverse factors such as the teacher's skills, learning content, physical teaching environment, student support, assessment, personal abilities, and social life (McAleer, Soemantri & Roff 2009:64-65). A student's experience of the academic environment can influence the successful reaching of outcomes; if for example, a student experiences a competitive environment, it will limit the success of group activities (Harden 2009a:14-15). Yorke and Longden (2008:4) suggest that creating an academic environment in which the curriculum is presented can improve academic success for students in higher education in the UK. A similar view is shared by Kahu, Stephens, Leach and Zepke (2013:800) and McAleer *et al*. (2009:64-65). The rapid development in technology, the changing expectations of students, and developments in teaching

and learning creates the need for new and adaptable academic spaces (James 2007:9-11). Existing academic spaces are not always suited for the study methods in Anatomy and Embryology. Insufficient academic spaces will influence the experience of the student at or during a particular learning opportunity.

Lectures in module MEF153 are presented in large modern lecture rooms. The lecture rooms are fitted with a sound system, computer programmed with Windows 7, data projection, a clicker system (CPS or classroom performance system), and white boards. Tables and chairs can be rearranged to create optimal layout for large lectures or group sessions. A medical library, computer laboratory and study spaces are also available. Additional library, computer, and study facilities are also available on the campus and accessible to all students (UFS 2012:Online).

2.4.4.1 *Infrastructure*

Satisfaction with infrastructure, resources and information services varied among first-year students in the UK. Students who were dissatisfied with resources mainly had difficulty accessing the Internet at universities with a tendency to communicate information through the Internet (Yorke & Longden 2008:50). The limitations of infrastructure and technology are aggravated by the high cost of the said infrastructure and limited financial resources of medical schools (Dent & Harden 2009:5). Successful integration of technology into the curriculum may improve problem-solving skills, writing skills, independent study, teamwork, knowledge retention rate and higher-order thinking (Glatthorn *et al.* 2006:371-374).

The University is constantly developing and improving the technology available and employed in teaching and learning (cf. 2.4.4).

2.5 THEORETICAL PERSPECTIVES ON THE UNDERGRADUATE MEDICAL PROGRAMME AND CURRICULUM

An academic programme includes all aspects of a student's academic experience and consists of courses, modules, study resources, and teaching and learning methodology (Geyser 2004a:139). The curriculum is the overall plan of an academic programme (Leinster 2009:17). A curriculum includes everything that should happen in an academic programme. It includes the syllabus or content and the learning methods, assessment methods, resources and timetable (Harden 2009a:10; Leinster 2009:17). Parkay and Hass (2000:3) define a curriculum as follows: "The curriculum is all of the experiences that individual learners have in a programme of education whose purpose is to achieve broad goals and related specific objectives, which is planned in terms of a framework of theory and research or past and present professional practice". This creates an extended vision of a curriculum as presented by Harden (2009a:10). This extended vision of a curriculum is illustrated in Figure 2.2.

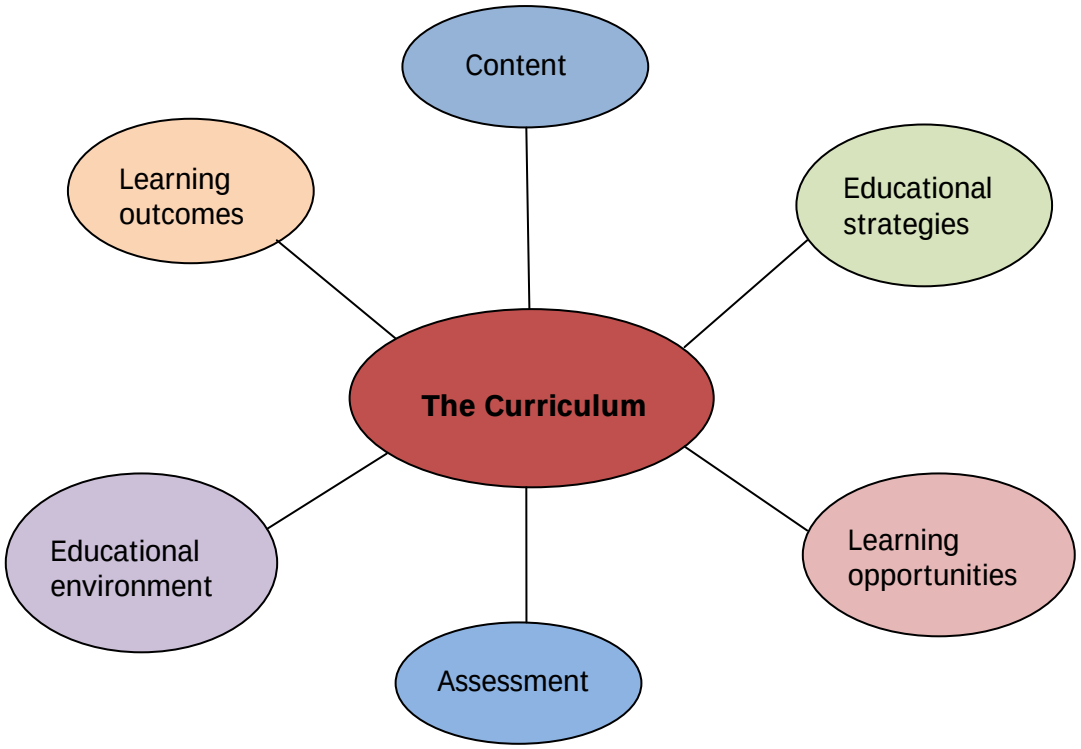

Figure 2.2: A diagrammatic representation of the wider vision of a curriculum [Taken from Harden 2009a:11]

2.5.1 Structure and layout of an undergraduate medical programme

Many aspects of the undergraduate medical programme are determined by the HPCSA (Health Professions Council of South Africa). The HPCSA provides guidelines toward study periods and requirements towards the outcomes and content (HPCSA 1999:Online). Not only is the curriculum required to comply with the requirements of the HPCSA, but also with those of the Higher Education Quality Committee (HEQC), and address the needs of health service providers and future patients (Cholerton & Jordan 2009:195).

2.5.2 Characteristics of an undergraduate medical programme and curriculum that affects academic performance

Yorke and Longden (2008:4) suggest that the selection of certain curricular structures can improve academic success of students in higher education in the UK. A curriculum should develop in such a manner as to ensure the retention of international standards by employing updated technology and methods. A balance between students' needs and expectations must be established within the available time and resources (James 2007:11-12). The diverse demographics and different levels of preparedness of students make the choice of curriculum design even more complex. A curriculum should aim to align curriculum content and planned learning opportunities with the student's needs (Nelson & Kift 2005:225-226).

Characteristics of a curriculum that enhance the academic experience and academic performances include clear organisation of content and outstanding implementation of the programme (Henzi *et al.* 2007:635,642-643). Harden (2009a:15) describes the importance of curriculum management to ensure planning and implementing of the curriculum, coordinated teaching, quality assurance and staff development. The curriculum should be developed and managed in such a manner so as to support student learning (Glatthorn *et al.* 2006:3).

Programmes that include clinical experience during the initial phases of the programme benefit the learning experience of preclinical, theoretical content. It creates an understanding of the importance and necessity of the preclinical content (Dornan & Smithson 2009:23-24; Henzi *et al.* 2007:635,642-643). Apart from traditional clinical training in academic hospitals, it can also be done in specially developed clinical training facilities (skills laboratories) and in community-based health care facilities (Dent & Harden 2009:7; Dornan & Smithson 2009:24-25).

A study conducted by Henzi *et al.* (2007:635) involving dental students, identified several aspects that affect students' performance that are linked to the curriculum. Students have a negative perception of a curriculum that include ineffective learning activities that are a waste of time, teaching and assessment that only emphasise memorising, poor teaching methods, negative attitude from teaching staff, and inconsistency during assessment (Henzi *et al.* 2007:636,642). For effective learning to occur, it is important that students engage with the study material. According to Nelson and Kift (2005:225-226), it depends on the type of student on how they engage with the study material as each student's engagement is different. When students engage with the study material, they develop an understanding of the content, effective reasoning and application of knowledge. Engagement of students also influences their attitude and perceptions towards their studies (Glatthorn *et al.* 2006:156).

A combination of the before-mentioned methods is used in the undergraduate medical curriculum of the University. In module MEF153, no true clinical training exists, but practical training does occur by means of tutorial sessions and the use of anatomical models and specimens (UFS 2010:Online).

2.5.3 Overview of the medical curriculum

The undergraduate medical curriculum of the University incorporates integrated, interdisciplinary outcomes based on the core curriculum with a spiral arrangement of content between study years and modules. A student-centred, integrated,

systematic learning strategy with university-based and community-based components is employed (UFS 2010:Online).

Integrated curricula create learning opportunities that include content from more than one traditional discipline. Integrated curricula enhance integration of the content and can be used effectively to learn content and develop basic skills (Glatthorn *et al.* 2006:152; Prideaux 2009:181). Both horizontal and vertical integration are incorporated into the medical curriculum. Horizontal integration between traditional disciplines is organised around the different body systems and/or themes. Vertical integration between study years revisit and elaborate on themes from one year to the next. Learning in an integrated curriculum creates knowledge that is easier to retrieve from memory as the initial learning occurs in context similar to clinical scenarios later covered in the curriculum or clinical practice. An integrated curriculum can only succeed if it is tested by integrated assessment (Prideaux 2009:181-185). Integrated Medical Assessment (IMA) is part of the undergraduate medical programme in all years of study. In Phase I (Semester 1 of the first-year of study), the module MEF153 is assessed as part of IMA, integrated with two other modules.

In outcomes-based curricula, the emphasis is on what is expected from graduates (outcomes). Outcomes-based curricula are developed from the top down, meaning the exit-level outcome of the programme must be determined first. This also means that the question that should be asked is, “What kind of doctors do we need?” We need doctors with knowledge essential for practice, sharpened skills and exceptional problem-solving abilities. Doctors are also required to have an attitude of client satisfaction (the patient) through effective service provision. A greater awareness and openness towards different cultures and traditions are also necessary (Dent & Harden 2009:5). With the before-mentioned in mind, the curriculum must be planned to ensure all the necessary knowledge, basic skills, profession-specific skills and attitudes are developed and assessed (Dent & Harden 2009:5; Smith 2009:162).

Student-centred learning strategies improve the development of a student-centred knowledge base and enhance effective thinking (Glatthorn *et al.* 2006:156).

A core curriculum should only include the core knowledge, skills and attitude needed to be a good doctor and to prevent content overload (Cholerton & Jordan 2009:193,195,197; Leinster 2009:17).

2.5.4 Module organisation

Correctly designed study guides can enable students to learn more effectively. Study guides serve as a communication between the lecturers and students. It insures that students are properly informed about the organisation, expectations, outcomes of a programme and specific module requirements. Study guides limit the problem of work overload by demarcating the scope and depth of required knowledge. It can especially be used to manage student-directed learning opportunities in practical environments, where individual support for students is limited. Critical thinking can be stimulated through study guides by using well-formulated questions and exercises. Study guides assist students in managing their own learning by providing an overview of the topic; describing prerequisites to the module; stating the learning outcomes; describing the planned learning strategies and recommending learning strategies for independent learning; providing the time table for the module; providing information and guidance with regard to assessment and provide contact details of staff (Laidlaw, Hesketh & Harden 2009:211-214).

In module MEF153, a comprehensive study guide is used to manage and guide teaching and learning using the strategies described in the preceding paragraph.

2.5.5 Module MEF153 – Structure and development of the body

Module MEF153 is presented during the first semester of the first-year (Phase I) of the undergraduate medical programme. It is presented in sixteen (16) sessions

distributed over the first semester. Each session consist of a two-hour formal lecture, followed by a one-hour tutorial session (UFS 2010:Online).

The aim of module MEF153 is to familiarise students with anatomical terminology; introduce students to the different body systems, with emphasis on anatomy; gain knowledge and understanding of the early (first eight weeks) embryonic development; apply this knowledge to describe normal anatomy and explain certain general anatomical variations and abnormalities; describe and explain normal and abnormal embryonic development; and use this knowledge to solve simple clinical problems (UFS 2010:Online).

2.5.6 Staff

Students that experience staff as knowledgeable with an eagerness to guide students have a positive attitude toward the quality of the curriculum (Henzi *et al.* 2007:636,644).

The high cost of medical training limits the money available for the appointment of staff. Alternatives to lecture-centred teaching must be employed to lower the financial burden on the institution. Peer-assisted, computer-assisted, and student-centred training are examples of actions that can be taken to relieve the financial cost of training (Dent & Harden 2009:5).

Newly appointed staff members need to attend a training workshop. Lecturers are routinely evaluated by students and peers during presentations, with feedback discussions to improve their classroom competencies. Staff development activities address, among other things, teaching skills.

2.5.7 Learning opportunities/situations

Yorke and Longden (2008:2) found that poor quality teaching is one of the major factors for termination of studies during the first-year of higher education in the UK. Learning only occurs during education opportunities if student engagement

with the work occurs (Nelson & Kift 2005:227). The learning outcome and content will determine the best approach to be used (Cholerton & Jordan 2009:194, Dent & Harden 2009:5; Leinster 2009:19).

Clinical learning opportunities in the initial phases of the programme create an understanding of the importance and necessity of the preclinical content (Henzi *et al.* 2007:635,642-643). Such opportunities also motivate students, and help with professional development (Dornan & Smithson 2009:24).

In lectures structured as learning opportunities, the focus is on covering extensive volumes of content, creating understanding of content, and motivating students. Lectures can be effective in teaching challenging content by providing an overview of a topic, communicating the latest research findings and views, and provoking deep and critical thinking. Some of the advantages of a lecture are that it enables a single lecturer to teach a large group of students and is economical. The main disadvantage of a lecture is the risk of it being mundane and ineffectual as a learning opportunity (Brown & Edmunds 2009:73-78). Large group lectures may lead to a decrease in lecturer-student interaction, loss of student focus, interest and engagement. This may influence the academic performance of certain students (Clark & Ramsey 1990:47; James 2007:8-9).

Universities need to adapt and compensate for the shortcomings of these large group sessions. This can be addressed through several actions. The choice of classroom activities, format of the learning opportunity, and effective use of technology can enhance focus, engagement and deeper learning (Brown & Edmunds 2009:73-78; Strydom *et al.* 1999:241). If students are effectively introduced to these new teaching and learning methods, it can improve academic success (Schwartz & Summs 2012:19-21; Strydom *et al.* 1999:241). Lecturers should be trained in the use of class presentations as an effective learning opportunity (Brown & Edmunds 2009:73-78).

Strydom *et al.* (1999:241) identify the preconceived idea amongst first-year students at the University of the Free State that teaching and learning would

mainly be in the format of formal lectures, centred on the lecturer. Teaching methods other than the expected can create academic insecurity among students (Strydom *et al.* 1999:241).

Tutorials are structured as small group activities, with peer-assisted learning. The peers used (tutors) are voluntary senior undergraduate medical students. Small group learning is more student-centred, and provides an alternative and balance to the mainly teacher-centred approach of lectures. Since students learn in different ways, this mixed approach to learning ensures optimal educational opportunities for everyone. Small-group learning promotes a more substantial learning process, develops problem-solving skills, and improves social interaction and the ability to function as part of a group (Evens 2012:6; Rudland 2009:80).

All these characteristics are important for medical professionals. They will function as part of a health care team, need effective problem-solving skills to manage diverse clinical situations and must be lifelong learners to remain updated with new developments in health care.

The planning, managing and implementation of small groups are critical to ensure effectiveness (Rudland 2009:81). To ensure effective small group interaction, the learning material ought to be specifically developed for the sessions and trained tutors should be used who are first briefed by the lecturers prior to each session (Ross & Cumming 2009:146; Rudland 2009:81). The use of peers as tutors also improves communication and understanding between students and tutors (Ross & Cumming 2009:143-144).

To ensure the development of lifelong learning skills, assignments and assessments should include learning opportunities based on independent learning, which allows students to take control of their learning. The independent learning opportunities are structured to a greater or lesser extent depending on the maturity of students as well as the course content and outcomes. Independent learning opportunities should include self-directed learning, resource-based learning and E-learning. Independent learning develops active, enhanced learning

and retention, personal motivation, responsibility, and personal time management (Harden 2009b:168-171).

In an effort to optimise learning opportunities, module MEF153 employs lectures, tutorial sessions and practical work as the main learning opportunities. Study guides and workbooks include activities that stimulate student engagement and enhanced retention (UFS 2010:Online).

2.5.8 Content

Content should address the outcomes of the module/programme. The learning opportunities and assessment opportunities have to be developed in such a manner as to address knowledge, skills and attitude (Harden 2009a:13). Cholerton and Jordan (2009:194-195) elaborate on the selection of learning opportunities to include knowledge, understanding, basic/generic skills, cognitive skills and subject-specific skills. Since module MEF153 is an introductory module presented in the first semester of the first academic year, the emphasis is on basic knowledge and the development of generic skills (UFS 2010:Online). Lachman and Pawlina (2009:260) state that the purpose of a basic medical science module is to create a fundamental scientific knowledge for later application in clinical modules.

2.5.9 Assessment

Assessment serves various purposes, including measuring competence, providing feedback, guiding student learning, and predicting the student's performance in his/her profession (Friedman Ben-David 2009:303).

The purpose of assessment influences the choice of assessment instrument/method (Friedman Ben-David 2009:303; Geyser 2004b:90-95). The method of assessment will influence whether students have a superficial or enhanced approach to learning. Assessment can contribute to the development of

lifelong learners, with the ability to apply the learnt knowledge and skills in diverse circumstances (Geyser 2004b:90-95).

Assessment should be an integral part of teaching and should contribute positively to learning. Assessment must be linked to the outcomes of the module and assess the understanding and application of knowledge and skills (Geyser 2004b:90-95). Different question formats are used for different purposes. Closed questions, for example in multiple-choice sections, are used where short answers from a limited range are to be selected. In open-ended question types, it is necessary for the student to generate his/her own response and write it down. If used correctly, both question formats have a role in higher education (Schuwirth & Van der Vleuten 2009:325). Open-ended essay questions are used where students are expected to demonstrate a reasoning process, evaluate a situation or apply knowledge (Schuwirth & Van der Vleuten 2009:327).

Assessment must fulfil the requirements and prescriptions of the module, programme, institution and external role players such as professional boards (Glatthorn *et al.* 2006:157-163).

Assessment in module MEF153 entails the assessment of large volumes of factual content. It is necessary for the student to memorise the subject content and be able to apply the knowledge in specific cases. Both open-ended and closed questions are used within module MEF153. Closed questions and short open-ended questions are mainly used to test the content knowledge, while essay type questions are used to evaluate the reasoning and application of knowledge in problem-solving situations (UFS 2010:Online). The standard and level of difficulty of assessments are determined and controlled by analysing Bloom's taxonomy for each question, and the paper as a whole.

In module MEF153, assessment entails weekly evaluations. Some of these evaluations contribute to the summative evaluation, while the rest have a formative role. One significant module-specific written assessment occurs during the semester that contributes to the summative assessment. One integrated

(integrated between first semester modules) assessment (IMA) also contributes to the summative assessment. All the mentioned summative assessments contribute to the student's module mark in MEF153. The module mark will serve as the final mark in MEF153 (UFS 2010:Online).

2.6 CONCLUSION

The theoretical perspectives explained in this study were used to develop the questionnaire and provide input in the research methodology used.

In the following chapter, Chapter 3, entitled ***Research design and methodology,*** the research design and research methodology used in this study are explained. It includes theoretical perspectives on the research design and methods selected for use in this study.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

As mentioned in Chapter 1, the aim of this study was to investigate students' perspectives regarding the importance of factors affecting their academic performance in their first year of studies in module MEF153. This chapter addresses the research design and research methodology conducted in this study. This chapter begins by providing theoretical perspectives on the research design and methods selected for use in this study. This is followed by a detailed explanation of each technique used which includes the literature study, designing the questionnaire, and data gathering using the questionnaire. The chapter concludes by discussing the pilot study, sample selection, and data analysis applicable to this study.

Research originates with an unanswered question or problem (Jansen 2012:2; Leedy & Ormrod 2001:4) (cf. 1.3). The research process entails the collection and interpretation of data. The collection and interpretation of data must attempt to solve the proposed research question (De Vaus 2001:2; Leedy & Ormrod 2001:7). Research is only of use after data are processed by the human mind (Leedy & Ormrod 2001:7; Pietersen & Maree 2012a:183).

This description of research forms the basis of this study. First, the research problem was formulated. Secondly, the problem was conceptualised and contextualised through a literature study. Thirdly, a questionnaire was constructed to gather data. Finally, data obtained from the literature study and questionnaire were analysed and interpreted in an attempt to answer the research question.

3.2 THEORETICAL PERSPECTIVES ON THE RESEARCH DESIGN

Theory building, types of methods and the research design in this study will be discussed.

3.2.1 Theory building

Theory building begins with the literature study, which describes theoretical perspectives and previous research findings (Leedy & Ormrod 2001:70-71). From the literature study, theoretical concepts are identified. The theoretical concepts and previous research findings influence the choice of research design. Selecting an appropriate research design is a critical component of any research process since this will determine the appropriateness and usefulness of data obtained from the study. Interpretation of data from the study will build on the existing theoretical base of the research topic (Katzenellenbogen, Joubert & Abdool Karim 1997:64).

With the research problem in mind, the literature study was used to develop a research design.

3.2.2 Types of methods

The research method used is required to be effective in gathering data in such a format that the data can be interpreted. Due to the nature of data differentiations, a research method must be selected that will be effective for a specific study (Leedy & Ormrod 2001:93,100).

Research methods can be organized into two major categories: qualitative research and quantitative research (Leedy & Ormrod 2001:100).

Quantitative research describes and explains a phenomenon by investigating the complex nature of phenomena. Research questions are specific; specific variables are isolated for study with control of all other variables; research methods used

are standardised; data collection occurs in a numerical format, analysed using statistical methods and presented as statistical values; and, findings are generalised to the population studied (Leedy & Ormrod 2001:101; Maree & Pietersen 2012a:145). Quantitative studies provide results that describe the magnitude and frequency of variables. Statistical measures are used to prove or disprove the hypothesis made in the research statement. Possible subjectivity, bias or misinterpretation is limited with a quantitative study design (Ivankova, Creswell & Plano Clark 2012:263-264).

In contrast, ***qualitative*** research explains phenomena by investigating relationships among measured variables. Research questions tend to be less specific, an extensive amount of data is collected from a small study population, and results are presented as verbal descriptions of the understanding of the situation studied (Katzenellenbogen, Joubert & Yach 1991:78; Leedy & Ormrod 2001:101; Nieuwenhuis 2012a:47). Advantages of qualitative research include a better insight in how people experience situations and prevent biasing of results created when participants perceive they are evaluated. It also creates the opportunity to produce new ideas on the topic researched. The analysis of data and the presentation of results may be difficult and create problems with subjectivity and bias (Katzenellenbogen *et. al*. 1991:78; Maxwell 1998:75-76).

Katzenellenbogen *et al.* (1991:78) note that qualitative and quantitative methods can be combined in a single study to obtain additional perspectives on the problem, such as the emotional experience of the study subjects. Such a method is referred to as a mixed-method (Plano Clark & Creswell 2008:21). The resulting mixtures can assist in strengthening the validity and reliability of findings (Plano Clark & Creswell 2008:123).

3.2.3 The research design in this study

The researcher, having considered the before-mentioned theories against the background of the identified research questions and objectives of this study, is of the view that a ***quantitative study enhanced by qualitative methodologies***

would be most appropriate for the questionnaire in this study. The quantitative components allowed for the measuring of the magnitude and frequency of specific variables. The qualitative components provided depth and understanding of the perspectives of participants. It also allowed the opportunity to introduce factors affecting academic performance not evaluated with the quantitative component of this study.

The research design best suited for this study is a ***descriptive survey.*** Descriptive surveys describe the population studied and provide information relative to the specific problem studied (Groves, Fowler, Couper, Lepkowski, Singer & Tourangeau 2009:3-5).

3.3 RESEARCH METHODS AND PROCEDURES

The methods that were used in this study comprised a literature study and a self-administered questionnaire. In this section, information on theoretical aspects, sample selection, data collection, data analysis, ethical considerations, and validity and reliability for each method will be included.

3.3.1 Literature study

The purpose of a literature study is to determine what had already been researched on a specific research topic and/or related topics and also provides perspective on a research problem. Literature cited is used to formulate the research problem, provide information on research methodology used in similar studies, and link results of the specific study to previous studies (Leedy & Ormrod 2001:70).

The literature studied focussed on factors affecting academic performance of students in higher education and characteristics of curricula that enhance or deter learning. Sources of information consulted included journal articles, books, internet publications and personal communication with an expert in the field of education and curriculum development. The special focus of the literature study

was on characteristics of a curriculum that influence academic performance and the importance of students' perspectives on and experiences of academic performance. The literature study forms the basis for this study and the development of the questionnaire. [For a full discussion on the literature underpinning this study, see Chapter 2].

3.3.2 The questionnaire survey

3.3.2.1 *Theoretical aspects*

The purpose of a survey is to record data at the current moment in time and a questionnaire is an effective way to obtain such data (Groves *et al.* 2009:2; Leedy & Ormrod 2001:196).

Questionnaires can be described as a list of questions to be answered by a respondent. A self-administered questionnaire is a printed out or electronic document that is distributed and that must then be completed by respondents themselves (Groves *et al.* 2009:3; Katzenellenbogen *et al*. 1991:39).

Advantages of questionnaires, according to Groves *et al.* (2009:29-32), Leedy and Ormrod (2001:197,200) and Patten (2001:1-3) include:

- It is an easy and time efficient way to obtain data from large numbers of participants;
- Data can be recorder-anonymous with self-administered questionnaires. This enhances the truthfulness of the data; and
- Quantitative and qualitative data can be recorded. Questions with a rating scale produce quantitative data, while open-ended questions provide qualitative data.

Disadvantages of questionnaires include:

- The respondents may not be representative of the intended study population, due to non-participation in voluntary questionnaire surveys; and
- Misinterpretation of questions can occur. This is influenced by the language used in the questionnaire as well as the reading, writing and cognitive abilities of participants (Groves *et al.* 2009:32-34; Leedy & Ormrod 2001:197; Patten 2001:1-3).

The questionnaire can be structured in different ways. Questions can be open-ended or closed. In open-ended questions the respondent provides his/her own answer to the question, while in closed questions the respondent needs to select an answer from a provided list of possible answers (Babbie & Mouton 2001:233; Groves *et al.* 2009:243-252; Patten 2001:18-19). Open-ended questions can be used to obtain insight into observations made by closed questions (Leedy & Ormrod 2001:200; Patten 2001:20). Closed questions provided responses with greater uniformity, which can be processed easily (Babbie & Mouton 2001:233; Maree & Pietersen 2012b:161).

Questionnaires can further be structured into questions that should be answered by all respondents, and contingency questions. Contingency questions are relevant to some respondents only. Instructions for this type of question should be transparent to ensure that the respondents answer only the intended question (Babbie & Mouton 2001:240).

Closed questions with similar response options are primarily constructed in a matrix. This is often used in combination with a rating scale (response options) such as the Likert scale. Advantages of a matrix construction include space efficiency; questionnaires are faster to complete, and it is easy to compare responses among different questions. There are also disadvantages to a matrix construction, such as respondents selecting the same answer to all questions, or following a specific pattern of answers on the matrix (Babbie & Mouton 2001:242; Maree & Pietersen 2012b:161-164; Patten 2001:34-37).

According to Babbie and Mouton (2001:233-238), Leedy and Ormrod (2001:202-204), and Maree and Pietersen (2012b:158-169), a good questionnaire has the following characteristics:

- It is attractive and professionally presented.
- It is short, to limit the time needed by participants to complete it.
- Only information necessary for the study is asked.
- It is complete – gathers all the information needed.
- Language is simple and clear.
- The questions and rating scale do not suggest answers.
- The questions and rating scale do not incorporate assumptions about participants.
- Instructions are clear and easy to understand and follow.
- Most questions are closed questions with a rating scale, with only a few open-ended questions distributed through the questionnaire.

The questionnaire must be structured in such a way that it is reliable and produce valid data (for further discussion on these aspects cf. 3.4).

3.3.2.2 *The questionnaire in this study*

Taking into account the research problem, study population, data to be collected and the intended statistical analysis of data, a questionnaire was the best instrument for data collection in this study. A questionnaire was designed that incorporated the advantages, while limiting the disadvantages of a questionnaire (cf. 3.3.2.1).

The purpose of the questionnaire was to investigate students' perspectives concerning the importance of factors affecting their academic performance in their first year of studies in module MEF153.

In compiling the questionnaire, factors affecting students' academic performance as well as factors perceived by students to affect academic performance (in the

present structure of module MEF153) were included. Relevant factors were identified from the literature and adapted for inclusion in the questionnaire.

For each factor included in the questionnaire, the participant's perspective of the importance of each factor affecting his/her own academic performance were measured, as well as the participant's perspective of the importance of each factor affecting students' academic performance in general. Various scaling methods were used in the questionnaire survey; for example, a participant had to select the most appropriate description applying to them in the section on demographic information. For the enquiry into the participant's perspective of the importance of each factor affecting their own academic performance, a five-point Likert scale was used with the options: large negative effect; negative effect; no effect; positive effect; and large positive effect. For the questions determining participants' perspective of the importance of each factor affecting students' academic performance in general, a ten-point scale was used with "**0**" indicating no effect and "**10**" indicating a very large effect. Open-ended questions were also included to elaborate on the data obtained from the qualitative component of the questionnaire survey.

All questions included in the questionnaire were to be answered from the viewpoint of the effect of each factor on the academic performance in module MEF153. Prior to commencement of the research, permission had to be obtained from the Vice-rector (Academic) for the participation of students in this study. An information leaflet was compiled in English and Afrikaans (cf. Appendix A), and handed to the participants in the study prior to completion of the questionnaire. Consent to participate in the study was obtained from participants through the inclusion of the following statement in the heading of the questionnaire: "that by completing this questionnaire you are voluntarily agreeing to participate in this research study" (cf. Appendix B).

The questionnaire (cf. Appendix B) was structured into the following sections: demographic data; personal factors affecting academic performance in the module MEF153; institutional/faculty characteristics affecting academic

performance in the module MEF153; medical programme characteristics affecting academic performance in the module MEF153; characteristics of module MEF153 affecting academic performance in the module MEF153; and open-ended questions.

Section: Demographic data (cf. Appendix B). This section deals with the collection of information to compose a personal and academic profile of the participant. Information of academic history, gender, race and home language was collected in this section.

Section: Personal factors affecting academic performance in the module MEF153 (cf. Appendix B). This section deals with personal factors that impact on student's academic performance. The following factors inherent to an individual, or influencing participants on an individual level were included in the questionnaire:

- Personal social factors
- Personal motivation
- Personality
- Academic ability
- Intelligence
- Language proficiency of student
- Previous academic success / failure in the module (if applicable)
- Learning style
- Financial cost of studies
- Personal transport to attend the module
- Personal time management in the module
- Personal interracial relations in studying the module
- Residence during studies

Section: Institutional/faculty characteristics affecting academic performance in the module MEF153 (cf. Appendix B). This section deals with characteristics of the institution (the University) and/or faculty (Faculty of Health Sciences) that may

influence academic performance in the module MEF153. The following factors were included in the questionnaire:

- General regulations of the UFS
- Knowledge of expectations (institutional)
- Administration of the University and Faculty
- Programme/module
- Institutional involvement in student learning (student support/student academic development)
- Language policy of university
- Academic atmosphere/academic environment
- Social structures based in the University (associations/groups)
- Racial interactions at the UFS
- Tutor programme
- Mentor programme

Section: Medical programme characteristics affecting academic performance in the module MEF153 (cf. Appendix B). This section deals with characteristics of the undergraduate medical programme. The following factors were included in the questionnaire:

- Outcome-based curriculum of this undergraduate medical programme
- Admission criteria for this undergraduate medical programme
- Programme organisation/lay-out
- Clarity of expectations of the undergraduate medical programme
- Time table of the undergraduate medical programme
- Exam time table
- Workload of undergraduate medical programme
- Assessment methods of the undergraduate medical programme
- Administrative processes associated with programme assessment
- General skills module (MEA113)
- Library and information services for the undergraduate medical programme

Section: Characteristics of module MEF153 affecting academic performance in the module MEF153 (cf. Appendix B). This section deals with characteristics of the module MEF153 presented in the first semester of the first academic year of studies in the undergraduate medical programme, which may influence academic performance in the module MEF153. Since the focus of this study was the academic performance in the module MEF153, this session is an elaborate investigation into characteristics of the module MEF153 to accurately identify as many factors as possible. The following factors regarding module MEF153 were included in the questionnaire:

- Positioning of the module within the medical curriculum
- Organisation/lay-out of the module
- Time schedules of the module
- Clear outcomes of the module
- Clear expectations in the module
- Volume of content of the module
- Workload of the module
- Number of contact sessions in the module
- Duration of contact sessions in the module
- Available time for independent study for the module
- Load of independent study in the module
- Level of difficulty of the module content
- Integration of knowledge between modules
- Subject specific language and terminology
- Language of instruction in the module
- Library and information services available for the module
- Difficulty of language of study material
- Class size in the module
- Lectures as teaching method in the module
- Practical sessions as teaching method in the module
- Tutorials as teaching method in the module
- Number of assessment opportunities in the module

- Volume of subject content included in a specific assessment opportunity in the module
- Clarity of questions in assessments
- Written tests as method of assessment in the module
- Time available for completion of assessments in the module
- Administrative processes associated with assessment in the module
- Feedback after assessments in the module
- Stress associated with assessment of the module
- Assessment of the module in IMA 113 (Integrated Medical Assessment)

Section: Open-ended questions (cf. Appendix B). This section contains open-ended questions. These questions were included to elaborate on the data obtained in the preceding sections of this questionnaire survey. These questions cover topics such as available resources and various characteristics of lecturers as a factor to influence academic performance of students. Participants also had the opportunity to list the most important positive and negative factors that influence their academic performance and to make any further comments.

3.3.2.3 *Sample selection*

The purpose of a study is to determine certain characteristics of a specific study population. Often it is not practical to study an entire study population. It may be impossible to involve all individuals of the study population or it may be too time-consuming or expensive. In such cases, a sample of the study population will be studied and the results will be extrapolated to the population. This will only yield accurate findings if the sample is representative of the population (Maree & Pietersen 2012b:172). A representative sample reflects all the characteristics of the population (Katzenellenbogen *et al*. 1991:34; Maree & Pietersen 2012c:172).

The choice of sampling technique must be appropriate for a study. The characteristics of the study population will greatly influence the choice of sampling design (Leady & Ormrod 2001:218, Maree & Pietersen 2012c:172-180). Sampling can be divided into random sampling and non-random sampling (Groves *et al*.

2009:97-98; Katzenellenbogen *et al*. 1991:35-37; Leady & Ormrod 2001:211; Maree & Pietersen 2012c:172).

With random sampling, the researcher can assume that the characteristics of the study population will be represented in the sample. Random sampling techniques include simple random sampling, stratified random sampling, proportional stratified sampling, cluster sampling and systematic sampling (Babbie & Mouton 2001:188-192; Groves *et al*. 2009:97-98; Katzenellenbogen *et al*. 1991:35-36; Leady & Ormrod 2001:211-218; Maree & Pietersen 2012c:172).

Non-random sampling is often used where it is not possible to perform random sampling (Henry 1998:104-106) or when in-depth understanding of a topic is required (Cresswell & Plano Clark 2011:174; Katzenellenbogen *et al*. 1991:37). It is not possible to determine how representative the sample is of the study population (Katzenellenbogen *et al*. 1991:37). Non-random sampling techniques include judgement (purposive) sampling, quota sampling, snowballing (networking) and convenience sampling (Babbie & Mouton 2001:166-167; Katzenellenbogen *et al*. 1991:37, Leady & Ormrod 2001:218-219; Maree & Pietersen 2012c:174-178).

No sampling was performed in this study due to the small size of the study population. All students registered for the module MEF153 and voluntarily participating in the study were included with ease and acceptable effort and expenses. By including almost the entire study population, sampling errors are limited and the results are truly representative of the population (Babbie & Mouton 2001:202-203).

3.3.2.4 *Target/study population*

The target/study population is the aggregation of all the theoretically-specified study elements (individuals) (Groves *et al.* 2009:44). The target population should be clearly defined in terms of place, time, and other study-specific parameters (Katzenellenbogen *et al*. 1991:35). For this study, the target

population included all students registered for the module MEF153 on the day of data collection (13th of May 2011). The target population included 152 individuals.

3.3.2.5 *Survey population*

According to Babbie and Mouton (2001:174), Groves *et al.* (2009:45) and Patten (2001:73), the survey population represents the actual population from which the sample is selected. The survey population included all students registered for the module MEF153 and present in the predetermined venue on the day of data collection and who were willing to participate.

3.3.2.6 *Sample size*

No sampling was performed in this study due to the small size of the study population. Of the 152 students registered for module MEF153 on the day of data collection (study population), only 137 were present on the day of data gathering. From this group, four students chose not to participate. The sample (participants) consisted of 133 individuals of the study population, present in the predetermined venue on the day of data collection (13th of May 2011) (survey population) and voluntarily participating in this study.

3.3.2.7 *Description of sample*

The sample thus consisted of the 133 students. From this sample 69 received instruction in English and 64 received instruction in Afrikaans.

3.3.2.8 *The pilot study*

The pilot study determines the feasibility of a study. It may provide answers to some uncertainties in the study design, for instance, the time necessary to complete the questionnaire and the effectiveness of measurement and analysis. It allows one to improve on the planned methodology. The pilot study is especially important in determining the validity and reliability of questionnaires (Groves *et al.*

2009:265; Katzenellenbogen *et al*. 1991:116-117, 196). It will identify and allow the researcher to correct any ambiguous questions or questions that cannot be answered. To obtain the greatest advantage from pilot studies, it is important to use a pilot study population with characteristics similar to the study population (Babbie & Mouton 2001:244-255).

A pilot study was performed according to the same methodology as the main study. The study population for the pilot study consisted of ten volunteers in semester 3 of the undergraduate medical programme. Participants were randomly selected from an alphabetical list of all volunteers using a random number list from Patten (2001:138). The pilot study was performed during February 2011 during a normal scheduled contact session between the researcher and students in semester 3 of the undergraduate medical programme.

The pilot study was used to refine the protocol of the main study; examine the feasibility of the methodology of the study; evaluate the clarity and distinctness of the questionnaire elements; determine the time needed to complete the questionnaire; and to check for typing errors. Data from the pilot study were not included in the final questionnaire survey. The process is explained in Figure 3.1.

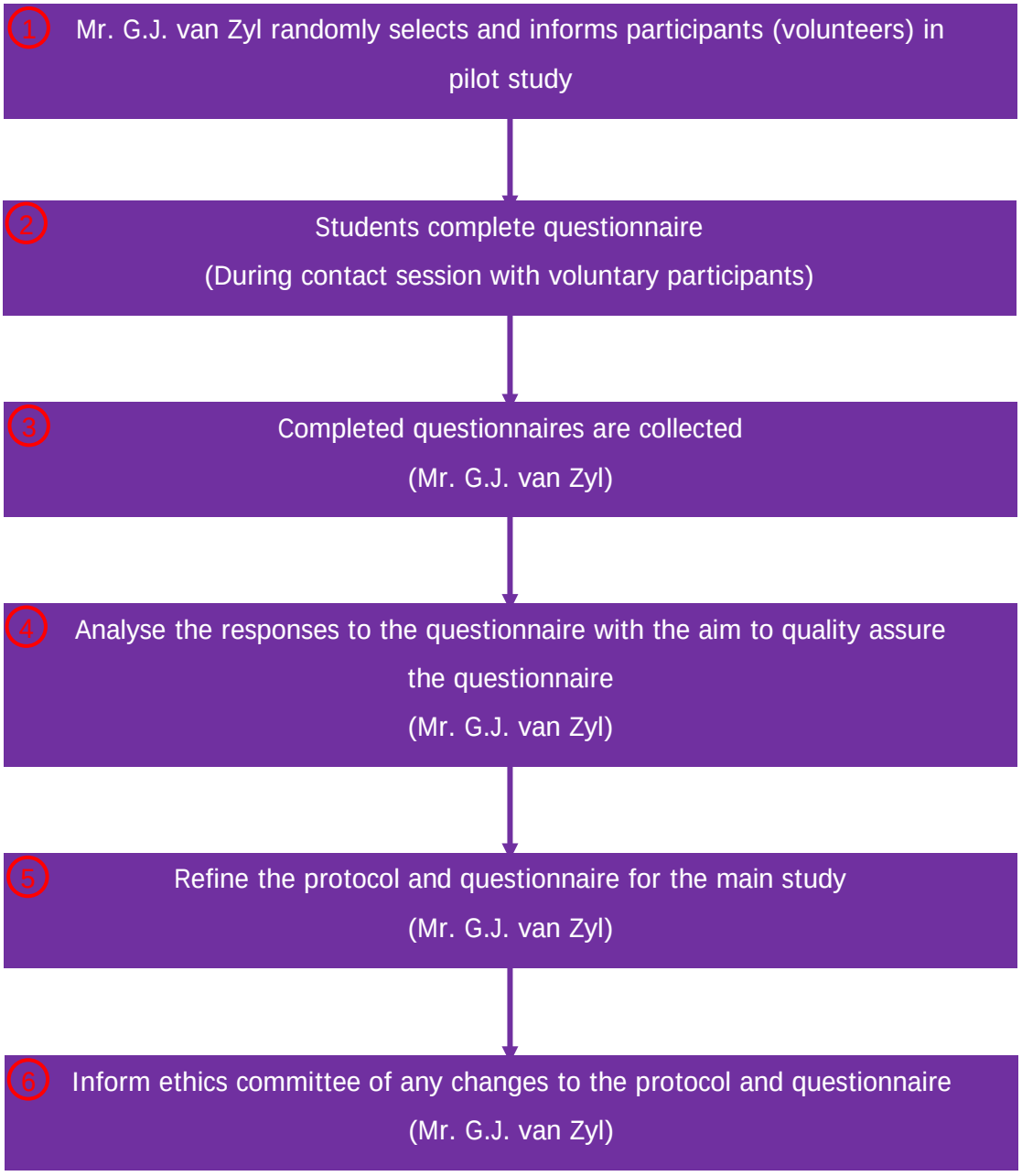

Figure 3.1: Measurement process of pilot study

[Compiled by the Researcher, Van Zyl: 2012]

3.3.2.9 *Data gathering*

Data gathering entails the completion of the self-administered questionnaires by the study participants. Questionnaires were anonymous. Data were collected during two predetermined, scheduled, consecutive sessions on the 13th of May 2011. One session was for Afrikaans-speaking participants and one for English speaking participants.

During each session participants were informed about the study by the researcher. Consent to participate in the study was obtained from participants. A total of 133 questionnaires were completed, of which two were partially completed. Data from the two partially completed questionnaires were included in this study for those questions answered to obtain the most representative data. The researcher collected the completed questionnaires and performed the coding and capturing of data on computer.

3.3.2.10 *Data analysis*

The statistical analysis of quantitative data was performed by a statistician from the department of Biostatistics of the University. Results were summarised by frequencies and percentages (categorical variable) or means or medians (numerical variables).

Responses to open questions (qualitative data) were analysed by the researcher. The data analysis approach described by Nieuwenhuis (2012b:99) was used to analyse the qualitative data. Analyses of qualitative data included repeated reading and reflection, organising into themes/categories and subcategories and coding which were applicable. The data were analysed for frequencies of repetitive themes (codes) (Babbie & Mouton 2001:491-495).

3.3.2.11 *Data interpretation*

With the interpretation of data obtained, the researcher hoped to answer the research problem that initiated the research. Interpretation of data extracts meaning from the data (Leady & Ormrod 2001:5,8). In this study, the quantitative data directed the interpretation of data. Qualitative data were used to explain, enhance and clarify observations made concerning the quantitative data.

3.4 ENSURING THE QUALITY OF THE STUDY

The quality of a research project is determined by the precision, accuracy, reliability and validity of the measurements. The precision of measurements must be sufficient for the requirements for the study. Measurements must also be accurate to reflect the actual situation in the world. The quality of a study is described by its reliability and validity (Groves *et al*. 2009:274-286; Leady & Ormrod 2001:31; Pietersen & Maree 2012b:215-217).

3.4.1 Data quality (reliability/dependability) and objectivity/ conformability

Reliability of measurement indicates to what extent the same result will be obtained if the same measurement instrument is applied to the same object (Babbie & Mouton 2001:119-120; Bickman, Rog & Hedrick 1998:20). The possibility of creating variation in results exists within the measurement instrument (questionnaire) (Babbie & Mouton 2001:243). The choice of words and lay-out used in the questionnaire, the choice of scaling, the timing of data gathering and time required to complete the questionnaire, and overall length of the questionnaire can influence the reliability (Fowler 1998:344).

The choice of words can influence the interpretation of the questions by the participant, and affect the response (Babbie & Mouton 2001:234, De Vaus 2001:80).

Layout and organisation of the questionnaire can influence the clarity of expected actions to be taken (Babbie & Mouton 2001:234, De Vaus 2001:80). Critical evaluation of the questionnaire and evaluation of the pilot study results were used to refine and improve the questionnaire elements and layout to enhance reliability.

The number of choices on the Likert scale can create variation. Literature study on the use of Likert scales and evaluation of the pilot study results were used to create an effective Likert scale (Maree & Pietersen 2012b:167-169; Pietersen & Maree 2012b:219). The scale selected created clear distinction between participant's opinions and were suitable for statistical analysis.

Timing and time available for completion of the questionnaire can influence the engagement of students in completion of the questionnaire; poor engagement and commitment of students in the study can increase variation (Babbie & Mouton 2001:237). Efforts were made to plan data collection with sufficient time available for completion of the questionnaire, without placing additional pressure on the academic or personal schedules of participants.

Questionnaires that are too lengthy or time consuming can generate responses which do not adequately reflect the factor/question in the questionnaire. Literature on the use of questionnaires (Fowler 1998:344), comments from peers and responses from the pilot study were used to address these aspects in the questionnaire.

Variation in measurement due to the test-retest reliability as described by Pietersen and Maree (2012b:215) was also prevented by arranging only one day for data gathering, ensuring identical conditions for all participants.

Reliability between the Afrikaans and English versions of the questionnaire was assured by a language editor that compared the meaning of questions between the two languages.

Babbie and Mouton (2001:278) explain conformability as the degree to which the findings of the study are a direct outflow of the results of the study, without biases. Conformability was achieved through the voluntary, anonymous questionnaire with a pre-determined Likert scale.

A research process is objective when error is eliminated (or reduced) in the research process (Babbie & Mouton 2001:12). Objectivity in this study was ensured by not using a sample population that can contribute to sampling bias. The use of a self-administered questionnaire with a Likert scale also improved objectivity by limiting errors of measurement and observational errors (De Vaus 2001:29; Nieuwenhuis 2012c:86). The statistical methods used are also based on sound scientific methodology.

3.4.2 Validity of measurement

Validity of measurement indicates the extent to which an instrument measures what it is supposed to measure (Groves *et al*. 2009:50). Face validity, content validity, criterion validity, and construct validity must be taken into consideration in choosing and developing the questionnaire as a measurement instrument (Leady & Ormrod 2001:98). This was achieved by comparing the questionnaire elements with previous, similar studies, evaluation and approval of the questionnaire by an evaluation committee, ethics committee and statistician, and improvements of the questionnaire after thorough evaluation of the pilot study's results.

3.4.3 Credibility / Internal validity

Internal validity refers to the meaningfulness and credibility of the research project as a whole. A research study is only credible if accurate, useful conclusions can be made from it (Reichardt & Mark 1998:195-196). The validity of the questionnaire as measuring instrument contributed to internal validity. The validity of the questionnaire was assured by anonymous, voluntary participation in the study and the large, representative study population.

3.4.4 Generalisation and transferability

Transferability indicates the extent to which results can be generalised and transferred to other contexts with other respondents. First, transferability must be accomplished from the sample population to the study population (Maxwell 1998:95). This was achieved by including as many as possible study population individuals in the study. Transferability to other study populations is possible as long as a large degree of similarities between the study populations can be established. A degree of transferability to other medical schools in South Africa, first-year students in tertiary education and tertiary education at international institutions are possible if similar characteristics between the study populations can be illustrated.

3.4.5 Trustworthiness

Trustworthiness of findings in a study is established through the combination of the reliability, conformability, objectivity, validity of measurement, internal validity, credibility, transferability and generalisation (Babbie & Mouton 2001: 276). Trustworthiness of findings in this study is established through the combination of the before-mentioned factors. Attention was given to each of the before-mentioned factors, as described in paragraphs 3.4.1 to 3.4.4.

3.5 ETHICAL CONSIDERATIONS

Ethical considerations for this study included the necessary approval and permission to perform the study, informed consent by participants, privacy and confidentiality and measures to ensure correct interpretation of results.

3.5.1 Approval

Approval to perform the research involving students of the University was obtained from the Vice-rector: Academic Planning (cf. Appendix C). Approval was

also obtained from the Head of the School of Medicine and the Dean of the Faculty of Health Sciences of the University as part of the Ethical approval.

Ethical approval was granted by the Ethics Committee of the Faculty of Health Sciences of the University. The purpose of the ethical committee is to approve ethical considerations, ensure that the before-mentioned approval was granted, and ensure that the academic standard of the study complied with the standards for a Master's degree (cf. Appendix C). The ethical approval number for this study is ECUFS NR 35/2011.

3.5.2 Informed consent

Participation in this study was voluntary. Participants were informed about voluntary participation through the information leaflet (cf. Appendix A). Participants were also informed about the study by the researcher during data collection sessions. Consent to participate in the study was obtained from participants through the inclusion of the following statement in the heading of the questionnaire: "that by completing this questionnaire you are voluntarily agreeing to participate in this research study" (cf. Appendix B).

3.5.3 Right to privacy and confidentiality

Participation in this study was anonymous (cf. Appendix A and B). Data was collected and handled with honesty and confidentially. Completed questionnaires were stored in a locked filing cabinet and also electronically stored within password-protected files that only the researcher was able to access. No personal information of participants or any data that can be linked to an individual participant were presented.

3.5.4 Minimising of potential misinterpretation of results

Anonymous questionnaires prevented bias towards individuals. Responses to open-ended questions were coded to ensure similar conclusions from similar data.

3.6 CONCLUSION

Chapter 3 provided an overview on research methodology and described the research design and associated methods used in this study. These methods included a literature study and questionnaire survey. The chapter concluded by discussing the actions taken to ensure the quality of the study and ethical issues applicable to this study.

In the next chapter, Chapter 4, entitled ***Results and discussion of findings of the quantitative section of the questionnaire survey***, the results of the questionnaire survey will be reported and discussed. This will be done according to the lay-out of the questionnaire. Results of this study will be reported and discussed according to the current literature on each topic. The discussion will aim to identify and elaborate on factors affecting academic performance of students in their first year of studies in module MEF153.

CHAPTER 4

RESULTS AND DISCUSSION OF FINDINGS OF THE QUANTITATIVE SECTION OF THE QUESTIONNAIRE SURVEY

4.1 INTRODUCTION

The previous chapter, Chapter 3, discussed the theoretical background on the research design and methods used for this study to determine students' perspectives regarding the importance of factors affecting their academic performance in their first year of studies in module MEF153. A detailed discussion on the study population, sample selection, questionnaire composition and organisation, methods for data gathering, analysis and interpretations were also included in Chapter 3.

In this chapter, the results and findings of the quantitative sections of the self-administered questionnaire investigating the before-mentioned factors will be discussed. First, the demographic data will be presented and discussed. Thereafter, each factor included in the quantitative sections of the questionnaire will be discussed. For each factor, the findings for the "extent to which the factor affects academic performance of STUDENTS IN GENERAL" and "extent to which the factor affects the participant's PERSONAL academic performance in module MEF153" will be reported and discussed separately.

4.2 FORMAT OF QUESTIONNAIRE

The questionnaire was organised into the following sections: Demographic data; personal factors affecting academic performance in module MEF153; institutional/ faculty characteristics affecting academic performance in module MEF153; medical programme characteristics affecting academic performance in module MEF153; characteristics of module MEF153 affecting academic performance in module MEF153; and a qualitative section with open questions to elaborate on the data obtained in the preceding sections of this questionnaire survey.

For the section on demographic data, participants needed to select the most appropriate response to each question from a list of possible responses. For the sections on personal factors affecting academic performance in module MEF153, institutional/faculty characteristics affecting academic performance, medical programme characteristics affecting academic performance, and characteristics affecting academic performance, each question/statement was divided into two responses: One response for the "extent to which the factor affects academic performance of STUDENTS IN GENERAL", and a second response for the "extent to which the factor affects the participant's PERSONAL academic performance in module MEF153". For responses regarding the effect of each factor on students in general, a Likert scale of 0 to 10 was used, with 0 = no effect and 10 = very large effect. For responses regarding the effect of each factor on the participant's personal academic performance, a Likert scale was used, with the options: large negative effect, negative effect, no effect, positive effect and large positive effect.

4.3 RESULTS, FINDINGS AND DISCUSSION OF RESPONSES TO THE QUANTITATIVE SECTIONS OF THE QUESTIONNAIRE

The results, findings and discussion were organised according to the sections of the questionnaire. All results and discussions below are based on the responses from participants in this study and not the total study population. Since the entire study population consisted of 152 students from which 133 students participated in the study (participation/response rate of 87.5%), the results mentioned and discussion that follows can be considered as representing the study population.

4.3.1 Demographic data

Information on academic history was gathered to determine the academic profile of participants. Information on gender, race, language of academic instruction and home language was gathered to determine the biographic profile of the student population studied.

4.3.1.1 *Academic history*

On the question of academic history, participants could have indicated whether they were in grade 12 the year preceding this study, or whether they were in grade 12 before the year preceding this study.

Table 4.1: Academic history

Academic history	Frequency
In grade 12 in preceding year	74 (56%)
In grade 12 before the preceding year	59 (44%)
Total	133 (100%)

The high percentage of students (44%) that were not in grade 12 preceding their first year of medical studies is noteworthy.

4.3.1.2 *Language of academic instruction*

Students have a choice of language of academic instruction between Afrikaans and English. Students need to indicate their preferred language of instruction on their application for studies at the University. During the selection procedure of students for entrance into medical studies, the indicated language of academic instruction is taken into account with the aim of selecting an equal number of students for instruction in Afrikaans and English (HPCSA 2010:Online).

Table 4.2: Language of academic instruction

Language of academic instruction	Frequency
Afrikaans	65 (49%)
English	68 (51%)
Total	133 (100%)

As a result of the selection procedure, a result of 50% in each group is expected (HPCSA 2010:Online). The preferred language of academic instruction is no indication of the home language of students.

4.3.1.3 *Gender*

Selection for gender occurs during the selection procedure of students for entrance into medical studies (HPCSA 2010:Online).

Table 4.3: Gender

Gender	Frequency
Female	74 (56%)
Male	59 (44%)
Total	133 (100%)

More female students were enrolled for first-year medical studies during the year of this study.

4.3.1.4 *Race*

The race of participants was determined since the effect of certain factors is more prominent among certain races as indicated in the study by Moagi-Jama (2009:118).

Table 4.4: Race

Race	Frequency
Black	28 (21%)
White	89 (67%)
Coloured	5 (4%)
Indian	11 (8%)
Other	0 (0%)
Total	133 (100%)

The majority of first-year medical students in the year of this study were white.

4.3.1.5 *Home language*

The diverse racial and cultural backgrounds of students contribute to the different home languages. Academic instruction in a language other than home language might affect your academic performance (Van Rensburg & Lamberti 2004:73).

Table 4.5: Home language

Home language	Frequency
Afrikaans	77 (58%)
English	27 (20%)
Sesotho	12 (9%)
Xhosa	8 (6%)
Languages other than those mentioned above, including German, Urdu, Setswana, isiZulu and Tsonga.	9 (7%)
Total	133 (100%)

The home language of the majority of first-year medical students in the year of this study was Afrikaans.

4.3.2 Personal factors affecting academic performance in module MEF153

This section of the questionnaire investigated characteristics, abilities and skills of students that influence their academic performance.

4.3.2.1 *Personal social factors*

The majority of students were under the impression that social factors play an important role in academic performance, with a median of 7 (on a scale between 0 and 10). Slightly more students (47%) felt that their social milieu influence their academic performance positively, while 39% of students felt that social factors influence their academic performance negatively.

Table 4.6: Personal social factors

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	52	39%
No effect	18	14%
Positive effect	63	47%

4.3.2.2 *Personal motivation*

Ninety per cent of students scored motivation between 7 and 10 on the importance of motivation as a factor that influences academic performance, with 37% scoring motivation a mark of 10 (Median = 9). The studied student population can be considered highly motivated with 88% of students indicating their motivation having a positive effect on their academic performance.

Table 4.7: Personal motivation

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	11	8%
No effect	5	4%
Positive effect	117	88%

4.3.2.3 *Personality*

Personality was perceived as an important factor that influences academic performance. Eighty-nine per cent of students scored personality between 5 and 10 with a median of 7. Heindrich and Scheepers (2004:262) show a correlation between personality type and academic performance (cf. 2.3.1). Introverted personality types tend to be more disciplined students. Seventy-eight per cent of students felt that their personality contributes positively to their academic performance.

Table 4.8: Personality

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	10	8%
No effect	19	14%
Positive effect	104	78%

4.3.2.4 *Academic ability and intelligence*

Students consider both academic ability and intelligence as important influences (both with a median = 8) on academic performance. The majority of students considered themselves to have academic ability (93%) and intelligence (90%) that influences their academic performance positively. A small percentage of students felt that their lack of academic ability (2%) or below average intelligence (1%) influences their academic performance negatively.

Table 4.9: Academic ability

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	3	2%
No effect	6	5%
Positive effect	124	93%

Table 4.10: Intelligence

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	1	1%
No effect	12	9%
Positive effect	120	90%

The positive view students have of their intelligence and academic ability can be explained by the research of Harvey *et al*. (2006:41). They observed a tendency among first-year students to overestimate their academic ability (cf. 2.3.5).

4.3.2.5 *Language proficiency of student*

The student's perspective of the importance of language in academic performance varied greatly from 0 to 10 on the scale. The mean value was 8, indicating that the majority of students believed language proficiency is important in academic performance. The personal effect experienced by students of language proficiency on academic performance varied, with 12% of students indicating language proficiency to have a negative effect; 13% indicating no effect; and 75% of students indicating that their language proficiency has a positive effect on their academic performance.

Table 4.11: Language proficiency of student

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	16	12%
No effect	17	12%
Positive effect	100	75%

It is known that language proficiency in the language of instruction influences academic performance (Van Rensburg & Lamberti 2004:71-86) (cf. 2.3.7). The variances in the findings can be explained by the many different home languages

present in the study population and the choice of language of instruction (cf. 4.3.1.2 & 4.3.1.5)

4.3.2.6 *Previous academic success/failure in module MEF153*

Students' perspective of the effect of previous academic success or failure on academic performance had a median of 7, indicating that the perception exists that it has an effect on academic performance. Forty students (n=133) believed that previous academic success or failure had no effect on academic performance, while 106 students believed previous academic success or failure had an effect on academic performance. Twelve students (n=124) believed that previous academic success or failure had a negative influence on their personal academic performance. Sixty-one students believed it had a positive effect and 31 students believed it had no effect on their academic performance. A total of 124 students answered this question on the effect of previous academic performance in module MEF153 on their current academic performance in module MEF153, even though it is known that only a small number of students in this study actually had previous academic experience in module MEF153. These perspectives are probably based on students' personal experience in other modules and/or academic success and failure in general.

Table 4.12: Previous academic success/failure in module MEF153

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	32	26%
No effect	31	25%
Positive effect	61	49%

Studies showed that students with prior tertiary academic experience perform better in their academic studies (Moagi-Jama 2009:101). Better academic performance by students with prior tertiary academic experience is not only due to the repetition of the module content, for these students are often more committed to their studies and have better developed skills needed for studies (Yorke &

Longden 2008:17-22; Bernal & Aragon 2004:209) (cf. 2.3.4). Fifty-six per cent of participants entered the undergraduate medical programme directly from grade 12 in the school system, and had no previous tertiary academic experience. The remaining 44% of participants completed grade 12 of secondary school at least one year before this study was performed (cf. 4.3.1.1). It is possible that skills needed for improved academic performance may have been developed during this time period.

4.3.2.7 *Learning style*

Eighty-six participants (n=133) felt that students' learning styles will influence academic performance. Twenty-one participants (n=133) experience their personal learning style to have a negative effect on their academic performance, while 86 participants experienced a positive effect, and 26 felt their personal learning style did not influence their academic performance.

Table 4.13: Learning style

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	21	16%
No effect	26	19%
Positive effect	86	65%

Diversity in the student population also includes diverse preferred learning styles. Various teaching styles, methods and learning opportunities are utilised in the undergraduate medical programme. The teaching method and learning opportunity utilised are selected to reach the intended outcome in the most effective way. At the same time, the variety of teaching methods and learning opportunities will benefit different students at different times, depending on their preferred learning style (Bandaranayake 2009:385; Dent & Rennie 2009:378-379; Glatthorn *et al.* 2006:357-366; Gqweta 2012:214-215). Students in the undergraduate medical programme are also supported in developing skills to adapt their learning style to be more effective in their studies (cf. 2.3.6; 2.4.2).

4.3.2.8 *Financial cost of studies*

Participants in this study experienced the financial cost of studies as a slightly less important factor affecting academic performance, with a median of 6. Fifty-two per cent of participants experienced financial cost of studies to have no effect on their academic performance. Twenty-nine per cent and 19% of participants experienced financial cost of studies as a negative and positive effect on their academic performance respectively.

Table 4.14: Financial cost of studies

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	38	29%
No effect	69	52%
Positive effect	25	19%

Dent and Harden (2009:5) and Strydom *et al*. (1999:239) describe the impact of increased cost of studies on academic performance by students. The high percentage (29%) of participants in this study that experienced a negative effect on their academic performance strengthen the results found by Dent and Harden (2009:5) and Strydom *et al*. (1999:239) (cf. 2.3.11).

4.3.2.9 *Personal transport to attend module MEF153*

Students perceived the effect of personal transport on academic performance as less important with a median of 5. Sixty-seven per cent of students experience no effect of personal transport on their academic performance. Only 14% of students experience a negative effect of personal transport on their academic performance, in spite of known problems in coordinating public transport and class schedules (Strydom *et al.* 1999:239) (cf. 2.3.12).

Table 4.15: Personal transport

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	19	14%
No effect	89	67%
Positive effect	25	19%

4.3.2.10 *Personal time management in module MEF153*

Personal time management is an important factor affecting academic performance. Participants scored the importance of time management between 4 and 10 with a median of 8. Only 5 participants (n=133) did not experience any effect of personal time management on academic performance. Thirty-nine participants (n=133) (29%) experienced a negative effect on their academic performance caused by poor personal time management, while 89 (n=133) (67%) of the participants experienced personal time management to have a positive effect on their academic performance.

Table 4.16: Personal time management

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	39	29%
No effect	5	4%
Positive effect	89	67%

Previous studies did not find a correlation between time management and academic success (Heindrich & Scheepers 2004:260). The students' perceived importance of time management and perceived effect of time management on their academic importance justify attention to the development of time management skills as well as further investigation into this topic (cf. 2.3.13).

4.3.2.11 *Personal interracial relations in studying module MEF153*

Students indicated personal interracial relations as a less important factor influencing academic performance (Median = 2). Seventy-seven per cent of students indicated personal interracial relations to have no affect on their academic performance. Twenty-three per cent, however, did indicate personal interracial relations to affect their academic performance, with 19% a positive effect and 4% a negative effect.

Table 4.17: Interracial relations

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	5	4%
No effect	103	77%
Positive effect	25	19%

4.3.2.12 *Residence during studies*

Students consider their residence during studies to be an important factor in academic performance (Median = 7). The perceived influence of residence varied in the study population, with 32% indicating residence to have a negative effect on their academic performance; 27% no effect and 41% a positive effect.

Table 4.18: Residence

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	42	32%
No effect	36	27%
Positive effect	55	41%

4.3.3 Institutional/Faculty characteristics affecting academic performance in module MEF153

This section of the questionnaire investigated characteristics of the academic institution (University of the Free State) and the Faculty of Health Sciences within the University. These characteristics are directed by the policies and regulations of the institution and faculty. It includes institutional regulations, administrative services and processes, language policy, academic environment, racial policies and academic development and support programmes.

4.3.3.1 *General regulations of the University*

The students' perspective of the importance of institutional regulations on academic performance varies between 0 and 10 with the median = 7. The majority of students did not experience any effect by institutional regulations on their academic performance. Forty-two per cent of participants experienced a positive effect on their academic performance while 11% experienced a negative effect on their academic performance caused by the institutional regulations.

Table 4.19: General regulations of the University

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	14	11%
No effect	63	47%
Positive effect	56	42%

Institutional regulations can have a positive or negative effect on academic performance. Well-communicated, clear regulations create a feeling of trust and security that improve academic performance. It also directs the students' actions and academic procedures. Institutional regulations direct all aspects of the academic policy such as language policy, assessment policy, and class attendance. Students with poor academic performance linked to language of instruction, assessment methods and assessment opportunities, and students who are not

allowed access to the examination opportunities due to poor class attendance may blame the regulations for their poor academic performance (Bernal & Aragon 2004:209; Yorke & Longden 2008:7) (cf. 2.4.1).

4.3.3.2 *Knowledge of expectations (institutional)*

Knowledge of institutional expectations from students is perceived to be of moderate importance with reference to the effect on academic performance (Median = 6). Sixty-six per cent of participants in this study perceived knowledge of institutional expectations to have a positive effect on their academic performance. Twenty-six per cent experienced no effect, and 8% experienced a negative effect on their academic performance.

Table 4.20: Knowledge of institutional expectations

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	11	8%
No effect	35	26%
Positive effect	87	66%

Institutional expectations include broad expectations described in institutional, faculty and school vision and mission statements. It also includes expectations incorporated in general regulations and faculty, school and programme regulations. Furthermore, it includes policies and codes of conduct e.g. assessment policy and dress code. Effective communication of these expectations is necessary to create knowledge of these expectations. When students are aware of these expectations they adapt their thoughts and actions to meet these expectations. When students are not aware of these expectations, the expectations are sometimes not met, due to students who did not aim to meet the expectations (Yorke & Longden 2008:7). These expectations are communicated to students in the first semester of their studies (cf. 2.3.2).

4.3.3.3 *Administration of the University/Faculty/programme/module*

Approximately half of the participants in this study (49%) did not believe that the administrative system of the University affects their academic performance. Forty-two per cent said the administrative system actually has a positive effect on their academic performance and 9% experienced a negative effect on academic performance. The study also found that the administration of the institution is only a moderately important factor (Median = 5) in influencing academic performance.

Table 4.21: Administration

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	12	9%
No effect	65	49%
Positive effect	55	42%

4.3.3.4 *Institutional involvement in student learning (student support/ student academic development)*

Institutional involvement in student learning is perceived as important in students' academic performance (Median = 7). Academic performance is positively influenced by institutional involvement in the cases of 71% of participants in this study, while 26% of participants reported no effect and 4% reported a negative effect on academic performance due to institutional involvement in student learning.

Table 4.22: Institutional involvement in student learning

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	5	4%
No effect	34	26%
Positive effect	94	70%

Ever-increasing numbers of students are in need of academic development and support (James 2007:7; Smit 2012:369-371). In the Faculty of Health Sciences there is a formal programme for student academic development and support. Student academic development is integrated into the undergraduate medical programme and also available on a consultation basis. This active involvement in student learning is the possible explanation for the positive experience reported in this study with regard to institutional involvement in student learning.

4.3.3.5 *Language policy of the University*

The language policy of the University is mainly experienced to influence academic performance positively. Fifty-six per cent of participants in this study perceive the language policy to have a positive effect on their academic performance; 36% experience no effect; and 8% experience a negative effect. Language policy is also considered an important factor in influencing academic performance (Median = 7).

Table 4.23: Language policy

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	10	8%
No effect	48	36%
Positive effect	74	56%

These findings are similar to the findings of James (2007:7).

4.3.3.6 *Academic environment*

The academic environment was indicated as an important factor that influences academic performance with a median = 8. Eighty-seven per cent of participants in this study perceive the academic environment at the University as having a positive effect on their academic performance. This is the second highest score for factors having a positive effect on academic performance. Five per cent feel the academic environment at the University has a negative effect, and 8% feel it has no effect on academic performance.

Table 4.24: Academic environment

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	7	5%
No effect	10	8%
Positive effect	116	87%

Academic atmosphere is influenced by and includes numerous factors such as teachers' skills, learning content, physical teaching environment, student support, assessment, personal abilities and social life (McAleer *et al*. 2009:64-65). The huge positive effect of academic environment on academic performance indicates that the combination of factors that influence academic environment are combined in such a way to create an atmosphere that contributes positively to learning. Not all students experienced the same academic environment similarly, which can explain why some students experience the academic environment as either influencing academic performance negatively or not having any effect at all (cf. 2.4.4).

4.3.3.7 *Social structures based in the University (associations/groups)*

Social associations at the University have only a moderate effect on academic performance (Median = 6.5). This study found social associations to have a 54% positive effect, 7% negative and 39% no effect on academic performance.

Table 4.25: Social associations

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	10	7%
No effect	51	39%
Positive effect	71	54%

Since the majority of participants experience social associations to have a positive effect on academic performance, it indicates that even with the diversity in the student population, a healthy social environment exists. The social environment influences different aspects of student life including their attitude towards their studies (Glatthorn *et al*. 2006:25) (cf. 2.3.2), engagement in academic work (Nelson & Kift 2005:227) (cf. 2.5.2) and students' experience of the academic environment (cf. 2.4.4 and 4.3.3.6).

4.3.3.8 *Racial interactions at the University*

Participants perceived racial interactions to have a small effect on academic performance with a median of 4. In correlation with this, 65% of participants indicated that racial interactions have no effect on their academic performance. Six per cent of participants experienced a negative effect and 29% experience a positive effect on academic performance.

Table 4.26: Racial interactions

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	8	6%
No effect	87	65%
Positive effect	38	29%

Racial diversity exists in this study population (cf. 4.3.1.4). Integration between different racial groups is important in creating an academic environment that promotes learning (Hardiman & Jackson 1992:21). This study found that racial differences is not a very important influence on academic performance, with the majority indicating that racial differences had no effect on their academic performance. From this, one can conclude that racial interaction at the University is effective (cf. 2.3.9).

4.3.3.9 *Tutor programme*

The tutor programme of the School of Medicine has a strong effect on academic performance (Median = 8). Only one participant (<1%) indicated that the tutor programme has a negative effect on academic performance while 84% of participants felt that the tutor programme has a positive effect on academic performance.

Table 4.27: Tutor programme

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	1	1%
No effect	20	15%
Positive effect	112	84%

The student population is constantly becoming more diverse with regard to culture, language proficiency, academic ability, and study skills (Ackerman *et al.*

2013:911-913; James 2007:2; Nelson & Kift 2005:226, Reason *et al.* 2006:149,167; Yates 2012:46-49). Most of the problems that arise in academic performance linked to student diversity can be addressed through tutor sessions. The focus of tutor sessions is the development of knowledge, insight and application of academic content. The use of peers (senior students) as tutors enhances unrestricted communication between tutors and fellow students. Good communication between lecturers and tutors ensure that the structure and content of tutor sessions are effective in assisting learning (Ross & Cumming 2009:146; Rudland 2009:81) (cf. 2.3.6, 2.4.2 and 2.5.7).

4.3.3.10 *Mentor programme*

The purpose of the peer mentoring programme is to assist and guide students in the academic process. Mentoring focuses on all aspects of academic and student life, including emotional, motivational, social, and administrative aspects, study skills and, to a lesser extent, the academic content in a non-threatening environment (Bernal & Aragon 2004:209-211) (cf. 2.4.2).

Participants in this study experienced the mentor programme as an important factor that influences academic performance (Median = 7). Fifty-nine per cent of participants in this study experienced a positive effect, 39% experienced no effect, and only 2% experienced a negative effect resulting from the mentor programme on their academic performance.

Table 4.28: Mentor programme

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	2	2%
No effect	52	39%
Positive effect	79	59%

The mentor programme of the School of Medicine is part of the student academic development and support programme. The mentor and tutor programme in

combination with additional student academic development and support create an academic environment where problems affecting academic performance can be prevented or overcome.

The results from this section of the questionnaire indicate that students experience the institution and faculty environment at the University as a positive influence on academic performance. Factors that may have a positive or negative effect on academic performance, depending on the specific circumstances, are experienced as a positive influence for the majority of participants in this study.

4.3.4 Medical programme characteristics affecting academic performance in module MEF153

This section of the questionnaire dealt with the curriculum of the undergraduate medical programme in general. The type of curriculum, structure, lay-out, difficulty, assessment, academic support and resources for the curriculum were assessed from the student's perspective. The results are also discussed in response to the students' assessment and existing literature.

4.3.4.1 *Outcomes-based curriculum of this undergraduate medical programme*

Students experienced the curriculum as an important factor that influences academic performance (Median = 7). The majority of participants in this study (89%) felt that the outcomes-based curriculum, as implemented in the undergraduate medical programme, strongly contributes to academic performance. Only 5% experienced a negative effect on academic performance due to the curriculum, while 6% said the choice of curriculum did not affect their academic performance at all.

Table 4.29: Outcomes-based curriculum

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	7	5%
No effect	8	6%
Positive effect	118	89%

The effect of the curriculum on academic performance is often linked to other factors such as personal factors (cf. 2.3, 4.3.2), learning preferences (cf. 2.3.6), intellectual ability (cf. 2.3.5; 4.3.2.4) and academic environment (cf. 2.4.4; 4.3.3.6) (Harvey *et al.* 2006:41). Due to these factors, different students will experience the influence of the curriculum on academic performance differently. The variety of teaching methods and learning opportunities in module MEF153 enhance the academic experience. Different learning styles will benefit from different teaching opportunities at different times. This creates a curriculum where all students experience learning equally with reference on how well it fits their preferred learning style (Dent & Harden 2009:5; Glatthorn *et al*. 2006:357-366; Nelson & Kift 2005:225-226; Smith 2009:162) (cf. 2.3.6; 2.5.3).

How the curriculum is presented to students also influences their experience of the curriculum. The curriculum is described, documented and explained to the students in detail. The aim and outcomes of the curriculum are explained - as well as the methods employed to reach these outcomes. This effective communication of the curriculum will influence students' experience of the curriculum, which in turn will influence academic performance in a positive manner (Harden 2009a:14; UFS 2010:Online) (cf. 2.4.1).

4.3.4.2 *Admission criteria for this undergraduate medical programme*

Admission criteria aim to select students that will be able to achieve success in the specific academic programme. Admission to the undergraduate medical programme is primarily based on grade 11 and confirmed with grade 12 marks in secondary school (HPCSA 2010:Online). In secondary school, as for all learning

opportunities, academic excellence is influenced by teaching methods and learning preferences, academic environment and how it interacts with the personality and social characteristics of learners. The system of student selection for admission to the undergraduate medical programme has built into it a bias towards personal characteristics linked to academic excellence in secondary school. These unspecified personal characteristics may influence academic performance in the undergraduate medical programme.

The majority (72%) of participants were of the opinion that the admission criteria and process of selection to the undergraduate medical programme had a positive effect on their academic performance. Twelve per cent of participants felt that the admission criteria had a negative effect on their academic performance and 16% felt that it had no effect on their academic performance.

Table 4.30: Admission criteria

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	16	12%
No effect	21	16%
Positive effect	96	72%

4.3.4.3 *Programme organisation/lay-out*

Programme organisation scored a median value of 7 out of 10 for importance as a factor influencing academic performance. Seventy-five per cent of participants considered the organisation and lay-out of the undergraduate medical programme to have a positive effect on their academic performance. A negative effect on academic performance due to the organisation of the programme was experienced by 17% of participants, while 8% experienced no effect from the organisation of the programme on academic performance.

Table 4.31: Programme organisation

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	10	8%
No effect	23	17%
Positive effect	100	75%

The organisation and lay-out of an academic programme are influenced by factors such as available physical space (James 2007:1) (cf.2.5.4) and human resources (Henzi *et al.* 2007:636,644) (cf. 2.5.6). It will also impact on many other factors, including cost of studies (Dent & Harden 2009:5) (cf. 2.3.11), transport (cf. 2.3.12), time management (cf. 2.3.13), academic environment (cf. 2.4.4; 4.3.3.6) (Harvey *et al.* 2006:41), teaching methods (cf. 2.3.6) and learning opportunities (Henzi *et al.* 2007:636,642) (cf. 2.3.6; 2.5.7). The organisation and lay-out of any programme must consider all the mentioned factors that will influence the implementation of the programme and factors that will be influenced by the organisation of the programme. The current organisation and lay-out of the undergraduate medical programme creates conditions that influence the great majority of participants in this study positively (75%).

4.3.4.4 *Clarity of expectations of the undergraduate medical programme*

Clarity of the expectations of the undergraduate medical programme is an important factor that influences academic performance (Median = 7). The majority of participants in this study (83%) perceived that the expectations of the undergraduate medical programme are clear to the extent that it contributes positively to academic performance. Only 8% experienced a negative effect, while 9% experienced no effect on academic performance from the clarity of the expectations of the undergraduate medical programme.

Table 4.32: Clarity of expectations

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	10	8%
No effect	12	9%
Positive effect	110	83%

A lack of knowledge of the expectations of a programme increases the drop-out rate of students (Yorke & Longden 2008:2,7), while adequate knowledge and communication of expectations in a programme positively influence attitude, academic environment and ultimately academic success (Glatthorn *et al.* 2006:26; Harden 2009a:14) (cf. 2.4.1; 2.4.4). From the results one can conclude that communication of expectations in the undergraduate medical programme is satisfactory according to the requirements of students.

4.3.4.5 *Timetable of the undergraduate medical programme*

The timetable of undergraduate medical programme is considered an important factor that influences academic performance (Median = 8), with participants divided between students experiencing a positive effect (75%), negative effect (11%) and no effect (14%) on academic performance.

Table 4.33: Timetable of the programme

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	14	11%
No effect	19	14%
Positive effect	100	75%

The timetable of a programme influences the financial situation of certain students by limiting the number of hours available for students to work (James 2007:4-6); (cf. 2.3.11). Since the undergraduate medical programme is an expensive

programme, this might contribute negatively to academic performance experienced by certain students due to the schedule. The schedule must be taken into account for time management and ensuring sufficient time to study. The student academic development and support actions include training in time management (cf. 2.4.2). The exceptional positive response towards the schedule of the undergraduate medical programme implies a programme with sufficient time to allow a healthy balance between teaching, learning and a social life.

4.3.4.6 *Examination timetable*

Participants were satisfied with this important factor of examination timetables (Median = 8) that influenced academic performance. Eighty-one per cent of participants experienced a positive effect from the exam timetable on their academic performance, while only 5% experienced a negative effect and 14% experienced no effect from the exam timetable on academic performance.

Table 4.34: Examination timetable

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	6	5%
No effect	19	14%
Positive effect	108	81%

4.3.4.7 *Workload of the undergraduate medical programme*

The majority (56%) of participants experienced a negative effect on academic performance due to the workload of the undergraduate medical programme. Thirteen per cent experienced no effect and 31% experienced a positive effect on academic performance from the influence of the workload. The influence of the workload is considered an important influence on academic performance (Median = 7).

Table 4.35: Workload of the programme

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	74	56%
No effect	17	13%
Positive effect	42	31%

The increasingly under-prepared level of first-year students deliver them to universities with shortcomings in their academic and general skills - such as an inability to cope with the workload of academic programmes and ineffective study techniques (James 2007:4-6) (cf. 2.1). The workload will also influence attitude to the programme/module and learning techniques employed (James 2007:4-6) (cf. 2.3.2; 2.3.6).

4.3.4.8 *Assessment methods and administrative processes associated with assessment in the undergraduate medical programme*

Students' experience of the effect of assessment methods on academic performance in the undergraduate medical programme is divided between 41% of participants experiencing a positive effect, 25% a negative effect and 34% no effect. Assessment methods of the undergraduate medical programme are considered to have an important effect on academic performance (Median = 7).

Table 4.36: Assessment methods

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	33	25%
No effect	45	34%
Positive effect	55	41%

The majority of participants (59%) did not perceive any effect on academic performance from administrative processes associated with assessment, while 28% perceived a positive effect and 13% a negative effect.

Table 4.37: Administrative processes associated with assessment

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	17	13%
No effect	79	59%
Positive effect	37	28%

Assessment in an academic programme is developed in such a manner as to contribute to education and to evaluate whether outcomes are being met (Friedman Ben-David 2009:303; Harden 2009a:13) (cf. 2.5.9). Students' experience of assessment is linked to their language ability (Van Rensburg & Lamberti 2004:71-86) (cf. 2.3.7), attitude (Henzi *et al.* 2007:636,642) (cf. 2.3.2), and academic environment (Kahu *et al*. 2013:800; McAleer *et al.* 2009:64-65) (cf. 2.4.4). The before-mentioned factors are all present in the undergraduate medical programme and explain the variance in the experience of the effect of assessment on academic performance.

Communication with regard to assessment in the undergraduate medical programme forms part of the formal programme. Special sessions are included in the programme to inform students about assessment and allow them to gain experience in assessment methods used in the undergraduate medical programme to improve students' perspective of assessment.

4.3.4.9 *General skills module (MEA113)*

The general skills module (MEA113) aims to develop and improve general skills, as well as specific skills, to be successful in the undergraduate medical programme (cf. 2.3.5). This module includes student academic development activities that address time management, learning styles, learning methods, assessment

technique, information gathering, reading, writing and presentation skills (UFS 2010:Online). All of these skills are necessary for academic success (James 2007:7; Nelson & Kift 2005:229) (cf. 2.4.2). Constant efforts are made by the MEA113 module team to improve the module to address specific problem areas experienced by students. One expects this module to be important in improving academic performance throughout the undergraduate medical programme.

Participants in this study experienced module MEA113 as less important as a factor that influences academic performance (Median = 5). Only 32% of participants experienced a positive effect on academic performance from module MEA113; 46% experienced no effect; and 22% per cent a negative effect on academic performance from module MEA113.

Table 4.38: General skills module (MEA113)

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	29	22%
No effect	61	46%
Positive effect	43	32%

This finding contradicts the expected result. Further investigation into the General Skills module (MEA113) and students' perspective of this module are necessary to explain this result.

4.3.4.10 *Library and information services for the undergraduate medical programme*

Library and information services are considered important as a factor that influence academic performance (Median = 7). The majority of participants (79%) experienced a positive effect, 20% perceived no effect and only 1% a negative effect on academic performance from library and information services.

Table 4.39: Library and information services

Effect on academic performance	Frequency Number of students	Percentage
Negative effect	2	1%
No effect	26	20%
Positive effect	105	79%

The main academic resources in the undergraduate medical programme are prescribed text books and study guides supplied in printed and electronic format to students. Library and information services are becoming more important as a resource for academic information. It is also integral to the Blackboard Learning Management System. Certain assignments and assessments are designed to make use of library and information services. The library and information services also contribute to the academic environment. Information sessions on the use of the library and Blackboard Learning Management System form part of the undergraduate medical programme (UFS 2010:Online).

4.3.5 Characteristics of Module MEF153 affecting academic performance in module MEF153

This section of the questionnaire investigated detailed aspects of a module that are indicated in literature, and present in this module, that may have a possible effect on academic performance of students. Some aspects that were already discussed in the previous sections on the undergraduate medical programme were further investigated to determine its specific effect on academic performance in module MEF153. This was specifically done in an effort to identify factors that affect academic performance negatively in module MEF153, which might not be necessarily accurate for the entire undergraduate medical programme. Factors such as time management, expectations, workload, learning opportunities, language, library, information services, and assessment are further investigated as applicable to module MEF153. Other aspects, such as the position of module MEF153 within the undergraduate medical programme as well as the organisation

within module MEF153 are investigated to determine its possible perceived effect on academic performance.

4.3.5.1 *Positioning of module MEF153 within the medical programme*

This is presented in the first semester of the first year of the undergraduate medical programme (UFS 2010:Online). One should bear in mind that this module is presented to students, of which the majority were in grade 12 the preceding year (cf. 2.3.4; 4.3.1.1). The difficulty and volume of content, learning opportunities and assessment must be manageable by students in their first year of tertiary education (Nelson & Kift 2005:226) (cf. 2.3.6).

Participants in this study consider the position of module MEF153 within the undergraduate medical programme as an important factor to influence academic performance (Median = 8). Eighty-four per cent of participants felt that the current position of module MEF153 within the undergraduate medical programme had a positive effect on their academic performance. Only 3% of participants experienced a negative effect and 13% experienced no effect on academic performance caused by the position of module MEF153 within the undergraduate medical programme. The conclusion can be made that module MEF153 as a whole is experienced in a positive way in its current position within the undergraduate medical programme.

Table 4.40: Positioning of module MEF153 within the medical programme

Effect on academic performance	Frequency Number of students	Percent
Negative effect	4	3%
No effect	17	13%
Positive effect	112	84%

4.3.5.2 *Organisation/lay-out of module MEF153*

The same principles that apply to organisation and lay-out of the medical programme apply to module MEF153 (cf. 2.5). Organisation and lay-out of a module are influenced by factors such as physical (James 2007:1) (cf. 2.4.4.1) and human resources (Henzi *et al.* 2007:636,644) (cf. 2.5.6). It will also impact on many other factors, including, time management (2.3.13), teaching methods (cf. 2.5.7) and learning opportunities (Henzi *et al.* 2007:636,642) (cf.2.5.7). From this it is clear why the organisation and lay-out of module MEF153 were considered important factors that influence academic performance in the module MEF153 (Median = 7). This score is the same as for the organisation and lay-out of the undergraduate medical programme (cf. 4.3.4.3). The personal perspective of participants in this study on the effect of organisation on academic performance is even more positive for organisation in the module MEF153 than for the undergraduate medical programme.

Table 4.41: Organisation/lay-out of module MEF153

Effect on academic performance	Frequency Number of students	Percent
Negative effect	7	5%
No effect	11	8%
Positive effect	115	87%

Table 4.42: Comparison between the perceived effect on academic performance due to the organisational lay-out of the undergraduate medical programme and module MEF153

Effect on academic performance	Undergraduate medical programme	Module MEF153
Negative effect	8%	5%
No effect	17%	8%
Positive effect	75%	85%

The current organisation and lay-out of module MEF153 create conditions that positively influence the majority of participants in this study (87%). It is unlikely that the organisation and lay-out of module MEF153 form a major contribution to the poor academic performance in the module.

4.3.5.3 *Time schedules of module MEF153*

The expected time spent on module MEF153 includes lecture time that varies between 2 and 5 hours per week; tutorial sessions of 1 hour per week; self-directed learning of 2 to 5 hours a week; and time for assessment in module MEF153 (cf. 2.3.13; 2.5.7). Approximately equal time is allocated for each module in the first semester of the first year of the undergraduate medical programme (UFS 2010:Online).

The participant's perspective of the effect of time schedules of module MEF153 is almost similar to results for time schedules of the undergraduate medical programme. The overall positive experience of the effect of time schedules on academic performance is slightly decreased for module MEF153 if compared to the undergraduate medical programme.

Table 4.43: Comparison between the time schedules of the under-graduate medical programme and the module MEF153

Effect on academic performance	Undergraduate medical programme	Module MEF153
Negative effect	11%	11%
No effect	14%	21%
Positive effect	75%	68%

The participant's experience of time schedules within module MEF153 is less positive than for the undergraduate medical programme as a whole. A greater percentage (11%) of participants experienced a negative effect on academic performance due to the time schedules within module MEF153 when compared to the undergraduate medical programme.

4.3.5.4 *Outcomes and expectations of module MEF153*

Module outcomes described the goals to be reached for successful completion of a module with regard to the required knowledge and skills linked to the content of the module (cf. 2.5.4; 2.5.8). Clear outcomes create a perception of security with students and influence the academic environment positively (McAleer*et al*. 2009:64-65 (cf. 2.4.4). It also directs a student's choice of learning style to achieve the outcomes in the most effective way (Bandaranayake 2009:385; Gqweta 2012:214-215; Harden 2009a:13) (cf. 2.3.6). Furthermore, it influences the time allocated to this module by the student (Laidlaw *et al*. 2009:211-214) (cf. 2.5.4).

Expectations in a module include not only the expectations from module outcomes, but also aspects such as expectations on class attendance, behaviour and clothing attire during lectures and practicals and the way teaching and learning will be conducted (Laidlaw *et al.* 2009:211-214) (cf. 2.3.2; 4.3.4.4).

The results are presented as a comparison between the effects of module outcomes (module MEF153), expectations of the module MEF153, and expectations of the undergraduate medical programme on academic performance.

Table 4.44: Comparison between the effects of module outcomes (module MEF153), expectations of the module MEF153, and expectations of the undergraduate medical programme on academic performance

		Expectations of the undergraduate medical programme	Expectations of the module MEF153	Clarity of outcomes in module MEF153
Importance of factor (Median) (Effect on academic performance; 0 to 10) (0 = no effect; 10 = large effect)		7	7	8
Effect of factor on academic performance	**Negative**	8%	5%	7%
	No effect	9%	13%	8%
	Positive	83%	82%	85%

The majority of participants in this study experienced a positive effect on academic performance from the expectations of the undergraduate medical programme, from expectations of module MEF153 and from clarity of outcomes in module MEF153. Neither the expectations nor the clarity of outcomes in module MEF153 appears to contribute greatly to poor academic performance.

4.3.5.5 *Volume and difficulty of content of module MEF153*

The content of module MEF153 includes basic gross anatomy and introductory embryology. Both these topics contain great quantities of detailed and factual knowledge, as well as subject-specific language that is first introduced to students as part of this module. Not all content is explained and discussed in detail during contact sessions, and students are expected to complete their knowledge on certain areas of this module through student-directed learning (UFS 2010:Online) (cf. 2.5.7).

Participants in this study experienced the volume of the content (Median = 8) and the difficulty of the content (Median = 7) of module MEF153 as important factors that influence their academic performance. Participants were approximately equally distributed between students that experienced a positive effect (volume = 44.4%, difficulty = 37.9%), and students that experienced a negative effect (volume = 43.6%, difficulty = 40.2%) on academic performance due to the volume and difficulty of the content.

Table 4.45: Volume and difficulty of content of module MEF153

		Volume of content in module MEF153	Difficulty of content in module MEF153
Importance of factor (Median) (Effect on academic performance; 0 to 10) (0 = no effect; 10 = large effect)		8	7
Effect of factor on academic performance	**Negative**	44%	40%
	No effect	12%	22%
	Positive	44%	38%

Pre-existing perceptions that a module is difficult as a result of the content will negatively influence a students' attitude toward studies and personal motivation (Yorke & Longden 2008:7; Reason *et al.* 2006:164) (cf. 2.3.2, 2.3.3). This will contribute to poor academic performance in that module. Students with limited language proficiency will experience additional difficulty in mastering the content (San Miguel *et al*. 2013:21; Van Rensburg & Lamberti 2004:71-86) (cf. 2.3.7). The high percentage of participants in this study that experienced a negative effect on academic performance due to the high volume of content (44%) and difficulty of content (40%) in module MEF153 may contribute to the poor academic performance in this module.

4.3.5.6 *Workload of module MEF153*

If a module has a high content volume and scientific factual nature (such as in the case of module MEF153 (UFS 2010:Online)), it is necessary for students to engage with their studies on a continual basis to ensure academic success (Biggs & Tang 2007:31-32) (cf. 2.4.4). Participants experience the workload of module MEF153 as an important factor influencing their academic performance (Median = 8). The majority of participants in this study experienced a negative effect (54%) on their academic performance due to the workload of module MEF153. Twelve per cent experience no effect on academic performance and 34% experienced a positive effect on academic performance due to the workload of module MEF153.

Table 4.46: Workload of module MEF153

Effect on academic performance	Frequency Number of students	Percent
Negative effect	72	54%
No effect	16	12%
Positive effect	45	34%

Workload is the factor with the greatest negative effect on academic performance of all the factors investigated in this study. A negative effect on academic performance due to the workload in the undergraduate medical programme was reported by 56% of participants (cf. 4.3.4.7) and a negative effect was reported by 54% of participants due to the workload in module MEF153. Therefore, it can be stated that the perceived effect of workload in module MEF153 on academic performance will contribute to poor academic performance in this module.

4.3.5.7 *Number of contact sessions and duration of contact sessions in module MEF153*

Module MEF153 is presented through 16 formal two hour lectures per language group and an equal number of one hour tutorial sessions. This makes it the

module with the most contact sessions in the first semester of the first year of undergraduate medical programme (UFS 2010:Online) (cf. 2.5.5).

Both the number of contact sessions and the duration of contact sessions in module MEF153 are considered to have an important effect on academic performance (Median = 7). The majority of participants experienced a positive effect on academic performance from both the number of sessions (69%) and the duration of contact sessions (59%). Eleven per cent of participants experienced a negative effect on academic performance due to the number of sessions, and 21% of participants experienced a negative effect on academic performance due to the duration of sessions in module MEF153.

Table 4.47: Number of contact sessions and duration of contact sessions

Effect on academic performance	Number of sessions in module MEF153	Duration of sessions in module MEF153
Negative effect	11%	21%
No effect	20%	20%
Positive effect	69%	59%

Students place significant value on institutional involvement in their studies and benefit from learning opportunities that allocate contact with lecturers (Yorke & Longden 2008:2) (cf. 2.4.2). First-year students also prefer formal lectures as teaching method (Strydom *et al.* 1999:241) (cf. 2.5.7). Tutor sessions are experienced positively by students as a learning opportunity that improves academic performance (Bernal & Aragon 2004:209-211) (cf. 2.4.2). These statistics explain why the number and duration of contact sessions in module MEF153 have a positive effect on academic performance, even though it is the module with the greatest number of contact sessions.

4.3.5.8 *Required independent study for module MEF153*

The purpose of independent study is to add knowledge and insight to a module. Structured independent study is designed to stimulate student engagement in the

study topic (Harden 2009b:168-171; Nelson & Kift 2005:227). Students are expected to do a certain amount of independent study in all modules. Independent study in module MEF153 consists of structured and unstructured independent study. Each module in the first semester of the first year of the undergraduate medical programme is presented on separate weekdays. In module MEF153 2 to 3 hours of the day are used for formal contact sessions. The remainder of the day is intended for independent study (UFS 2010:Online) (cf.2.5.7).

The student's experience of independent study is influenced by the amount of independent study and the time available for independent study. Both the amount of independent study (Median = 7) and the time available for independent study (Median = 8) are considered important factors that influence academic performance in module MEF153. Results are summarised in the following table.

Table 4.48: Independent study

		Amount of independent study in module MEF153	Time available for independent study in module MEF153
Importance of factor (Median) **(Effect on academic performance; 0 to 10)** **(0 = no effect; 10 = large effect)**		7	8
Effect of factor on academic performance	**Negative**	44%	31%
	No effect	19%	15%
	Positive	37%	54%

Academic ability (James 2007:7; Smit 2012:369-371) (cf. 2.3.5) and learning style preference (Bandaranayake 2009:385; Gqweta 2012:214-215) (cf. 2.3.6) will influence a student's success with, and experience of independent study.

Language ability will also influence a student's success with, and experience of independent study (Van Rensburg & Lamberti 2004:71-86) (cf. 2.3.7). The organisation and clarity of expectations of independent study assignments will further influence a student's experience of independent study (Laidlaw *et al*. 2009:211-214) (cf. 2.5.4). The successful completion of independent study assignments and the experience of the activity will determine whether independent study has a positive or negative effect on academic performance (Harden 2009b:168-171).

4.3.5.9 *Language and module MEF153*

Aspects of language that may influence academic performance in module MEF153 include subject-specific language and terminology, language of instruction and language used in study material. All three these aspects of language were considered important as factors that influenced academic performance, with language of instruction the most important (Median = 8), then subject-specific language (Median = 7) and lastly language used in study material (Median = 6). Language of instruction was perceived to have a positive effect on academic performance by 71% of participants, while 5% perceived a negative effect and 24% perceived no effect on academic performance from language of instruction. Fifty-one per cent of participants experienced a positive effect, 20% a negative effect and 29% no effect on academic performance due to subject-specific language and terminology. Language used in textbooks and other study material had a positive effect on academic performance for only 16%, while 45% experience a negative effect on academic performance due to language used in study material.

Table 4.49: Language and module MEF153

		Subject specific language and terminology in module MEF153	Language of instruction in module MEF153	Language used in study material in module MEF153
Importance of factor (Median) (Effect on academic performance; 0 to 10) (0 = no effect; 10 = large effect)		7	8	6
Effect of factor on academic performance	**Negative**	20%	5%	45%
	No effect	29%	24%	39%
	Positive	51%	71%	16%

Language is a very important factor in that it influences academic performance. Language is used in verbal instruction and discussion, printed study material and in oral and written assessments (San Miguel *et al*. 2013:21; Van Rensburg & Lamberti 2004:71-86) (cf. 2.3.7).

Module MEF153 introduces students to Anatomy and Embryology in the first semester of the first year of the undergraduate medical programme. Both Anatomy and Embryology has an extensive subject-specific language (UFS 2010:Online). Students are required to master subject-specific language in order to be successful in this module.

Students are allowed to select between Afrikaans and English as language of instruction. All instruction, assessment and resources other than text books, are offered in both Afrikaans and English. Textbooks are only available in the language of publication. All textbooks in module MEF153 are in English (UFS 2010:Online) (cf. 4.3.1.2). Twenty-two per cent of participants have a home language other than Afrikaans or English (cf. 4.3.1.5). Students studying in a

language other than their home language tend to experience difficulty with language more often than students studying in their home language (Van Rensburg & Lamberti 2004:72). Difficulties with language can be overcome with academic development activities and practical sessions that have a limited need for language (Van Rensburg & Lamberti 2004:71-86). The major negative effect of language in module MEF153 was experienced in the language used in study material (45%).

4.3.5.10 *Library and information services available for module MEF153*

Textbooks are the main resource used in module MEF153. Other resources include a phase guide, MEF153-workbook and the Anatomy practical study unit. Blackboard Learning Management System is used to communicate with students and to make electronic resources available. Library and information services only provide an auxiliary support function to module MEF153 (UFS 2012:Online) (cf. 2.4.4).

Fifty-seven per cent of participants experienced the library and information services to have a positive effect on academic performance in module MEF153. Forty-two per cent experienced no effect on academic performance from the influence of the library and information services and 1% experienced a negative effect on academic performance.

Table 4.50: Library and information services in module MEF153

Effect on academic performance	Frequency Number of students	Percent
Negative effect	1	1%
No effect	56	42%
Positive effect	75	57%

The difference in results on the effect of the library and information services in the undergraduate medical programme (cf. 4.3.4.10) and in module MEF153 can be explained by the small contribution of the library and information services in

module MEF153. For the undergraduate medical programme as a whole, 79% experience a positive effect on academic performance, while for module MEF153, the positive effect is only 57%. Participants that experienced no effect on academic performance due to the library and information services is 20% for the undergraduate medical programme as a whole, and 42% for module MEF153.

Table 4.51: Comparison between the effects of library and information services in the undergraduate medical programme and in module MEF153

		Library and information services for the undergraduate medical programme	Library and information services for the module MEF153
Importance of factor (Median) (Effect on academic performance; 0 to 10) (0 = no effect; 10 = large effect)		7	7
Effect of factor on academic performance	**Negative**	1%	1%
	No effect	20%	42%
	Positive	79%	57%

4.3.5.11 *Class size in module MEF153*

MEF153 is lectured in separate Afrikaans and English sessions. The Afrikaans group investigated comprised a class of 64 students and the English group investigated consisted of a class of 69 students.

The academic performance of the majority of participants (55%) was not affected by the class size and 37% experienced a positive effect on academic performance due to class size.

Table 4.52: Class size in module MEF153

Effect on academic performance	Frequency Number of students	Percent
Negative effect	10	8%
No effect	73	55%
Positive effect	49	37%

Large student numbers per session limit the teaching methods and learning opportunities that can be used. Limited variation in teaching methods and learning opportunities can either have a positive effect or negative effect on academic performance depending on the learning preferences of a student (Brown & Edmunds 2009:73-78) (cf. 2.3.6; 2.5.7). Universities attempt to compensate for the drawbacks of large classes through the use of technology (Brown & Edmunds 2009:73-78; Strydom *et al.* 1999:241) (cf. 2.5.7). Lectures are the most commonly used teaching method for large classes (cf. 2.5.5). First-year students often perceive lectures as a more secure environment than other teaching situations (Strydom *et al.* 1999:241) (cf. 2.5.7).

4.3.5.12 *Teaching methods in module MEF153*

Teaching methods in module MEF153 include formal lectures and tutorials. Some tutorial sessions are used as practical sessions that make use of anatomy models and pre-dissected cadavers. Group activities are incorporated in lectures, tutorials and practical sessions (UFS 2012:Online) (cf. 2.5.7). The importance and perceived effect of different teaching methods on academic performance in module MEF153 were investigated and were reported in the following table.

Table 4.53: Teaching methods in module MEF153

		Formal lectures in module MEF153	Tutorial sessions in module MEF153	Practical sessions in module MEF153
Importance of factor (Median) (Effect on academic performance; 0 to 10) (0 = no effect; 10 = large effect)		8	7	8
Effect of factor on academic performance	**Negative**	7%	4%	7%
	No effect	9%	29%	10%
	Positive	84%	67%	83%

The majority of participants in this study experienced lectures, tutorials and practical sessions to have a positive effect on academic performance in module MEF153.

Formal lectures are mainly used as these represent an effective way to convey large volumes of basic knowledge to large groups of students. Effort is made by lecturers in the module MEF153 to limit negative effects of lectures as described in literature. The negative effect of lectures can be limited by preventing boredom and stimulating engagement of students (Brown & Edmunds 2009:73-78) (cf. 2.4.4; 2.5.7). The incorporation of short formative and summative assessments and group activities during lectures also helps to create a positive learning experience (Brown & Edmunds 2009:73-78; Strydom *et al.* 1999:241) (cf. 2.5.7). Formal lectures also create a sense of security with first-year students (Strydom *et al.* 1999:241) (cf. 2.5.7). Module MEF153 has the greatest number of lectures in the first semester of the undergraduate medical programme (UFS 2012:Online).

Tutorials (as used in the module MEF153) create an opportunity to address specific academic problems in small groups under the facilitation of senior

students (Ross & Cumming 2009:143-144) (cf. 2.5.5; 2.5.7). It creates a more relaxed and informal milieu. Some students learn more effectively in such an environment where their personality and learning preferences are better matched in tutorial sessions (Glatthorn *et al.* 2006:357-366; Rudland 2009:80) (cf. 2.3.6; 2.4.2; 2.5.7). Tutorial sessions are only effective in promoting academic performance if students prepare for sessions in advance and participate/engage during the session.

Practical sessions in module MEF153 aim to create a practical, three-dimensional component to anatomical and embryology knowledge. Practical sessions are especially beneficial to students with a hands-on, experimental, visual learning preference (Glatthorn *et al.* 2006:357-366) (cf. 2.3.6; 2.5.7). It is also to the advantage of students with limited language proficiency (San Miguel *et al.* 2013:21; Van Rensburg & Lamberti 2004:71-86) (cf. 2.3.7).

4.3.5.13 *Assessment in module MEF153*

Academic performance of students is measured by their marks achieved in assessment. Assessment in module MEF153 is designed to be an integral part of the curriculum and contribute to learning. Assessment must be linked to the outcomes of the module and assess knowledge, application of knowledge and skills (Geyser 2004b:90-95) (cf. 2.5.9). Assessments are regulated by policies and regulations of the module, programme, institution and external role players, such as professional boards (HPCSA 1999:Online; UFS 2012:Online) (cf. 2.5.9). Other factors that influence a student's experience of assessment include: communication within the institution, faculty, programme and module MEF153 (cf. 2.5.9; 4.3.4.8); expectations of the institution, programme and module (cf. 4.3.3.2); assessment methods (cf. 2.5.9; 4.3.4.8); administration of assessment (cf. 4.3.4.8); institutional support and preparation for assessment (cf. 2.4.2; 4.3.4.9); library and information services (cf. 2.4.4; 4.3.4.10); time management (cf. 2.3.13; 4.3.5.3); and, language proficiency (cf. 2.3.7; 4.3.5.9). On the other hand, assessment influence factors such as academic environment (cf. 2.4.4; 4.3.3.6) and time management (cf. 4.3.5.3).

Aspects of assessment in module MEF153 that may influence academic performance and student's perspective of the module MEF153 include: number of assessment opportunities; volume of content assessed; clarity of questions; method of assessment; time available for assessments; administrative processes associated with assessment; feedback after assessments; stress associated with assessment; effect of Integrated Medical Assessment (IMA). All these aspects of assessment in module MEF153 were investigated and the perceived effect on academic performance are summarised in Table 4.54 below.

Table 4.54: Aspects of assessment in module MEF153

Factor	Importance of factor (Median)	Effect of factor on academic performance		
		Negative	No effect	Positive
Number of assessment opportunities	7	45%	17%	38%
Volume of subject content included in a specific assessment opportunity	7	42%	20%	38%
Clarity of questions in assessments	8	27%	8%	65%
Written tests as method of assessment	8	11%	13%	76%
Time available for completion of assessments	7	20%	30%	50%
Administrative processes associated with assessment	5	5%	64%	31%
Feedback after assessments	7	12%	17%	71%
Stress associated with assessment of module MEF153	8	64%	14%	22%
Assessment of module MEF153 in Integrated Medical Assessment	7	35%	23%	42%

The number of assessment opportunities and the volume of subject content included in a specific assessment opportunity had similar results with 45% and 42% of participants experiencing a negative effect on academic performance, respectively, and 38% experiencing a positive effect for both factors. This compares well with the volume of content for the module MEF153 as a whole, as an aspect that influences academic performance with a 46% positive and 12% negative effect on academic performance (cf. 4.3.5.5).

Written assessment as method, is an important component of assessment in module MEF153 and very effective to assess the large volume of factual content (cf. 2.5.9). The clarity of questions and written tests are both experienced as a positive effect on academic performance by the majority of participants in this study (65% for clarity of questions and 76% for written assessments). A negative effect on academic performance was experienced by 27% for clarity of questions and 11% for written assessments.

Observations by the researcher noted that students were unable to complete assessments in module MEF153 within the specified time. In this study, 20% of participants experienced a negative effect on academic performance based on time available for assessment, while 50% of participants experienced a positive effect on academic performance based on time available for assessment. Time available for assessment influenced academic performance. Academic performance of students may create a false impression of their academic ability if insufficient time was available to complete assessments. The importance and effect of limited time during assessment must be further investigated.

The administrative processes associated with assessment in module MEF153 were considered the least important factor (Median = 5) to influence academic performance associated with assessment. The majority of participants in this study (64%) experienced no effect on academic performance; 31% a positive effect and only 5% a negative effect due to administrative processes associated with assessment. Similar results were found with regard to administrative processes in general (cf. 4.3.3.3). It also correlates with the results found in

paragraph 4.3.4.8 that measured the effect of administrative processes on academic performance in assessment in the undergraduate medical programme in general (cf. 4.3.4.8). Even though the majority of participants did not experience administrative processes to have a major effect on academic performance, it is reported that communication between the institution and students is an important component of administration that can influence students' academic success (Glatthorn *et al.* 2006:26; Harden 2009a:14) (cf. 2.4.1).

Well structured feedback after assessment contributes to learning (Geyser 2004b:90-95) (cf. 2.5.9). Feedback after assessments was perceived as the single most important factor associated with assessment in module MEF153 to have a positive effect (71%) on academic performance. This is proof that the feedback after assessments contributes to learning and have a positive effect on academic performance in module MEF153 (cf. 2.5.9).

Stress associated with assessment in module MEF153 was perceived as the factor with the greatest negative effect (64%) on academic performance of all the factors associated with assessment. The diverse nature of the first-year tertiary student population with varying degrees of skills and preparedness, combined with socio-economic challenges, and uncertainty towards their academic programme choice may contribute to stress associated with assessment (James 2007:6; Nelson & Kift 2005:226; Reason *et al.* 2006:149,167) (cf. 2.1). Student academic development and support activities and mentor programmes may positively influence exam preparation and stress management amongst first-year students (Bernal & Aragon 2004:209-211; Dent & Rennie 2009:378-379) (cf. 2.4.2).

Incorporated into the assessment of module MEF153 is Integrated Medical Assessment (IMA). This assesses and develops the integration and problem-solving skills of students (Geyser 2004b:90-95; Prideaux 2009:181-185). In IMA, module MEF153 is assessed together with module MEE153 (Tissues of the body) and a portion of module MEA113 (Physics component of this module) (UFS 2010:Online) (cf. 2.5.3). IMA creates the challenge of managing the entire content of three modules during a single assessment opportunity. Furthermore,

students need to integrate knowledge between different sessions of a module and between different modules to solve integrated problems (cf. 2.5.3; 2.5.9).

The effects of IMA on academic performance are experienced as a 35% negative, 42% positive, and 23% with no effect on academic performance in module MEF153. Students' experience of assessment may be linked to academic ability and academic and cognitive skills of students (Van Rensburg & Lamberti 2004:72) (cf. 2.3.2; 2.3.5). These differences between students may explain the range of experiences of participants with regard to IMA. Effective communication of expectations of assessment and development of cognitive and examination skills can influence academic performance positively with regard to assessment (Glatthorn *et al.* 2006:26; Harden 2009a:14; James 2007:7) (cf. 2.3.5; 2.4.1; 2.4.2).

4.4 CONCLUSION

All factors, except "personal interracial relations", investigated for their possible effect on academic performance, were perceived to have an effect of median = 5 or more on academic performance on a scale from 0 to 10 where 10 = most important. Furthermore, the positive, negative or no effect on academic performance of each factor was measured and reported for each participant using quantitative measurements. Except for nine factors, the majority of participants reported a positive effect on academic performance for factors investigated. The factors that reported a majority negative effect on academic performance included financial cost of studies; workload of the undergraduate medical programme; workload of module MEF153; load of independent study in module MEF153; difficulty of content in module MEF153; difficulty of language in resources used in module MEF153; number of assessment opportunities in module MEF153; volume of content assessed per assessment opportunity; and stress associated with assessment in module MEF153. These results show that the undergraduate medical programme and module MEF153 manage most factors in such a way that these factors contribute positively to academic performance for the majority of participants in this study. It also identifies areas that negatively influence the

academic performance of the majority of participants. Furthermore, it emphasises the diverse effect of each factor on academic performance between participants. This knowledge can be used to address problematic areas of the curriculum to improve academic performance. It can also be used to improve academic development and support activities to address shortcoming in skills among students.

The following chapter, Chapter 5, entitled ***Results and discussion of findings of the qualitative section of the questionnaire survey*** will report and discuss the qualitative results of this study. The qualitative results will be used to provide further insight into the quantitative results.

CHAPTER 5

RESULTS AND DISCUSSION OF FINDINGS OF THE QUALITATIVE SECTION OF THE QUESTIONNAIRE SURVEY

5.1 INTRODUCTION

In this chapter, the qualitative results and findings from the self-administered questionnaire will be discussed. The qualitative findings clarify and enhance quantitative findings. Qualitative data were gathered through open-ended questions included in the questionnaire. The findings for each question will be organised into themes and presented, followed by a discussion of the findings for each question, showing the connection with the quantitative results.

5.2 RESULTS, FINDINGS AND DISCUSSION OF RESPONSES TO THE QUALITATIVE SECTIONS OF THE QUESTIONNAIRE

The aim of these questions was to obtain more in-depth information regarding respondents' opinions and experiences with regard to certain aspects related to module MEF153 from a student's perspective. An exploratory perspective was used to obtain insight and a better understanding of the respondents' needs. The results, findings and discussion will be organised according to the open-ended questions as they appear in the questionnaire (questions 1-13).
The findings will be reported under themes and categories supported by quotes, given in italics and the numbered paragraph in brackets to give a reference for the quote. Responses that were not directly addressing the question asked were omitted from this discussion.

Two groups participated, namely an Afrikaans group and an English group. The group is indicated as E, if English, and A for Afrikaans. The number behind the E or A refers to the respondent that answered the question. (e.g. A1 refers to the Afrikaans group, respondent number 1). The number in each case will always

refer to the same respondent. Comments from the Afrikaans group were translated into English.

The following questions are discussed as part of the qualitative questions in the questionnaire. The most important elements of each section of the question are tabled and followed by a discussion on the total question.

5.2.1 Question 1

"To what extent do the **type of resources** e.g. textbooks, notes, museum models and lecture notes influence academic performance in module MEF153? Motivate your answer". Table 5.1 gives a schematic summary of the themes and categories for question 1.

Table 5.1: The extent to which the type of resources influence academic performance in module MEF153

THEMES	CATEGORIES and comments from the respondents
1. All resources combined	**Positive** • *Variety of resources accommodates "variety of learning styles*" [E1, E17, E20, E30, E37, E38, E56, E58, A5, A6, A15, A16, A25, A28, A48, A54, A55, A59] • Availability/"...*numerous resources available..."* [E3, E22, E23, E48, E53, E60, A28, A66] • use of numerous resources leads to a better knowledge and understanding [A16, A19, A21, A39, A47, A51, A56] • "*Getting practical examples*" [E4, E67] • Good reference [E5] • Explanatory and "...*clear and understandable*" [E7, E8, E16, E20, E21, E24, E25, E29, E31, E36, E43, E47, E48, E59, E64, E69, A62] • Complete/adequate [E10, E14, E22, E41, E51, E58, A8, A17] • "...*visualisation is very important...picture..."* [E33, E39, E52, A10, A13, A21, A23, A27, A29, A42, A48] • "...*assessed completely from these resources*" [E34]
	Negative • "...*so many different resources can be confusing..."* [E27, E57] • *"...work overload..."* [E2, E18] • Poor synchronisation between resources [A11, A20] • Resources based in the library is not available after hours [A36] • Differences in terminology between resources [A65]
	No effect • *"All the resources are the same to me"* [E68]

2. Textbooks	**Positive** • Good reference [E5, A4] • Explanatory [A1, A50]
	Negative • *"Textbook is so detailed - don't know how much / depth to which I must study"* [E45, E65, A9, A57] • Difficult to understand [E42, A12, A14, A18, A22, A26, A31, A33] • "...*verskil in die taal van onderrig en die taal van hulpmiddels..."* (...difference in the language of instruction and language of resources...) [A41, A45]
3. Study guides and workbook	**Negative** • "...*workbook doesn't have enough information"* [E13]
4. Lecture notes and summaries	**Positive** • Summary: "*Lecture notes... a summary...", "slide show is a summary"* [E28, E40, E42, E65, A2, A7, A9, A14, A26, A29, A49, A57, A58, A59]
	Negative • "...*notes do not give a clear picture..."* [E18]
5. Anatomy museum	**Positive** • *"...museum models... 3-dimensional visualisation*" [E5, E6, E9, E12, E15, E26, E30, E31, E32, E35, E41, E46, E49, E61, A1, A2, A4, A7, A14, A20, A24, A32, A44, A49, A57, A58, A63].
	Negative • *"...museum models and the museum isn't as easily accessible and is more time consuming"* [E11]

6. Practical sessions	**Positive** • "...*practical's...apply your knowledge*" [E28, E32, E50, A9, A64] • Remember better after practical [A22, A30, A40, A51, A52, A63]
	Negative • "...*sonder leiding... onduidelik oor die uitkomstes van sessies*" (...lack of guidance...outcomes for sessions are unclear) [A37]

Discussion

The types of resources discussed in table 5.1 have both positive and negative effects on academic performance. Eighteen respondents reported that a variety of resources cater for the different learning preferences of a modern-day diverse student population. Furthermore, the combined use of resources by a student increases the knowledge and understanding of the student. Differences in language style, presentation and explanation of content render certain books more useful to certain students. This may especially be true for students using resources in a language different from their mother tongue. Resources should be readily available in order to have a positive contribution to academic performance (cf. 2.4.4). High quality resources that are also a complete, detailed source of information can serve as a reference for enquiry.

The images, figures, CD-Rom's, videos and animations in resources enhance the visual impact of those resources. This is especially beneficial to visual learners and to the study of practical skills. Examples given in textbooks illustrate to students the application and importance of the content. The positive effect of resources are further strengthened if assessment is limited to resources used. This corresponds to the findings in the quantitative study (cf. 4.3.5.10). The use of multiple resources can create a work overload and confuse students, especially if any difference exists with regard to terminology used or factual content. Resources based in the Faculty library are only available during office hours. This

will hinder the learning processes of students after hours and negatively influence academic performance (cf. 4.3.5.10).

In combination with lectures, textbooks are the main resource for study purposes. Prescribed textbooks also serve as reference, creating both the depth and width of knowledge that should be mastered (UFS 2010:Online). When the detail (depth and extent of knowledge) in a textbook exceeds the expectations of the module, it creates a negative experience of the textbook. This is a common problem with introductory modules, such as module MEF153. This negative effect can be counteracted upon by well-defined outcomes. English textbooks can be difficult to understand to students with home languages other than English. Similar results were found in the quantitative study (cf. 4.3.1.5, 4.3.2.5, and 4.3.5.9) and par. 5.2.11 and 5.2.12 of the qualitative study.

The study guide provides supervision to the learning process, including all the regulations, rules and expectations. The workbook provides structure to the learning process. Students need to collect and organise content from different resources to reach the outcomes of the module (UFS 2010:Online) (cf. 4.3.5.10).

Lecture notes and summaries are intended as one of a combination of resources used by students. It gives an overview of the content by providing a condensed summary with varying degrees of detail of the content. Lecture notes are not intended as a single source to study from.

The anatomy museum is one of the resources available to students and should be used as one component of their study process. The anatomy museum provides dissected, three-dimensional visual samples of body parts.

The three-dimensional visualisation of anatomy is very important to create an understanding of the three-dimensional structure of the human body. It benefits visual learners (Dent & Harden 2009:5; Glatthorn *et al*. 2006:357-366; Nelson & Kift 2005:225-226; Smith 2009:162) (c.f. 2.3.6; 2.5.3). The museum and anatomy samples are used in independent study, group work and practical

demonstrations. These learning situations provide an alternative to formal lectures, which may benefit students that prefer those learning opportunities (Van Rensburg & Lamberti 2004:71-86; UFS 2012:Online) (cf. 2.3.6; 2.4.4; 2.5.7; 4.3.5.12).

Twenty-seven respondents stated that they benefit from the museum and museum samples. The anatomy museum is also listed as one of the factors with the greatest positive effect on academic performance (cf. 5.2.11). The museum and anatomy samples are only available during daily lecturing hours. This is further discussed in the next question (cf. 5.2.2) that specifically addresses the availability of resources. The anatomy museum is also listed as one of the factors that negatively influence academic performance (cf. 5.2.12).

Students' experience of practical sessions will be influenced by their preferred learning style, resources available and infrastructure available for practical session (Bandaranayake 2009:385; UFS 2010:Online) (cf. 2.3.7; 2.5.2; 2.5.7). Most practical sessions are in the format of a tutorial session under the guidance of a trained tutor that is a senior student. In par. 5.2.11 the positive effects of practical sessions are discussed further.

5.2.2 Question 2

"To what extent do the **availability of resources** e.g. textbooks, museum models and lecture notes influence academic performance in module MEF153? Motivate your answer". Table 5.2 gives a schematic summary of the themes and categories for question 2.

Table 5.2: The extent to which the availability of resources influence academic performance in module MEF153

THEMES	CATEGORIES and comments from the respondents
1. All resources combined	**Positive** • *"I can always get them when I need to"* [E5, E7, E10, E23, E32, E39, E44, E50, E52, E56, E60, E64, E66, A3, A7, A8, A10, A11, A17, A35, A38, A49, A54, A57, A59, A61, A62, A64, A65] • *"...it ensures that the student has the correct knowledge available to perform well"* [E22, E69, A18, A43, A44] • *"The availability of such resources improves our understanding and also our achievement"* [E26, E28, E29, E30, E35, E38, E47, E48, E51, E58, E62, E65, E68, E69, A21, A22, A23, A25, A29, A39, A40, A41, A42, A56, A63, A66]
	Negative • "...*there are a lot of resources to go through..."* [E20, A26] • *"...some people with no access to such resources..."* [E24] • "...*some contradict each other and it can confuse students*" [E65, A22, A25, A39] • *"...party mense het nie altyd toegang tot internet of geld om die lesings te druk nie"* (some people do not have internet access or money to print lecture notes) [A4] • Some resources are limited to use in the Faculty and not available to take home [A13] • Some resources are not available after hours [A34, A57]
2. Textbooks	**Positive** • "*always readily available* " [E13]
	Negative • Textbooks are expensive [A7, A37, A49]

3. Lecture notes and summaries	**Positive** • "*Lectures give a clearer explanations...than textbook that are difficult*" [E6, E18, E40] • "*Lecture notes are handed out to all and are enough*" [E10] • Lecture notes emphasize important aspects [A45]
	Negative • Notes not always available [A36, A55] • Some notes is of a poor standard [A37]
4. Anatomy museum	**Positive** • "*Anatomy museum is easily accessible*" [E9, E12].
	Negative • *"...museum closes at certain times"* [E47, A7, A14]
5. Skeletal study material	**Negative** • "*The only shortage I experienced was that of the bones*" [E4, A34]
6. Library	**Positive** • Easy access available [E12]
	Negative • "...*closes at certain time thus not enabling you to make use of them*" [E21, E47, A14]
7. Blackboard LMS	**Positive** • Information available on Blackboard LMS[A12, A58]

Discussion

Positive and negative effects are experienced from the availability of resources. Respondents feel resources are available to the extent they need these to influence academic performance positively. It serves as a detailed source of information and reference. Access to certain resources is limited as these resources are only available in limited quantities, expensive or only available during office hours in the Faculty. This requires effective planning and control

over the use of these resources and may negatively influence academic performance. Textbooks are considered a worthy source of information and are readily available in bookstores. The high cost of textbooks will limit the individual's ability to afford them. Library services aid in alleviating this problem. Lecture notes are a useful addition to the study process (cf. 5.2.1), yet some problems exist in regard to the availability and distribution of official lecture notes. Numerous unofficial and unpublished versions of lecture notes are available to students. These notes were created by previous students, and passed on to new generations of students. The content of these notes are not approved as correct and/or complete. These notes often form the main resource for study purposes.

The anatomy museum is readily accessible, but only from 8 am till 5 pm from Monday till Friday. This may negatively influence academic performance, because the museum is an important resource to obtain three-dimensional insights in anatomy (cf. 5.2.11). Another source for three-dimensional study of anatomy is sets of human skeletal bones. The available numbers of sets of bones are limited and some students need to share the use of these bones.

The library and study facilities in the Faculty of Health Sciences are only available from 8 am till 5 pm from Monday till Friday. This limits the access to study resources based in the library and Faculty (cf. 2.4.4). Many resources are made available on Blackboard LMS. Students have 24-hour access to Blackboard LMS from on-campus as well as off-campus (cf. 2.4.1). These responses correlate with results from the quantitative study (cf. 4.3.4.10; 4.3.5.10).

Overall, the resources required by students are available and efforts are made by Faculty to allow access to limited resources. With necessary planning and time management, resources should only have a positive effect on academic performance.

5.2.3 Question 3

"To what extent do the learning environments e.g. Lecture rooms and dissection hall influence academic performance in module MEF153? Motivate your answer". Table 5.3 gives a schematic summary of the themes and categories for question 3.

Table 5.3: The extent to which the learning environments influence academic performance in module MEF153

THEMES	CATEGORIES and comments from the respondents
1. All learning environments in general	**Positive** • *"...environment are conducive to learning"* [E1, E26, E29, E38, E44, E46, E50, E52, E54, E64, E65, A1, A2, A13, A36] • "...*lecture halls and dissection halls are spacious and no overcrowding occurs*" [E4, E27, E29, E48, A56] • "...*lecture halls are of good size. The lecturer can be heard properly..."* [E10, E13, E29, A8, A58] • "...*environment that is comfortable*..." [E30, E45, A7, A10, A56] • "...*academic atmosphere is created..."* [E11, E59, E69, A21, A33, A35, A40, A50] • Technology facilitate learning [E21, E29, E52] • Well-equipped [A4, A9, A12, A23, A59] • "*Silent, can concentrate, very good*" [E70, A31, A39, A59] • Good lay-out and in good condition [A9, A17, A26, A34, A64]
	Negative • "*Sound is quite a problem sometimes (then the lecturer speaks without a microphone)"* [E4, E28] • *"...they are too cold..."* [E7, E18, E19, A57]

	• *"...chairs are not comfortable enough to spend two hours listening..."* [E43, A9] • "...*large density of students in the class*" [E24] • Lecture rooms are to large [A49] • Environment is dirty [E49] • "...*eentonig en oninteressante omgewing..."* (boring and uninteresting environment) [A1]
	No effect • *"...you can pay attention in any environment"* [E8, E18] • "*Most studying is done at home*" [E12] • "...*learning is based on the person, not the environment*..." [E60, A5, A15, A27, A32, A39]
2. Dissection hall	**Positive** • "...*dissection hall one gets to understand more as you deal with the actual parts*" [E2, E3, E6, E16, E32, E46, A18, A48] • Dissection hall facilitate practical learning [E29, E37, E40, E41, A23, A49, A55, A56, A63, A65] • "...*provide me with an interactive way of learning anatomy*..." [E48, E69, A42, A43, A44]
	Negative • Not conducive to learning [E44] • Crowded [A20] • Non-academic discussions are disruptive [A37]
3. Library	**Negative** • Noisy [A12]

Discussion

The learning environment should make effective teaching and learning possible and contribute to the academic atmosphere (McAleer *et al.* 2009:64-65) (cf. 2.4.4). The overall perspective among respondents is that academic learning environments used for module MEF153 are conducive to learning and contribute

to an academic environment. These learning facilities are spacious and comfortable and equipped with all the necessary technology. The positive effect of the learning environment and academic atmosphere created by it is also reported in the quantitative study (cf. 4.3.3.6). Some respondents differed from the before-mentioned opinion and added that study venues are too cold, dirty and are not stimulating learning environments.

The dissection hall is perceived as an environment conducive to study that provides the opportunity to link theory and practice through practical dissection. One participant experienced the dissection hall as crowded due to large classes. In other questions discussed in this chapter the library is experienced to have a positive effect on academic performance (cf. 5.2.2; 5.2.11) but as a learning environment it is found not to be conducive to study due to noise levels.

5.2.4 Question 4

"To what extent do the teaching abilities (communication skills, language proficiency and use of technology) of lecturers in module MEF153 influence the students' academic performance in module MEF153? Motivate your answer". Table 5.4 gives a schematic summary of the themes and categories for question 4.

Table 5.4: The extent to which the teaching abilities of lecturers influence academic performance in module MEF153

THEMES	CATEGORIES and comments from the respondents
1. Language proficiency and communication skills	**No effect** • *"...as information is available to study & understand the module by yourself"* [E23, E68, A3]

	Positive • "…*explanations we receive during the lectures makes me understand the work much more clearer*" [E6] • "*Communication…it has been good thus positive effect*" [E10, E13, E31, A2, A21, A41, A57, A61, A62] • "…*lecturers speak clearly and we understand what they say*" [E20] • "*I was really fascinated by how they presented their story*" [E16] • "*Lecturers explain everything, speak clearly and answers any questions we may have*" [E28] • "…*language used is clear and simple*" [E34, E53] • "…as jy in jou eie taal onderrig word, sal jy beter verstaan en inneem" (receiving lectures in your mother tongue improves understanding and comprehension) [A5, A7, A9, A12, A23, A34, A40, A43, A55]
	Negative • "…lecturers' language proficiency affect negatively due to their Afrikaans tongue" [E7, E11, E12, E15, E22, E24, E32, E36, E37, E56, A25, A34] • "…*some lecturers do not make the whole content enjoyable and interesting to study*" [E18] • lecturers with poor communication abilities and poor explanatory skills [A39, A50]
2. Technology	**Positive** • "…*projectors, slides…during the lectures make me understand the work much more clearly*" [E6, A20, A38, A58]. • "…*illustrate many things and it makes it easier*" [E43, A2, A14, A64, A66]

	• "*PowerPoint slide shows are an amazing...*" [E48, A15, A37, A44, A64, A65] • Lectures on Blackboard LMS [A13] • Variety of technology used improves learning through addressing different learning preferences [A33]

Discussion

According to Biggs and Tang (2007:15) the teaching abilities of lecturers represent an important factor that influences academic performance. Participants in this study experienced the teaching abilities of lecturers to vary from one lecturer to the other, and also vary according to the learning situation. The experience of lecturers in module MEF153 is mainly positive. They are skilled lecturers, able to explain difficult concepts in an interesting and capturing manner, provide structure to the topic, use clear and understandable language, and use technology as an effective tool to enhance teaching and learning. Lectures provided in a language other than the home language of the lecturer have been found to create difficulties. Lecturers are less able to express themselves clearly in a second language. Errors in pronunciation also occur (cf. 2.3.7; 2.5.6).

5.2.5 Question 5

"To what extent do the personality types of lecturers in module MEF153 influence the students' academic performance in module MEF153? Motivate your answer". Table 5.5 gives a schematic summary of the themes and categories for question 5.

Table 5.5: The extent to which the personality types of lecturers influence academic performance in module MEF153

THEMES	CATEGORIES and comments from the respondents
1. Lecturer's personality	**Positive** • *"...if the lecturer has a good personality, students will relate much better to the lecturer and be more enthusiastic*" [E2, E3, E6, A11, A21] • "...*able to concentrate better when a lecturer appears calm"* [E4] • "*Lecturers...in a good mood; promoting learning and adding stories and jokes..."* [E10, E14, E24, E25, E43] • "...*lecturers are passionate and well educated, which rubs off on students*" [E11, E26, E35, E50, A17, A36, A37, A41] • "*Lecturers also exhibit a "human" quality which students associate positively with*" [E11, E53, A14] • "...*approachable..."* [E13, E27, E33, E46, A9, A17] • "*They are polite & interesting"* [E37, A13, A65] • "*Mrs Nel is a no-nonsense type of person, it makes me be more sure of my facts and study harder*" [E42] • Willing to help [A19, A37, A39, A41] • Accommodating [A40]
	Negative • "*I feel intimidated and as if some lecturers are unapproachable..."* [E1, E12] • *"...lecturers must be more motivational and show that they care..."* [E5]
	No effect • No effect[E7, E8, E23, A23, A31, A35, A43, A48, A61] • *"We don't have much personal contact time with lecturers..."* [E15, E17] • *"...motivation is more applicable to influence the students' performance"* [E22]

Discussion

The personality types and personality traits of lectures in module MEF153 are suited to the teaching demands of this module. Students experienced lecturers as passionate about their subject, educated, approachable, accommodating, humane, polite, calm, and willing to help students. These characteristics enable students to concentrate and engage in their studies with a positive effect on academic performance. Some students experienced lecturers as intimidating and unapproachable.

5.2.6 Question 6

"To what extent do the attitudes of lecturers towards the subject matter (in module MEF153) influence the students' academic performance in module MEF153? Motivate your answer". Table 5.6 gives a schematic summary of the themes and categories for question 6.

Table 5.6: The extent to which the lecturers' attitude towards the subject matter influence academic performance in module MEF153

THEMES	CATEGORIES and comments from the respondents
1. Lecturer's attitude	**Positive** • *"Lecturers seem motivated to teach...which makes me as a student more motivated and focused"* [E1, E12, E26, E40, A40, A41] • "*Lecturers who are positive towards the module inspire us to be positive*" [E4, E11, E13, E17, E18, E34, E38, E45, E52, A2, A7, A17, A28, A43, A65] • "...*lecturers demonstrate love of their module*..." [E7, E39, E42, E51, A64] • "...*lecturers are enthusiastic about their work*" [E10, E29, E33, E70, E1, A10, A18, A36, A59] • "...*are passionate towards the subject they will tend to*

	explain more and make sure students understand" [E14, E16, E37, E46, E47, E50, A9, A20, A21, A30, A61]
	No effect • No effect[E20, E68]

Discussion

The attitude of lecturers towards the subject matter was experienced to have a positive effect on teaching and learning with a positive effect on academic performance of students. Students described the lecturer's attitude as positive, passionate, enthusiastic, motivated and as love towards the module. As reported by Glatthorn *et al*. (2006:25) and Hendrich and Scheepers (2004:260,261) this perceived attitude of lecturers causes students to be motivated and inspired to be successful in a module (cf. 2.3.2; 2.5.2).

5.2.7 Question 7

"To what extent does the lecturers' involvement/relationship with students influence the academic performance of students in module MEF153? Motivate your answer". Table 5.7 gives a schematic summary of the themes and categories for question 7.

Table 5.7: The extent to which the lecturers' involvement/relationship with students influence academic performance in module MEF153

THEMES	CATEGORIES and comments from the respondents
1. Lecturer's relationship with students	**Positive** • *"...they have good relationships, they show care and support"* [E7] • "...*open relationship - one could always just go to their office freely"* [E16, E17, E21, E22, E29, E33, E47, E53, A1, A2, A9, A13, A30, A31, A40, A53] • "...*enhances communication and understanding for me*" [E19] • "...*enables lecturers to give additional support/encouragement to students*" [E24, E26, E27, E32] • *"...if a lecturer motivates the students they will be driven to do well*" [E30, E40, A24] • "...*makes us more comfortable*" [E39, E47, A7, A22] • "...*as hulle (dosente) vir jou intrek by die vak en betrokke is, met die klas se bespreking is dit baie positief*" (It has a positive effect when lecturers are concerned with students and involve the student with the academic subject and class discussions) [A10, A17] • Improves the learning process and student involvement [A11, A18] • Lecturers are available to help students [A12, A43, A64, A65] • Lecturer with a good relationship with students knows their strengths and weaknesses and adapt teach according to that [A51]

	Negative • "...*they (lecturers) are not involved enough in students' problems with the module"* [E1, A20, A41] • *"There is not much of involvement between students and lecturers and this influences academic performance very negatively"* [E5, E11, E20]
	No effect • *"The lecturers are here to lecture us - not to be our friends"* [E8, E18, A23] • *"MEF appears to be a "study subject"; once something has been explained it is up to us to study the work"* [E10] • *"...students are not in contact much with lecturers apart from during class"* [E12, E28, E31, E41, E42, A26, A49, A50] • *"...social life and teaching life are two separate hemispheres"* [E14, E52] • *"There are tutors & mentors to help in a personal context"* [E23] • No effect [A15, A55]

Discussion

Interaction between lecturers and students varies greatly. This is linked to personality types of lecturers and students and the student's needs. This interaction should be limited to a professional involvement centred on teaching and learning. Optimal involvement between a lecturer and students is experienced by students as open, caring, and comfortable. This leads to greater motivation and engagement in studies. Explanations of content and additional academic aid are also accepted more easily (Yorke & Longden 2008:4) (cf. 2.4.2). Institutional involvement are also reported as a positive experience in the quantitative study (cf. 4.3.3.4)

5.2.8 Question 8

"To what extent does the availability of lecturers for consultation in module MEF153 influence the academic performance of students in module MEF153? Motivate your answer". Table 5.8 gives a schematic summary of the themes and categories for question 8.

Table 5.8: The extent to which the availability of lecturers for consultation influence academic performance in module MEF153

THEMES	CATEGORIES and comments from the respondents
1. Availability of lecturers	**Positive** • *"...they are always available should you have a question"* [E11, E13, E16, E20, E26, E39, E40, E42, E43, E47, E53, E65, E70, A7, A9, A10, A11, A12, A19, A20, A21, A28, A31, A37, A39, A40, A42, A47, A53, A61, A64, A65] • "...*when we didn't really understand a day's work in class..."* [E29, E37, E38, E41] • "...*makes the module more understandable..."* [E32, E50] • "*Further consultation allows for the clarification of the finer details*" [E45, E62, A1, A2, A14, A23, A66]
	Negative • "...*available but it is not easy to approach them*" [E5, A7, A26] • Lecturers are always busy/not available[A41, A49]
	No effect • *"...textbooks are sufficient..."* [E25, A3] • Tutors or mentors can help, and lecturer not needed for consultation [A18] • *"I haven't really needed much consultation"* [E28, E64, A13, A15, A34]

	• Problems/questions can be solved during lecture time [A56] • No effect [E68, A38]

Discussion

The majority of respondents experienced lecturers to be available. Three respondents felt that lecturers were unapproachable, even though they were available. If lecturers are available for consultations by students, it has a positive effect on academic atmosphere and academic performance. Consultations with lecturers allow clarification of problematic content and module organisation (McAleer*et.al.* 2009:64-65).

5.2.9 Question 9

"Do lecturers in module MEF153 act as role models, to such an extent that it influences the academic performance of students in module MEF153? Motivate your answer". Table 5.9 gives a schematic summary of the themes and categories for question 9.

Table 5.9: Lecturers as role models - influence on academic performance in module MEF153

THEMES	CATEGORIES and comments from the respondents
1. Lecturers as role models	**Positive effect** • *"Lecturers are very good role models...depend on the individual whether this will motivate them to succeed in MEF153"* [E2, A34, A35] • "...*creates a passion for the subject because they love their work*" [E3, E4, E11, E30, E40, E42, A3, A4, A5, A6, A24, A44] • "*They motivate us to study and understand the work"* [E6, E44, E46, A13, A16, A51, A63]

	• "...*they show us the value of their knowledge and help us to take the module seriously*" [E12, E14, E17, E19, E21, E24, E41, E42, E45, E51, E65, A1, A7, A10, A12, A14, A19, A23, A38, A39, A57, A64, A65, A66] • "...*because they are confident in their work...we also want to be as confident*" [A13, E16] • "...*nice to see the "human" side of lecturers*" [E15, A17, A31] • "...*they are doctors or other professional which we aspire to be*" [E20, E27, E38, E50, E66, A2, A48, A61] • "...*positive attitudes & passion for their fields which motivates you*" [E23, E28, E29, E47, E51, A21, A29, A30, A40, A42, A49, A53, A54] • *"...(they) take their work seriously which makes students to also take it seriously*" [E32, E69, A8, A9, A22, A33, A41, A45, A52, A56] • Communicate ethical conduct through example [E36] • "...*they are very pleasant people that make me want to learn more*" [E48] • "*Do feel a sense of you owe it to them to do well. Since they put so much effort into us*" [E52] • "...*it's fun in class thus motivates us to learn*" [E70]
	Negative effect • "...*certain lecturers do not have very inviting and positive attitudes*" [E49] • Coffee breaks imply that lecturers prefer to socialise and not to work [A47]
	No effect • *"No...they only teach us the work"* [E8] • *"No, the lecturers are great...but they do not affect the way in which I study"* [E10, E25, E31, E39, E54, E64, A55]

	• Do not know the lecturers well enough to see them as role models [A18, A20, A27, A59, A62] • No effect [E22, E68, A11, A28]

Discussion

Lecturers in module MEF153 are viewed as worthy role models by the majority of respondents. The effect the lecturers have on students as role models are to motivate students, show the value and application of knowledge, create a passion for the subject, and develop ethical principles through example. Students aspire to be like their role models. Lecturers set the example to be professional, compassionate, confident, yet humane.

5.2.10 Question 10

"List any additional factors that have a large impact on your academic performance". Only factors other than those evaluated in either the quantitative or qualitative components of this study are listed. Table 5.10 gives a schematic summary of the themes and categories for question 10.

Table 5.10: Additional factors that have a large impact on students' performance

THEMES	CATEGORIES and comments from the respondents
1. Personal, social and cultural factors	• Religion [E2, E24, E30, E35, A59] • Intimidation [E3] • Competition amongst students [E5, A11, A29] • "Motivation from Dr X that I can do it, it wasn't impossible" [E16, E62] • Proper diet [E23, A7] • History of students [E32] • Culture [E35] • Involvement in activities other than studies [E38, E39,

	E40, A4, A6, A32, A41, A47] • Family [E50, E64, A1, A2, A6, A23, A24, A51] • Personal health [E52, E64, A41] • Being away from home [E40, E65, A49] • Support group [A14, A17, A29, A33, A59] • To adapt to university, adult life and responsibilities [A13, A15]

Discussion

All factors listed in table 5.10 refer to personal, social and cultural factors as part of student life. Respondents were asked to list additional factors that greatly influence their academic performance, without any comments. Factors that stood out above the rest were religion, personal health, competition amongst students, and the effect of activities other than their studies, including social, cultural and sports activities. The difficulty to adapt from a home-based school environment to a university hostel or private housing where the student is required to take full responsibility is also a significant factor. The importance and need for support from family and friends in these circumstances also stood out. This study focussed on factors within the curriculum that affect academic performance and these factors, mentioned above, were not further investigated.

5.2.11 Question 11

"List the five most important factors that affect your academic performance **positively** in module MEF153". Table 5.11 gives a schematic summary of the themes and categories for question 11.

Table 5.11: Most important factors that affect <u>academic performance positively</u> in module MEF153

THEMES	CATEGORIES and comments from the respondents
1. Personal factors	• Good time management/time table[E2, E7, E8, E10, E17, E22, E29, E36, E37, E38, E49, E52, E60, E66, E69, A2, A18, A19, A26, A28, A30, A31, A34, A35, A38, A41, A43, A45, A54, A55, A56, A59, A61, A66] • Positive attitude [E2, E28, E38, E45, E52, E60, E65, A16, A19, A24, A30, A31, A35, A39, A41, A51, A61] • Social support [E5, E11, E12, E23, E28, E29, E30, E31, E39, E40, E45, E50, E62, E68, E70, A1, A2, A4, A6, A19, A20, A23, A24, A25, A28, A39, A45, A53, A57, A62] • Competition [E5, E54, E60, A11] • Motivation [E7, E11, E12, E17, E22, E23, E25, E31, E38, E54, E59, E60, E62, E64, E67, A5, A9, A13, A15, A22, A29, A31, A34, A45, A47, A52, A53] • Personality [E7, A30, A41, A49] • Pressure to perform [E11] • Intelligence and academic ability [E12, E23, E31, E54, E64, A16, A21, A23, A30, A31, A41] • Learning style [E17, E29, E49, E54, E64, A21, A47, A63, A66] • Belief system [E30] • Sleep [E49, A21, A23, A26, A34] • Balanced diet [A26] • Finances [A23] • Balanced lifestyle [A26] • Interest in study content [A33, A36, A37, A49, A52, A59, A66] • Private housing [A39] • Transport [A39]

2. Academic environment	• Good relationship with lecturer [E2, E4] • Clarity of what is expected. [E2, E14, E26, E37, E66, A9, A11, A13, A17, A18, A28, A30, A40, A41, A49, A56] • Lecturer's involvement and availability [E8, E13. E14, E15, E16, E22, E24, E26, E27, E29, E31, E32, E34, E35, E40, E42, E47, E48, E50, E53, E59, E60, E61, E63, E66, E67, A4, A5, A6, A7, A10, A11, A12, A13, A15, A17, A19, A20, A21, A22, A23, A27, A28, A29, A32, A33, A35, A36, A40, A44, A49, A52, A53, A54, A55, A57, A62, A63, A64] • Language proficiency and language of instruction [E17, E26, E45, E48, E64, A53] • Academic atmosphere [E20, A11, A13, A16, A25, A26, A32, A34, A56]
3. Physical environment	• Good environment [E8, E10, E12, E35, E45, E69, A6, A14, A15, A16, A33, A48, A53, A56, A63] • Anatomy museum [E15, E21, E32, E61, A1, A7, A12, A15, A44] • Residence [E17] • Library [A9, A15, A38, A51]
4. Formal contact sessions	• Tutor programme [E1, E3, E4, E8, E14, E15, E21, E24, E28, E30, E32, E33, E39, E41, E42, E44, E46, E49, E51, E53, E68, A4, A10, A14, A20, A22, A25, A32, A43, A45, A51, A53, A55, A58, A62, A66] • Lecture sessions [E1, E5, E10, E13, E16, E20, E26, E28, E36, E39, E41, E44, E50, E53, E69, E70, A1, A3, A8, A17, A18, A20, A22, A25, A29, A35, A37, A54, A59, A66] • Practical in the dissection hall [E3, E4, E13, E14, E19, E21, E27, E30, E31, E32, E39, E42, E45, E46, E50, E51, E59, E61, E62, E65, A1, A2, A3, A7, A8, A9, A10, A11, A12, A14, A22, A24, A27, A29, A32, A36, A37, A40, A43, A44, A62, A63] • Small classes [E10]

	• Assessment [E44, E46, E62, A1, A2, A13]
5. Study material	• Lecture notes [E1, E4,E13, E15, E21, E22, E24, E27, E28, E29, E36, E37, E38, E40, E41, E42, E46, E47, E51, E61, E63, E65, A6, A7, A8, A9, A10, A11, A18, A20, A22, A24, A25, A27, A33, A37, A40, A43, A45, A48, A49, A53, A54, A55, A58, A64] • Available resources [E2, E3, E5, E10, E11, E16, E20, E23, E26, E27, E28, E32, E35, E40, E47, E53, E61, E62, E67, E68, A3, A5, A16, A17, A19, A28, A29, A36, A39, A53, A59, A63] • Layout of the notes [E4] • Textbooks [E13, E14, E15, E21, E25, E37, E41, E51, E52, E61, E65, A1, A3, A14, A18, A27, A35, A37, A48] • Blackboard [E59] • Difficulty of subject [A57]
6. Teaching methods	• Use of pictures [E3, E50, E52, E69, A1, A2, A8, A14, A44, A62] • Independent study [E44, A3, A20, A22] • Preparation for formal sessions [E44, A24]
7. Academic support	• Mentoring [E3, E33, A51, A55, A63]

Discussion

Respondents were asked to list five factors with the greatest positive influence on their academic performance, without making any comments. The list included factors from all aspects of higher education, from personal factors to the physical environment, teaching and learning methods, preferences and student support. It is interesting to note that almost all the factors listed here as important factors that positively influence academic performance are also listed in question 12 (cf. 5.2.12) as factors with a great negative influence on academic performance. This can be explained by observing that various students experience the effect of the same factor differently. A factor that has a positive effect on one student may

have a negative effect on another. This phenomenon is based on the diverse nature of the student population. Students differ in culture, language, gender, socio-economic background, general and study specific skills, preparedness for university, cognitive abilities and student preferences (Ackerman *et al.* 2013:911-913James 2007:6; Nelson & Kift 2005:226). Students are affected differently by individual, organisational, environmental, and academic programme factors (James 2007:2; Krumrei-Mancuso *et al*. 2013:248-253; Reason *et al.* 2006:149,167; Yates 2012:46-49), which include teaching skills, learning content, physical environment, student support, and assessment (McAleer *et al*. 2009:64-65).

Certain factors are more prominent than others as illustrated in table 5.11. One should build on the strengths of these factors and not exclude the minor factors.

5.2.12 Question 12

"List the five most important factors that affect your academic performance **negatively** in module MEF153". Table 5.12 gives a schematic summary of the themes and categories for question 12.

Table 5.12: Most important factors that affect academic performance negatively in module MEF153

THEMES	CATEGORIES and comments from the respondents
1. Personal factors	• Poor time management/time table[E2, E3, E10, E12, E13, E16, E17, E21, E22, E23, E26, E27, E34, E39, E40, E45, E49, E54, E59, E61, E62, E64, E65, E67, E69, A3, A4, A5, A6, A9, A12, A16, A18, A19, A21, A22, A26, A27, A29, A30, A31, A35, A36, A37, A38, A39, A41, A45, A51, A52, A53, A55, A56, A57, A61, A62] • Negative attitude [E2, E22, E28, E44, E52, A9, A39, A61] • Stress [E3, E11, E16, E21, E23, E40, E52, E64, A6, A18, A23, A43, A47]

	• Social problems and social life [E10, E11, E13, E29, E35, E39, E44, E50, E64, A6, A13, A15, A16, A18, A19, A20, A21, A22, A23, A26, A27, A32, A34, A35, A37, A43, A55, A66] • Competition [E44, E60, E62, A9, A29, A33] • Motivation [E52, E60, A1, A15, A18, A20, A27, A61] • Pressure to perform [E11, A9, A27, A29, A54] • Learning style [E12, E28, A21, A22, A23, A31, A37] • Adapting to university [E24] • Away from home [E24, A13] • Sleep deprivation[E36, A26, A29, A31, A34] • Finances [E51] • Health [E52, A30, A39, A41] • Private housing [A33, E35, A16] • Transport [A33, E35, E54, E66, A55] • Intelligence [A39] • Personality [A43]
2. Academic environment	• Lecturers not involved with student learning [E5, E9, E11, A28, A39] • Unclear expectations and outcomes [E2, E13, E20, E21, E22, E25, E34, E37, E41, E45, E60, A31, A37, A48, A50, A56, A66] • Dislike lecturer [E2] • Language proficiency and language of instruction [E47, A14, A30, A32, A41, A44, A54]
3. Physical environment	• Bad study environment [E49, E67, A52] • Anatomy museum (limited access) [E48, A14] • Residence activities [E15, E23, E24, E39, E40, E49, E52, E61, E65, E69, A25, A26, A30, A32, A36, A41, A44, A52] • Noise in study venues [E29, A4, A34]

4. Formal contact sessions	• Tutor programme [E29, E51, E66, A11] • Boring lectures [E9, E11, E29, E37, E59, E70, A36, A62] • Lectures too long [E10, E15, E21, E38, E42, E66, A12, A14, A24, A2, A49] • Not enough time for contact sessions [E27, E31, E32, E38, E68, A20, A33, A34, A48, A50, A56] • Practical in the dissection hall [E63, A49, A58] • Problematic assessment system [E47, E13, E14, E19, E23, E24, E33, E38, E40, E45, A2, A6, A11, A25, A34, A56, A57] • Limited assessment opportunities [E8, E14, E27, E33, E45, E46, E63, A1, A2, A5, A50, A54, A57]
5. Content	• High work load [E3, E9, E10, E12, E13, E14, E19, E20, E24, E25, E26, E29, E31, E32, E34, E37, E38, E40, E41, E42, E45, E50, E54, E61, E62, E63, E65, E66, E67, E68, A1, A3, A7, A9, A12, A14, A17, A21, A23, A24, A25, A29, A44, A45, A47, A48, A52, A53, A54, A55, A56, A59, A62, A64] • Difficult scientific language [E3, E17, E36, E41, E68, A8, A10, A14, A17, A22, A24, A25, A32, A45, A59, A64] • Difficult content [E17, E28, E39, E46, E50, E69, A7, A13, A17, A18, A33, A45, A66] • Content not interesting [A39, A54, A62, A66]
6. Study material	• Workbook [E17] • Lecture notes [E22, E37, E66, A17, A28] • Lack of resources [E2] • Textbooks [E21, E30, A28, A44, A49] • Language of study material [A1, A2, A9, A10, A12, A14, A22, A40, A48]

7. Teaching methods	• Lack of feedback on assignments, outcomes, assessment [E4] • Independent study [E17, E23, E31, E32]
8. Academic support	• Mentoring [E51]

Discussion

The important conclusion that can be made from question 11 and 12 is that a factor that has a positive effect on one student may have a negative effect on another. One should be wary of generalising as it will always exclude certain individuals. A better way to address these differences is by developing a system that accommodates as many of these varied factors as possible.

5.2.13 Question 13

"If it were up to you to improve academic performance of students in module MEF153, what changes would you suggest with reference to the curriculum or module MEF153?" Table 5.13 gives a schematic summary of the themes and categories for question 13.

Table 5.13: Suggested improvements to module MEF153

THEMES	CATEGORIES and comments from the respondents
1. General remarks	• Clear expectations and outcomes [E13, E25, E45, A3, A31, A34, A56] • Reduce workload [E1, E24, E49, E53, E62, E65]
2. Module lay-out and time schedules	• Increase length of time for module [E1, E27, A12] • Reorganise content [E22, E61, A7, A11, A20, A22, A32, A37, A48, A49] • Daily/more tutor sessions [E4, E23, E32, E61, A18, A21, A29] • Organise lectures in same order as textbook [E21] • Increase time for lectures [E7, E10, E12, E14, E17, A29, A31, E32, E54, A24] • More, but shorter sessions [E38, E49, E53, A9, A25, A34, A50, A52, A56, A59] • More practical sessions [E3, E15,E17, E42, E51, A8, A8, A10, A18, A24, A37, A47, A53] • Dissection sessions directly after lectures [E4] • Dissection and lectures on separate days [E11, E63, A13] • More or longer dissection sessions [E16, E29] • Revision sessions [E36, A57] • More time for independent study [E23, 35] • Less independent study [E17] • More consulting times with lecturers [A36]
3. Lecturers and tutors	• Lecturers more involved with student learning [E5] • Improve language proficiency of lecturers [E11] • Improve quality of tutors [E13, A15, A29]
4. Study guides and study material	• Improve lecture notes [E25, E37, E41, E50, A3, A38, A41, A55] • Better Afrikaans resources [A14, A30, A31, A39, A41, A45] • Change to better textbook [E26, E30, E42, E47, A3, A55]

	• Make more use of textbooks and other study material [E15, E22, E48, E66, A11, A33, A50]
5. Teaching methods	• Make use of more three-dimensional models during lectures [E68] • Make learning more visual [E3, A8, A52] • Make learning more interactive [A17] • More clinical exposure [A21, A22, A66] • Better explanations [A19, A44, A51] • Feedback on outcomes and directed learning [E10, A58]
6. Assessment	• Increase assessment opportunities [E2, E5, E6, E7, E14, E19, E27, E33, E40, E46, E51, E63, A1, A2, A5, A12, A16, A27, A50, A54, A57, A59, A62] • Increase variety of question formats in assessments [E13, E14, E53, E70, A6, A56] • Test preparation [A6, A35, A38, A41, A50, A57]

Discussion

In this question, participants were asked to make recommendations to improve module MEF153. Recommended improvements to module MEF153 include changes to general aspects on the organisation of the module, module lay-out, time schedules, skills of lecturers and tutors, study guides, study material, teaching methods, and assessment. The majority of recommendations have the effect of reducing the workload. This is achieved by decreasing the volume of work, or by changing the lay-out and organisation of content, learning opportunities and assessment to ease the learning process. Changes to learning material are also recommended to decrease the input needed from students when studying from these resources. Recommended changes to assessment in module MEF153 will create additional changes for students to reach the expected outcomes. The recommended volume of work assessed per assessment opportunity is also decreased. Recommendations made to improve learning opportunities have either the effect of decreasing the volume of work per session or making learning more interesting.

From the responses, two observations can be made. Firstly, the factors mentioned by the respondents are the factors that they, as students, are dissatisfied with. Secondly, the recommendations made, provide insight into the curriculum and learning experience preferred by students. This information can provide direction for any intended amendments to the curriculum. It must be kept in mind that these responses are responses made by students, and must be used in combination with inputs from higher education experts and study subject specialists.

5.3. CONCLUSION

In this chapter, the qualitative results and findings from the self-administered questionnaire were reported and discussed. The qualitative findings provided insight in quantitative results obtained from the questionnaire. It also provided the opportunity to identify factors that influence academic performance not investigated in the quantitative component of this study. The chapter concluded with suggestions for improvement of module MEF153 made by the participants in this study.

In the next chapter, Chapter 6, entitled ***Conclusion, recommendations and limitations of the study,*** the conclusions made from this study will be discussed; recommendations to improve the academic performance of students in module MEF153 will be made; and limitations of this study will be acknowledged.

CHAPTER 6
CONCLUSION, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

6.1 INTRODUCTION

In the previous chapter, Chapter 5, the results and the findings of the qualitative data of the questionnaire were discussed. This included the students perspective on how they experienced personal factors affecting academic performance, the institutional or faculty characteristics affecting academic performance and the medical programme characteristics affecting academic performance in module MEF153. This final chapter will discuss the conclusions that were reached during the various stages of the study, highlights and challenges of the main findings, findings of the questionnaire, recommendations, limitations of the study and a final concluding remark.

In this study, an investigation was done by the researcher to identify factors contributing to the poor academic performance of students in module MEF153 (Structure and development of the body) of the undergraduate medical programme. The aim was to improve academic performance in module MEF153 without loss in academic standards. Results from this study may be used for the development and improvement of student support initiatives that address general and specific skills needed for academic success and in particular in the anatomy and embryology module. The research question "*Which factors, within the curriculum of the first-year undergraduate medical programme module MEF153, influence the academic performance of students in this module"* was addressed through a literature survey, a questionnaire and the statistical analysis of data from the questionnaires.

The aim of this chapter is to provide a brief overview of the study and to present comments as well as concluding remarks on the final findings. The chapter commences with an overview of the study, epitomises the highlights and challenges of the main findings, findings of the questionnaire, conclusion of the study, overall goal of the study, aim of the study, objectives of the study, purpose

of the study related to academic performance from the researchers personal point of view, recommendations of the study, limitations of the study and end with a concluding remark.

6.2 AN OVERVIEW OF THE STUDY

This research study was carried out and completed based on a single research question. The findings of the research will be used in curriculum development and curriculum review, as well as in student academic development and support activities, with the purpose of improving student academic performance.

In Chapter 1 (cf. 1.3) the research question was presented. The research question directed the study and provides the context for the findings. From the research question, objectives (cf. 1.4.3) were defined to address the research question.

Factors affecting a student's academic performance was conceptualised and contextualised in Chapter 2. This provided the theoretical background to identify and select factors/criteria to be included in the questionnaire. It also provided the basis for the selection of the methods used in the study.

Chapter 3 gave an overview of research methodology and discussed the methods used in the study. It also described quality insurance (cf. 3.4) of the study and ethical considerations (cf. 3.5).

The results from the quantitative questions in the questionnaire was reported and discussed in Chapter 4, and the findings of the qualitative data from the questionnaire were discussed in Chapter 5.

6.3 HIGHLIGHTS AND CHALLENGES OF THE MAIN FINDINGS

The highlights and challenges of the main findings will be discussed briefly.

6.3.1 Highlights

There is alignment between the results from this study and international publications on factors perceived as important influences on academic performance. The majority of the factors investigated throughout the questionnaire were perceived to have a positive influence on academic performance in module MEF153.

The notable correlation between results of the quantitative investigation and the qualitative investigation of this study, and the alignment with findings in literature were indications of the trustworthiness of the study.

The eagerness of the first-year students in the undergraduate medical programme to participate in the study was a personal highlight.

6.3.2 Challenges

A major challenge was to organise and conduct the data gathering with questionnaires, taking into account the busy programmes of the students and researcher.

6.4 FINDINGS OF THE QUESTIONNAIRE

Chapter 4 and 5 described and discussed the results and findings of the questionnaire. Chapter 4 dealt with the results and discussion of the quantitative component of the questionnaire, and Chapter 5 with the findings and discussion of the qualitative component of the questionnaire.

The main findings from the questionnaire were:

First-year students in the undergraduate medical programme perceived the same factors as important influences on academic performance as described in international publications.

The majority of the factors investigated through the questionnaire were perceived to have on average a positive influence on academic performance of first-year undergraduate medical students in module MEF153.

A good correlation existed between findings of the quantitative and the qualitative component of the questionnaire.

For every factor investigated, some students perceived the factor to have a positive effect on academic performance, some a negative effect, and some no effect on academic performance.

Factors with the greatest perceived positive effect on academic performance in the module MEF153 included:

- Personal motivation.
- Academic ability.
- Intelligence.
- Academic environment/atmosphere.
- The outcomes-based curriculum.
- Organisation and lay-out of the module.

Factors with the greatest perceived negative effect on academic performance in the module MEF153 included:

- Workload of the undergraduate medical programme and the module.
- Volume of content in the module.
- Load of independent study in the module.
- Difficulty of content of the module.
- Difficulty of language used in study material in the module.
- (Small) number of assessment opportunities in the module.
- Volume of content included in assessment opportunities in the module.
- Stress associated with assessment in the module.
- Time schedules of the undergraduate medical programme and the module.
- Clarity of outcomes and expectations in the undergraduate medical programme and the module.

6.5 CONCLUSION OF THE STUDY

In these paragraphs, the research question regarding the overall goal of the study, the aim of the project as well as the objectives will be answered.

6.5.1 Overall goal of the study

The overall goal of this study was to make recommendations to adapt the curriculum and the development of appropriate student support initiatives with the purpose of improving students' academic performance by identifying and addressing the factors that influence the said performance. To achieve this goal the researcher set an aim for the study as well as objectives. The answers to each specific part will be displayed below.

6.5.2 Aim of the study

The aim of the study was to investigate students' perspectives of the importance of factors affecting their academic performance in their first-year of studies in module MEF153 in the undergraduate medical programme.

From the results of the questionnaire, the students felt that all factors investigated, with the exception of interracial relations, were important factors to influence their academic performance in module MEF153. The majority of factors were perceived to have a positive influence on student's academic performance (cf. Chapter 4 and Chapter 5). The researcher concluded from this that the undergraduate medical programme and module MEF153 are designed and implemented in such a way that these factors have a positive influence on academic performance. Students perceived certain factors in module MEF153 to have a negative influence on academic performance. These factors are linked to the workload, difficulty and volume of content, clarity of outcomes, assessment and time schedules in module MEF153 (cf. Chapters 4 and 5 and paragraph 6.4). It is necessary for the faculty to acknowledge these factors, evaluate them from a higher education perspective, and use these findings in recommendations to

improve module MEF153.

The results of the questionnaire may be used to assist students in taking the necessary steps to counteract the negative effect of these factors. This will mainly involve better time management and planning of their study programmes to accommodate the volume of difficult content. Actions can also be taken by students to improve their skills needed to manage these factors; for example, development of better study techniques.

6.5.3 Objectives of the study

To answer the research question and achieve the aim, certain objectives were pursued. These included conceptualising and contextualizing factors affecting students' academic performance, including factors perceived by students as affecting academic performance through a literature survey.

The literature survey determined that individual (cf. 2.3), organisational (cf. 2.4), environmental (cf. 2.4), and academic programme (cf. 2.5) factors influence academic performance of students, and that these factors are often interconnected (James 2007:2; Krumrei-Mancuso *et al*. 2013:248-253; Reason *et al.* 2006:149,167; Yates 2012:46-49). Many factors that influence academic performance are based in the academic institution and academic programmes. These factors are under the control and influence of the academic institution. Academic performance of students can be improved by addressing factors that negatively influence academic performance. This can be done through improving the curriculum or academic development and support initiatives.

Students are also more diverse than ever before. Different factors influence individual students differently (Nelson & Kift 2005:226). Care must be taken against generalisations; considering only the majority views will exclude and negatively influence minor groups and individuals.

A questionnaire was used to identify a selection of factors/criteria present within the structure of module MEF153 including both factors affecting students' academic performance and factors perceived by students to affect academic performance from the literature survey. The results from the questionnaire containing factors/criteria to determine the students' perspective of the relative importance of each factor affecting academic performance showed that the factors are spread between personal, institutional, environmental and academic programme factors and students' perspectives of these factors were across the entire range of measurement.

Through the statistical analysis of data the conclusion was that the students' perspective of the importance of factors affecting academic performance of students in module MEF153 by means of the questionnaire was that all factors investigated, with the exception of interracial relations (median = 2), were considered important influences on academic performance (Median = 5 or more). Cognisance must be taken that the student's perspective of the importance of factors varied between 0 and 10 for most factors. It emphasises the diversity present in the study population. Module MEF153 incorporated the factors in such a manner that the majority had a positive influence on academic performance for most participants. Factors that had a negative influence are mentioned in par. 6.4 and discussed in Chapter 4 and Chapter 5. Emphasis was on the students' perspective of the relative importance of various factors affecting academic performance.

The before-mentioned objectives addressed the research question, namely, to determine:

Which factors, within the curriculum of the first-year undergraduate medical programme module MEF153, influence the academic performance of students in this module?

It is the view of the researcher, that factors that influence academic performance in module MEF153 were identified by means of addressing the objectives of the

study.

6.6 PURPOSE OF THE STUDY RELATED TO ACADEMIC PERFORMANCE FROM THE RESEARCHER'S PERSONAL POINT OF VIEW

From the literature study, the researcher gained theoretical knowledge about:

- Characteristics of first-year university students;
- Factors influencing academic performance; and
- Structure, organisation and components of different types of curricula.

By doing the research, the researcher learned about:

- Different research approaches e.g. Descriptive surveys and Mixed-method research;
- Research questionnaires; and
- Analysis and interpretation of quantitative and qualitative data.

The researcher also learned to implement professional skills such as:

- Organisational skills;
- Time management;
- Writing skills; and,
- Stress management.

Conducting the research project was an overall positive experience for the researcher.

6.7 RECOMMENDATIONS

The first recommendation from this study will be to review the MEF153 curriculum, with emphasis on the factors identified in this study to have a negative influence on academic performance of students. Any changes made to the current

curriculum should not only consider findings from this study, but should also evaluate the factors from a higher education and maintenance of academic standard approach.

The second recommendation is to improve the student academic development initiative to specifically address the factors identified in this study that negatively influence academic performance. This includes sessions on time management (cf. 4.3.4.5), development of a study plan (cf. 4.3.4.7 and 4.3.5), assessment techniques (cf. 4.3.5.13) and stress management (cf. 4.3.5.13).

Other recommendations include:

- Conduct a training session for lecturers in module MEF153 of the undergraduate medical programme on challenges faced by students in module MEF153.

- Make recommendations to evaluate the skills development module (module MEA113) of the undergraduate medical programme to ensure the necessary skills are developed to cope with the demands of medical studies.

- Review the undergraduate medical curriculum to ensure a balanced distribution of content between modules, and ensure the degree of difficulty match the abilities of students at the different stage of their studies.

- Sensitise lecturers to the diverse nature of the student population, and provide actions to accommodate this diversity.

- Recommend further research to acquire a more complete understanding of factors affecting academic performance of students, that may be used in the improvement of the undergraduate medical curriculum and refine the selection criteria for the undergraduate medical programme.

- Write an article to notify and create awareness among other colleagues of the results in a peer-reviewed journal, and presentations at congresses, as well as at the Faculty Research Forum.

6.8 LIMITATIONS OF THE STUDY

Participation in the study was voluntary and only a single opportunity to complete the questionnaire was available. Bias may exist in the study population which may have influenced the results obtained, due to, not all students in the first-year of the undergraduate medical programme participating in the study. A participation rate of 88% contributes to a high reliability and validity in this study.

The scheduling of the questionnaire survey and the length of the questionnaire may have caused incomplete responses and ill-considered responses in the open-ended questions.

The study was performed on a single year group, in a single academic programme, at a single academic institution. This limits the transferability of results to other year groups, academic programmes and other academic institutions; however the focus of this study was only academic performance in module MEF153.

This study is a descriptive survey and only identifies factors that influence academic performance, according to the participants. This limits any recommendations that can be made from this study. Further research is necessary to evaluate any alternatives/improvements to the current situation and to investigate it from a higher education perspective.

6.9 CONCLUDING REMARKS

To be able to assist students in their studies, the academic institution should be aware of, and willing to act on, all factors that influence academic performance. Firstly, the academic standard of students entering the university should be

determined and/or regulated. Secondly, academic development and support initiatives must address the needs of these students. Thirdly, the entire university experience of students must be developed and monitored according to students' abilities and university expectations. This includes personal characteristics of students, the institution and specific academic programmes. All of this should take place while academic standards are maintained.

According to Anatole France (2013) "*An education isn't how much you have committed to memory, or even how much you know. It's being able to differentiate between what you know and what you don't."*

In that light, this study should be seen as an attempt to assist students and staff who lecture in a module to understand the dynamics of the module and in striving to improve the results of students. This will hopefully lead to improvement of teaching and learning as part of holistic development of students in creating lifelong learners.

IN VERITATE SAPIENTIAE LUX

(In Truth is the Light of Wisdom)

(UFS 2014:Online)

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PERSONAL COMMUNICATIONS

Du Toit, L.J. 2011. Senior Officer: Office of the Dean, Faculty of Health Sciences, University of the Free State. Interview conducted on 1 March.

LIST OF APPENDICES

APPENDIX A

INFORMATION LEAFLETS

INFORMATION DOCUMENT

Study title:

An investigation into the characteristics of the anatomy and embryology module (MEF153) that affect first year medical students' academic performance at the University of the Free State: A students' perspective.

Introduction:

I, Mr. Gerhard van Zyl, am doing research on factors affecting student's academic performance. Research is just the process to learn the answer to a question. In this study we want to investigate the first year medical student's perspective on factors affecting their academic performance. The relative importance of each factor, as perceived by you, the students will be determined. The study will be specifically performed on the characteristics of the module MEF153 in phase 1 of the M.B.Ch.B-program of the School of Medicine, Faculty of Health Sciences, University of the Free State. This study is necessary because of the unique characteristics and circumstances of our students and medical programme. The academic success of our students is important and can only be addressed with accurate and complete knowledge of factors that affect their academic performance.

Invitation to participate

I am asking you to participate in this research study voluntary.

What is involved in the study?

The research approach is a quantitative study with qualitative elements. The research design followed will be a descriptive survey.

The prevalence and perceived importance of factors affecting academic performance is determined by means of a self-administered questionnaire by research participants.

The questionnaire contains questions with reference to demographic information, limited personal information, factors affecting students' academic performance and/or perceived by students to affect academic performance, in general and specifically for each participant in the study. Factors include, time available for modules, teacher behaviour, resources, academic environment and academic climate. Academic characteristics include in- and out-of class conditions, teaching strategies and methods, learning opportunities and assessment.

Students will be informed and completion of questionnaires will be anonymous and confidential.
Statistical analysis of quantitative data will be performed by the department of Biostatistics of the University of the Free State.

The study population includes all students registered for the module MEF153 in the M.B.Ch.B-program of the School of Medicine, Faculty of Health Sciences, University of the Free State, on the day of data collection. The study population is 152 individuals. Both Afrikaans and English students will be included.

The total amount of time needed by the participant to take part in the study and complete the questionnaire should take a maximum of 30 minutes.

Risks
This study should not create any risks for you, the participant.

Benefits
This study will probably hold no direct benefits for you, the participant.

The findings of this research project will be used in the revision of the module MEF153 to assist future students to perform better in the module MEF153.

Adaptations to the module MEF153 will aim to minimize the student's perceived negative effect of factors affecting academic performance of students.

The subject will be given information on the study while involved in the project and after the results are available.

Participation is voluntary
Participation is voluntary, and refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled. The subject may discontinue participation at any time without penalty or loss of benefits to which the subject is otherwise entitled.

Reimbursements
This study should not create any costs for you, the participant. No reimbursement of any kind will be paid for participation in this study.

Confidentiality

Efforts will be made to keep personal information confidential. Absolute confidentiality cannot be guaranteed. Personal information may be disclosed if required by law.

Organisations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the Ethics Committee for Medical Research.

If results are published, this may lead to individual/cohort identification.

Contact details of researcher(s)

You can contact me, the researcher for further information.

Mr. G.J. van Zyl
Room B201
Department of Basic Medical Sciences
School of Medicine
Faculty of Health Sciences
University of the Free State
Int.box: G25
Tel.: (051) 405 3636 / (051) 405 3555 (secr.)
E-mail: gnangjvz@ufs.ac.za

Thank you for your participation

INLIGTINGSDOKUMENT

Studietitel:

'n Ondersoek van die kenmerke van die anatomie en embriologie module (MEF153), wat die akademiese prestasie van eerste jaar mediese studente beïnvloed, by die Universiteit van die Vrystaat: Studente se perspektief.

"An investigation into the characteristics of the anatomy and embryology module (MEF153) that affect first year medical students' academic performance at the University of the Free State: A students' perspective."

Inleiding:

Ek, Mnr. Gerhard van Zyl, is besig om navorsing oor die faktore wat studente se akademiese prestasie beïnvloed te doen. Navorsing is slegs die proses waardeur die antwoord op 'n vraagstuk verkry word. In hierdie studie wil ons die perspektief, van eerste jaar mediese studente, van faktore wat hul akademiese prestasie beïnvloed bestudeer. Die relatiewe belang van elke faktor, soos deur die studente ervaar, sal bepaal word. Hierdie studie word spesifiek op die faktore wat in die module MEF153 teenwoordig is uitgevoer. Die module MEF153 is deel van fase 1 van die M.B.Ch.B-program van die Skool van Geneeskunde, fakulteit Gesondheidswetenskappe. Hierdie studie is noodsaaklik weens die unieke kenmerke en omstandighede van ons studente en die mediese program. Akademiese sukses van ons studente is baie belangrik vir ons en kan slegs aangespreek wod indien ons oor volledige en korrekte inligting beskik aangaande faktore wat akademiese sukses beïnvloed.

Uitnodiging om deel te neem

Ek versoek u om vrywillig aan hierdie navorsingstudie deel te neem.

Wat behels die studie

Die studie volg 'n kwantitatiewe benadering met kwalitatiewe elemente. Die studie-ontwerp is 'n beskrywende opname.

Die teenwoordigheid, en belang van faktore wat akademiese prestasie beïnvloed word bestudeer. Die studente se ervaring van belangrikheid van faktore word bepaal. Inligting word m.b.v. 'n vraelys, wat deur studente voltooi word, ingesamel. Die vraelys sluit demografiese inligting, beperkte persoonlike inligting, faktore wat student akademiese

prestasie beïnvloed of deur student ervaar word as faktore wat prestasie beïnvloed in. Die belang van faktore vir studente in geheel en vir individuele studente word bepaal. Faktore sluit in: beskikbare tyd vir modules, dosent gedrag, studie bronne, akademiese omgewing en akademiese klimaat. Akademiese kenmerke sluit in: omstandighede in- en buite die lesinglokaal, onderrigstrategieë en metodes, leergeleenthede en assesssering.

Studente word ingelig aangaande die studie en vraelyste word anoniem en konfidensieel voltooi.
Statistiese ontleding van kwantitatiewe data word deur die departement Biostatistiek van die Universiteit van die Vrystaat uitgevoer.

Die studie populasie sluit alle geregistreerde studente in die module MEF153 van die mediese program, van die Universiteit van die Vrystaat in, wat teenwoordig is op die dag van data insameling. Die studies sal 152 individue insluit. Beide Afrikaanse en Engelse studente word ingesluit.

Die totale tyd wat ‘n student benodig vir deelname aan hierdie studie en voltooiing van die vraelys sal nie meer as 30 minute in beslag neem nie.

Risiko’s
Deelname aan hierdie studie behoort geen risiko’s vir jou, die deelnemer, in te hou nie.

Voordele
Hierdie studie sal waarskynlik geen direkte voordele vir jou, die deelnemer, inhou nie.

Die bevindings van hierdie projek sal gebruik word om die module MEF153 te hersien, sodat toekomstige studente beter akademiese prestasie in die module MEF153 sal behaal.

Daar sal gepoog word om die module MEF153 sodanig aan te pas, sodat die negatiewe ervaring van studente t.o.v. faktore wat hul akademiese prestasie beïnvloed, sal verbeter.

U, die proefpersoon sal inligting oor die studie ontvang tydens betrokkenheid by die projek en daarna wanneer die resultate beskikbaar is.

Deelname is vrywillig
Deelname is vrywillig, en weiering om deel te neem sal geen boete of verlies van voordele waarop die deelnemer andersins geregtig is behels nie; die proefpersoon kan te eniger tyd

aan deelname onttrek sonder boete of verlies van voordele waarop die proefpersoon andersins geregtig is.

Vergoeding

Hierdie studie behoort geen uitgawes vir jou, die deelnemer in te hou nie. Geen vergoeding sal vir deelname aan die studie aangebied word nie.

Vertroulikheid

Daar sal gepoog word om persoonlike inligting vertroulik te hou. Volkome vertroulikheid kan nie gewaarborg word nie. Persoonlike inligting kan bekend gemaak word as die wet dit vereis.

Organisasies wat u navorsingsrekords mag ondersoek en/of kopieer vir kwaliteitsversekering en data-analise sluit groepe soos die Etiekkomitee vir Mediese Navorsing in.

As resultate gepubliseer word, kan dit lei tot individuele/groepsidentifikasie.

Kontakbesonderhede van navorser

Jy kan my, die navorser kontak vir verdere inligting.

Mnr. G.J. van Zyl
Kamer B201
Departement Basiese Mediese Wetenskappe
Skool vir Geneeskunde
Fakulteit Gesondheidswetenskappe
Universiteit van die Vrystaat
Int.bus: G25
Tel.: (051) 405 3636 / (051) 405 3555 (secr.)
E-pos: gnangjvz@ufs.ac.za

Dankie vir jou deelname aan die studie

APPENDIX B

QUESTIONNAIRES

STUDENTE VRAELYS

Studente se perspektief van faktore wat akademiese prestasie beïnvloed in die module MEF153

U is gevra om deel te neem aan 'n navorsingstudie. Let asseblief daarop dat u met die voltooiing van die vraelys vrywillig toestem tot die navorsingstudie. **U sal anoniem bly en u data sal te alle tye vertroulik hanteer word**. U kan enige tyd tydens die voltooiing van die vraelys van die studie onttrek. Neem asb kennis dat die resultate van die studie gepubliseer mag word en/of by forums en kongresse voorgedra word.

Vir amptelike gebruik

DEMOGRAFIESE INLIGTING

1

Omsirkel asb. die nommer wat ooreenstem met jou keuse: **2-4**

1. Watter stelling beskryf jou die beste?
(a) Ek was verlede jaar in Graad 12 (matriek) 1
(b) Ek was in 2009 of voor 2009 in Graad 12 (matriek) 2 **5**

2. Wat is jou geslag?
(a) Vroulik 1
(b) Manlik 2 **6**

3. Wat is jou ras?
(a) Swart 1
(b) Blank 2
(c) Kleurling 3
(d) Indiër 4
(e) Ander 5 **7**

4. Moedertaal
(a) Afrikaans 1
(b) English 2
(c) SesothoAnder 3
(d) Ander 4 **8**

5. Indien jy jou moedertaal as “ander” aangedui het, spesifiseer asseblief.
_____ **9**

JOU PERSOONLIKE OORTUIGING/PERSPEKTIEF/PERSEPSIE VAN DIE BELANGRIKHEID VAN FAKTORE WAT AKADEMIESE PRESTASIE BEïNVLOED.

INSTRUKSIES

1) Dui jou persoonlike oortuiging aan t.o.v. die mate waartoe die volgende faktore akademiese prestasie van STUDENTE IN DIE ALGEMEEN beïnvloed.
Dui jou keuse aan deur 'n waarde te kies op 'n skaal vanaf 0 tot 10 wat die mate waartoe 'n faktor akademiese prestasie van studente beïnvloed aandui.
0 = geen effek en 10 = baie groot effek.
Skryf die waarde wat jy gekies het in die "blokkie" aan die regterkant van die tabel.

2) Dui aan tot watter mate die volgende faktore jou PERSOONLIKE AKADEMIESE PRESTASIE in die module MEF153 beïnvloed.
Dui jou keuse aan deur 'n "X" in die blokkie van jou keuse te maak in die linkerkantste gedeelte van die tabel.

1)
Dui aan tot watter mate die volgende faktore akademiese prestasie van STUDENTE IN DIE ALGEMEEN beïnvloed.

Dui jou keuse aan deur 'n waarde te kies op 'n skaal vanaf 0 tot 10
0 = geen effek en 10 = baie groot effek.
Skryf die waarde wat jy gekies het in die "blokkie" aan die regterkant van die tabel

Vir amptelike gebruik

2)
Dui aan tot watter mate die volgende faktore jou PERSOONLIKE AKADEMIESE PRESTASIE in die module MEF153 beïnvloed

Dui jou keuse aan deur 'n "X" in die blokkie van jou keuse

	Groot negatiewe effek	Negatiewe effek	Geen effek	Positiewe effek	Groot positiewe effek			
PERSOONLIKE FAKTORE wat akademiese prestasie in MEF153 beïnvloed								
1. Persoonlike sosiale faktore						☐	☐☐	10-11
2. Persoonlike motivering						☐	☐☐	12-13
3. Persoonlikheid						☐	☐☐	14-15
4. Akademiese vaardigheid						☐	☐☐	16-17

Dui aan tot watter mate die volgende faktore <u>akademiese prestasie van STUDENTE IN DIE ALGEMEEN</u> beïnvloed.

Dui jou keuse aan deur 'n waarde te kies op 'n skaal vanaf 0 tot 10
0 = geen effek en 10 = baie groot effek.
Skryf die waarde wat jy gekies het in die "blokkie" aan die regterkant van die tabel

Vir amptelike gebruik

Dui aan tot watter mate die volgende faktore jou <u>PERSOONLIKE AKADEMIESE PRESTASIE in die module MEF153 beïnvloed</u>

Dui jou keuse aan deur 'n "X" in die blokkie van jou keuse

	Groot negatiewe effek	Negatiewe effek	Geen effek	Positiewe effek	Groot positiewe effek			
5. Intelligensie						☐	☐☐	18-19
6. Taalvaardigheid van student						☐	☐☐	20-21
7. Vorige akademiese sukses/mislukking in die module MEF153						☐	☐☐	22-23
8. Leerstyl						☐	☐☐	24-25
9. Finansiële koste van studies						☐	☐☐	26-27
10. Persoonlike vervoer vir bywoning van sessies in die module MEF153						☐	☐☐	28-29
11. Persoonlike tydsbestuur in die module MEF153						☐	☐☐	30-31
12. Persoonlike inter-rasseverhoudings tydens studie van die module MEF153						☐	☐☐	32-33
13. Huisvesting tydens studie						☐	☐☐	34-35

Dui aan tot watter mate die volgende faktore <u>akademiese prestasie van STUDENTE IN DIE ALGEMEEN</u> beïnvloed.

Dui jou keuse aan deur 'n waarde te kies op 'n skaal vanaf 0 tot 10
0 = geen effek en 10 = baie groot effek.
Skryf die waarde wat jy gekies het in die "blokkie" aan die regterkant van die tabel

Vir amptelike gebruik

Dui aan tot watter mate die volgende faktore jou <u>PERSOONLIKE AKADEMIESE PRESTASIE in die module MEF153 beïnvloed</u>

Dui jou keuse aan deur 'n "X" in die blokkie van jou keuse

	Groot negatiewe effek	Negatiewe effek	Geen effek	Positiewe effek	Groot positiewe effek			
INSTANSIE / FAKULTEIT EIENSKAPPE wat akademiese prestasie in MEF153 beïnvloed								
1. Algemene regulasies van die UV						☐	☐☐	36-37
2. Kennis van die verwagtinge (van die instansie)						☐	☐☐	38-39
3. Administrasie van die Universiteit/Fakulteit/ program/module						☐	☐☐	40-41
4. Instansie se betrokkenheid by studente leer (studente ondersteuning / studente akademiese ontwikkeling)						☐	☐☐	42-43
5. Taalbeleid van die universiteit						☐	☐☐	44-45
6. Akademiese atmosfeer/akademiese omgewing						☐	☐☐	46-47
7. Sosiale strukture in/van die universiteit (verenigings/groepe)						☐	☐☐	48-49
8. Rasse interaksies by die UV						☐	☐☐	50-51
9. Tutor-program						☐	☐☐	52-53
10. Mentor-program						☐	☐☐	54-55

Dui aan tot watter mate die volgende faktore <u>akademiese prestasie van STUDENTE IN DIE ALGEMEEN</u> beïnvloed.

Dui jou keuse aan deur 'n waarde te kies op 'n skaal vanaf 0 tot 10
0 = geen effek en 10 = baie groot effek.
Skryf die waarde wat jy gekies het in die "blokkie" aan die regterkant van die tabel

Vir amptelike gebruik

Dui aan tot watter mate die volgende faktore jou <u>PERSOONLIKE AKADEMIESE PRESTASIE in die module MEF153 beïnvloed</u>

Dui jou keuse aan deur 'n "X" in die blokkie van jou keuse

	Groot negatiewe effek	Negatiewe effek	Geen effek	Positiewe effek	Groot positiewe effek			
MEDIESE PROGRAM KENMERKE wat akademiese prestasie in MEF153 beïnvloed								
1. Uitkoms gebaseerde kurrikulum van hierdie MBChB-program						☐	☐☐	56-57
2. Toelatingsvereistes van hierdie MBChB-program						☐	☐☐	58-59
3. Program organisasie/uitleg						☐	☐☐	60-61
4. Duidelike verwagtinge van die MBChB-mediese program						☐	☐☐	62-63
5. Rooster / tydskedules van die MBChB-program						☐	☐☐	64-65
6. Eksamenrooster						☐	☐☐	66-67
7. Werkslading in die MBChB-program						☐	☐☐	68-69
8. Die metode van programassessering						☐	☐☐	70-71
9. Administrasie rakende programassessering						☐	☐☐	72-73
10. Algemene vaardigheidsmodule (MEA113)						☐	☐☐	74-75
11. Biblioteek- en inligtingsdienste vir die MBChB-program						☐	☐☐	76-77

Dui aan tot watter mate die volgende faktore <u>akademiese prestasie van STUDENTE IN DIE ALGEMEEN</u> beïnvloed.

Dui jou keuse aan deur 'n waarde te kies op 'n skaal vanaf 0 tot 10
0 = geen effek en 10 = baie groot effek.
Skryf die waarde wat jy gekies het in die "blokkie" aan die regterkant van die tabel

Vir amptelike gebruik

Dui aan tot watter mate die volgende faktore jou <u>PERSOONLIKE AKADEMIESE PRESTASIE in die module MEF153 beïnvloed</u>

Dui jou keuse aan deur 'n "X" in die blokkie van jou keuse

	Groot negatiewe effek	Negatiewe effek	Geen effek	Positiewe effek	Groot positiewe effek			
KENMERKE VAN DIE MODULE MEF153 wat akademiese prestasie in MEF153 beïnvloed								
1. Posisionering van die module MEF153 binne die mediese kurrikulum						☐	☐☐	78-79
2. Organisasie/uitleg van die module MEF153						☐	☐☐	80-81
3. Tydskedules binne die module MEF153						☐	☐☐	82-83
4. Duidelike uitkomste in die module MEF153						☐	☐☐	84-85
5. Duidelike verwagtinge in die module MEF153						☐	☐☐	86-87
6. Volume van vakinhoud van die module MEF153						☐	☐☐	88-89
7. Werkslading van die module MEF153						☐	☐☐	90-91
8. Aantal kontaksessies in die module MEF153						☐	☐☐	92-93
9. Tydsduur van kontaksessies in die module MEF153						☐	☐☐	94-95
10. Beskikbare tyd vir onafhanklike studie in die module MEF153						☐	☐☐	96-97
11. Lading van onafhanklike studie in die module MEF153						☐	☐☐	98-99

Dui aan tot watter mate die volgende faktore <u>akademiese prestasie van STUDENTE IN DIE ALGEMEEN</u> beïnvloed.

Dui jou keuse aan deur 'n waarde te kies op 'n skaal vanaf 0 tot 10
0 = geen effek en 10 = baie groot effek.
Skryf die waarde wat jy gekies het in die "blokkie" aan die regterkant van die tabel

Vir amptelike gebruik

Dui aan tot watter mate die volgende faktore jou <u>PERSOONLIKE AKADEMIESE PRESTASIE in die module MEF153 beïnvloed</u>

Dui jou keuse aan deur 'n "X" in die blokkie van jou keuse

	Groot negatiewe effek	Negatiewe effek	Geen effek	Positiewe effek	Groot positiewe effek			
12. Moeilikheidsgraad van die inhoud van die module MEF153						☐	☐☐	100-101
13. Integrasie van kennis tussen modules						☐	☐☐	102-103
14. Vaktaal en terminologie						☐	☐☐	104-105
15. Onderrigtaal in die module MEF153						☐	☐☐	106-107
16. Biblioteek en inligtingsdienste vir die module MEF153						☐	☐☐	108-109
17. Moeilikheidsgraad van die taalgebruik in hulpbronne						☐	☐☐	110-111
18. Grootte van klasse in die module MEF153						☐	☐☐	112-113
19. Lesings as onderrigmetode in die module MEF153						☐	☐☐	114-115
20. Praktiese sessies as onderrigmetode in die module MEF153						☐	☐☐	116-117
21. Tutoriale as onderrigmetode in die module MEF153						☐	☐☐	118-119
22. Aantal assesseringsgeleenthede in die module MEF153						☐	☐☐	120-121

Dui aan tot watter mate die volgende faktore <u>akademiese prestasie van STUDENTE IN DIE ALGEMEEN</u> beïnvloed.

Dui jou keuse aan deur 'n waarde te kies op 'n skaal vanaf 0 tot 10
0 = geen effek en 10 = baie groot effek.
Skryf die waarde wat jy gekies het in die "blokkie" aan die regterkant van die tabel

Vir amptelike gebruik

Dui aan tot watter mate die volgende faktore jou <u>PERSOONLIKE AKADEMIESE PRESTASIE in die module MEF153 beïnvloed</u>

Dui jou keuse aan deur 'n "X" in die blokkie van jou keuse

	Groot negatiewe effek	Negatiewe effek	Geen effek	Positiewe effek	Groot positiewe effek			
23. Volume vakinhoudper assessrings-geleentheid in die module MEF153						☐	☐☐	122-123
24. Duidelikheid van vrae tydens assessering						☐	☐☐	124-125
25. Skriftelike toetse as assesseringsmetode in die module MEF153						☐	☐☐	126-127
26. Tyd beskikbaar vir voltooiing van assesseringsgeleenthede in die module MEF153						☐	☐☐	128-129
27. Administratiewe prosedures geassosieerd met assessering in die module MEF153						☐	☐☐	130-131
28. Terugvoer na afloop van assesserings-geleenthede in die module MEF153						☐	☐☐	132-133
29. Stres geassosieer met assessering in die module MEF153						☐	☐☐	134-135
30. Assessering van die module MEF153 in IMA113 (Geïntegreerde Mediese Assessering)						☐	☐☐	136-137

OOP VRAE

1. Tot watter mate beïnvloed die tipe hulpbronne bv. handboeke, museum monsters en lesingnotas akademiese prestasie in die module MEF153?. Motiveer u antwoord.

2. Tot watter mate beïnvloed die beskikbaarheid van hulpbronne bv. handboeke, museum monsters en lesingnotas akademiese prestasie in die module MEF153?. Motiveer u antwoord.

3. Tot watter mate beïnvloed die leeromgewing bv. lesinglokale en disseksiesaal akademiese prestasie in die module MEF153?. Motiveer u antwoord.

4. Tot watter mate beïnvloed die onderrigvaardighede (kommunikasievaardigheid, taal vaardigheid en gebruik van tegnologie) van dosente in die module MEF153 studente se akademiese prestasie in die module MEF153?. Motiveer u antwoord.

5. Tot watter mate beïnvloed die persoonlikheidstipes van dosente in die module MEF153 die akademiese prestasie van studente in die module MEF153?. Motiveer u antwoord.

6. Tot watter mate beïnvloed dosente in die module MEF153 se die houding teenoor die vakinhoud die akademiese prestasie van studente in die module MEF153?. Motiveer u antwoord.

7. Tot watter mate beïnvloed dosente se betrokkenheid/verhouding met studente die akademiese prestasie van studente in die module MEF153?. Motiveer u antwoord.

8. Tot watter mate beïnvloed dosente se beskikbaarheid vir konsultasies in die module MEF153 die akademiese prestasie van studente in die module MEF153?. Motiveer u antwoord.

9. Tree dosente in die module MEF153 as rolmodelle op vir studente, tot so ‘n mate dat dit akademiese prestasie van studente in die module MEF153 beïnvloed?. Motiveer u antwoord.

10. Noem enige addisionele faktore wat ‘n groot invloed op jou akademiese prestasie het.

11. Noem die vyf (5) belangrikste faktore wat jou akademiese prestasie **positief** beïnvloed in die module MEF153.

1)
2)
3)
4)
5)

12. Noem die vyf (5) belangrikste faktore wat jou akademiese prestasie **negatief** beïnvloed in die module MEF153.

1)
2)
3)
4)
5)

13. Indien jy verantwoordelik was om die akademiese prestasie van studente in die module MEF153 te verbeter, watter veranderings sou jy aanbeveel t.o.v. die kurrikulum en module MEF153?

DANKIE VIR JOU DEELNAME!

Navorser
Module MEF153

STUDENT QUESTIONNAIRE

Students perspectives on factors affecting academic performance in the module MEF153

You have been asked to participate in a research study. Please note that by completing this questionnaire you are voluntarily agreeing to participate in this research study. **You will remain anonymous and your data will be treated confidentially at all times.** You may withdraw from this study at any given moment during the completion of the questionnaire. The results of the study may be published and/or presented at forums and congresses.

For office use only

DEMOGRAPHIC DATA

Please encircle the number that corresponds to your choice:

1. Which statement describes you the best?

(a) I was in Grade 12 (matric) last year	1	
(b) I was in Grade 12 (matric) in 2009 or before 2009	2	**5**

2. What is your gender?

(a) Female	1	
(b) Male	2	**6**

3. What is your race?

(a) Black	1	
(b) White	2	
(c) Coloured	3	
(d) Indian	4	
(e) Other	5	**7**

4. Home language:

(a) Afrikaans	1	
(b) English	2	
(c) Sesotho	3	
(d) Other	4	**8**

5. If you indicated language as “other”; please specify: _____ **9**

YOUR PERSONAL BELIEF/PERSPECTIVE/PERCEPTION OF THE IMPORTANCE OF FACTORS AFFECTING ACADEMIC PERFORMANCE.

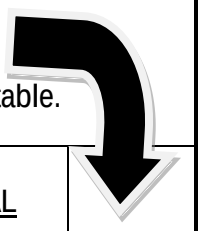
INSTRUCTIONS

1) Indicate your personal belief to what extent the following factors affect academic performance of STUDENTS IN GENERAL.
Indicate your choice by selecting a value on a scale of 0 to 10 representing the extent each factor's influence on student's academic performance.
0 = no effect and 10 = very large effect.
Write your selected value in the "box' provided to the right of the table.

2) Indicate to what extent the following factors affect your PERSONAL ACADEMIC PERFORMANCE in the module MEF153.
Indicate your choice by making an "X" in the selected box on the table on the left.

1)
Indicate to what extent the following factors affect academic performance of STUDENTS IN GENERAL.

Indicate your choice by selecting a value on a scale of 0 to 10
0 = no effect and 10 = very large effect.
Write your selected value in the "box' provided to the right of the table.



2)
Indicate to what extent the following factors affect your PERSONAL ACADEMIC PERFORMANCE in the module MEF153.

Indicate your choice by making an "X" in the selected box

	Large negative effect	Negative effect	No effect	Positive effect	Large positive effect		For office use only	
PERSONAL FACTORS affecting academic performance in MEF153								
1. Personal social factors						☐	☐☐	10-11
2. Personal motivation						☐	☐☐	12-13
3. Personality						☐	☐☐	14-15
4. Academic ability						☐	☐☐	16-17

Indicate to what extent the following factors affect <u>academic performance of STUDENTS IN GENERAL</u>.

Indicate your choice by selecting a value on a scale of 0 to 10
0 = no effect and 10 = very large effect.
Write your selected value in the "box' provided to the right of the table.

For office use only

Indicate to what extent the following factors affect your <u>PERSONAL ACADEMIC PERFORMANCE in the module</u> MEF153.

Indicate your choice by making an "X" in the selected box

	Large negative effect	Negative effect	No effect	Positive effect	Large positive effect			
5. Intelligence						☐	☐☐	18-19
6. Language proficiency of student						☐	☐☐	20-21
7. Previous academic success / failure in the module MEF153 (if applicable)						☐	☐☐	22-23
8. Learning style						☐	☐☐	24-25
9. Financial cost of studies						☐	☐☐	26-27
10. Personal transport to attend module MEF153						☐	☐☐	28-29
11. Personal time management in the module MEF153						☐	☐☐	30-31
12. Personal interracial relations in studying module MEF153						☐	☐☐	32-33
13. Residence during studies						☐	☐☐	34-35

Indicate to what extent the following factors affect <u>academic performance of STUDENTS IN GENERAL</u>.

Indicate your choice by selecting a value on a scale of 0 to 10
0 = no effect and 10 = very large effect.
Write your selected value in the "box' provided to the right of the table.

For office use only

Indicate to what extent the following factors affect your <u>PERSONAL ACADEMIC PERFORMANCE in the module</u> MEF153.

Indicate your choice by making an "X" in the selected box

	Large negative effect	Negative effect	No effect	Positive effect	Large positive effect			
INSTITUTIONAL / FACULTY CHARACTERISTICS affecting academic performance in MEF153								
1. General regulations of UFS						☐	☐☐	36-37
2. Knowledge of expectations (institutional)						☐	☐☐	38-39
3. Administration of the University/Faculty/ programme/module						☐	☐☐	40-41
4. Institutional involvement in student learning (student support / student academic development)						☐	☐☐	42-43
5. Language policy of university						☐	☐☐	44-45
6. Academic atmosphere/academic environment						☐	☐☐	46-47
7. Social structures based in university (associations/groups)						☐	☐☐	48-49
8. Racial interactions at the UFS						☐	☐☐	50-51
9. Tutor programme						☐	☐☐	52-53
10. Mentor programme						☐	☐☐	54-55

Indicate to what extent the following factors affect <u>academic performance of STUDENTS IN GENERAL</u>.

Indicate your choice by selecting a value on a scale of 0 to 10
0 = no effect and 10 = very large effect.
Write your selected value in the "box' provided to the right of the table.

For office use only

Indicate to what extent the following factors affect your <u>PERSONAL ACADEMIC PERFORMANCE in the module</u> MEF153.

Indicate your choice by making an "X" in the selected box

	Large negative effect	Negative effect	No effect	Positive effect	Large positive effect			
MEDICAL PROGRAM CHARACTERISTICS affecting academic performance in MEF153								
1. Outcome based curriculum of this MBChB-programme						☐	☐☐	56-57
2. Admission criteria into this MBChB-programme						☐	☐☐	58-59
3. Programme organisation/lay-out						☐	☐☐	60-61
4. Clarity of expectations of the MBChB-programme						☐	☐☐	62-63
5. Time table of the MBChB- programme						☐	☐☐	64-65
6. Exam time table						☐	☐☐	66-67
7. Workload of MBChB-programme						☐	☐☐	68-69
8. Assessment methods of the MBChB-programme						☐	☐☐	70-71
9. Administrative processes associated with programme assessment						☐	☐☐	72-73
10. General skills module (MEA113)						☐	☐☐	74-75
11. Library and information services for the MBChB-programme						☐	☐☐	76-77

Indicate to what extent the following factors affect <u>academic performance of STUDENTS IN GENERAL</u>.

Indicate your choice by selecting a value on a scale of 0 to 10
0 = no effect and 10 = very large effect.
Write your selected value in the "box' provided to the right of the table.

For office use only

Indicate to what extent the following factors affect your <u>PERSONAL ACADEMIC PERFORMANCE in the module</u> MEF153.

Indicate your choice by making an "X" in the selected box

	Large negative effect	Negative effect	No effect	Positive effect	Large positive effect			
CHARACTERISTICS OF MODULE MEF153 affecting academic performance in MEF153								
1. Positioning of module MEF153 within the medical curriculum						☐	☐☐	78-79
2. Organisation/lay-out of module MEF153						☐	☐☐	80-81
3. Time schedules of the module MEF153						☐	☐☐	82-83
4. Clear outcomes of module MEF153						☐	☐☐	84-85
5. Clear expectations in module MEF153						☐	☐☐	86-87
6. Volume of content of module MEF153						☐	☐☐	88-89
7. Workload of module MEF153						☐	☐☐	90-91
8. Number of contact sessions in the module MEF153						☐	☐☐	92-93
9. Duration of contact sessions in the module MEF153						☐	☐☐	94-95
10. Available time for independent study for module MEF153						☐	☐☐	99-97
11. Load of independent study in the module MEF153						☐	☐☐	98-99

Indicate to what extent the following factors affect <u>academic performance of STUDENTS IN GENERAL</u>.

Indicate your choice by selecting a value on a scale of 0 to 10
0 = no effect and 10 = very large effect.
Write your selected value in the "box' provided to the right of the table.

For office use only

Indicate to what extent the following factors affect your <u>PERSONAL ACADEMIC PERFORMANCE in the module</u> MEF153.

Indicate your choice by making an "X" in the selected box

	Large negative effect	Negative effect	No effect	Positive effect	Large positive effect			
12. Level of difficulty of module MEF153 content						☐	☐☐	100-101
13. Integration of knowledge between modules						☐	☐☐	102-103
14. Subject specific language and terminology						☐	☐☐	104-105
15. Language of instruction in module MEF153						☐	☐☐	106-107
16. Library and information services available for module MEF153						☐	☐☐	108-109
17. Difficulty of language of study material						☐	☐☐	110-111
18. Class size in module MEF153						☐	☐☐	112-113
19. Lectures as teaching method in the module MEF153						☐	☐☐	114-115
20. Practical sessions as teaching method in the module MEF153						☐	☐☐	116-117
21. Tutorials as teaching method in the module MEF153						☐	☐☐	118-119
22. Number of assessment opportunities in the module MEF153						☐	☐☐	120-121

Indicate to what extent the following factors affect <u>academic performance of STUDENTS IN GENERAL</u>.

Indicate your choice by selecting a value on a scale of 0 to 10
0 = no effect and 10 = very large effect.
Write your selected value in the "box' provided to the right of the table.

For office use only

Indicate to what extent the following factors affect your <u>PERSONAL ACADEMIC PERFORMANCE in the module</u> MEF153.

Indicate your choice by making an "X" in the selected box

	Large negative effect	Negative effect	No effect	Positive effect	Large positive effect			
23. Volume of subject content included in a specific assessment opportunity in the module MEF153						☐	☐☐	122-123
24. Clarity of questions in assessments						☐	☐☐	124-125
25. Written tests as method of assessment in the module MEF153						☐	☐☐	126-127
26. Time available for completion of assessments in the module MEF153						☐	☐☐	128-129
27. Administrative processes associated with assessment in the module MEF153						☐	☐☐	130-131
28. Feedback after assessments in the module MEF153						☐	☐☐	132-133
29. Stress associated with assessment of module MEF153						☐	☐☐	134-135
30. Assessment of module MEF153 in IMA 113 (Integrated Medical Assessment)						☐	☐☐	136-137

OPEN QUESTIONS

1. To what extent do the type of resources e.g. textbooks, notes, museum models and lecture notes influence academic performance in the module MEF153? Motivate your answer.

2. To what extent do the availability of resources e.g. textbooks, museum models and lecture notes influence academic performance in the module MEF153? Motivate your answer.

3. To what extent do the learning environments e.g. Lecture rooms and dissection hall influence academic performance in the module MEF153? Motivate your answer.

4. To what extent do the teaching abilities (communication skills, language proficiency and use of technology) of lecturers in the module MEF153 influence the students' academic performance in the module MEF153? Motivate your answer.

5. To what extent do the personality types of lecturers in the module MEF153 influence the students' academic performance in the module MEF153? Motivate your answer.

6. To what extent do the attitudes of lecturers towards the subject matter (in the module MEF153) influence the students' academic performance in the module MEF153? Motivate your answer.

7. To what extent does the lecturers' involvement/relationship with students influence the academic performance of students in the module MEF153? Motivate your answer.

8. To what extent does the availability of lecturers for consultation in the module MEF153 influence the academic performance of students in the module MEF153? Motivate your answer.

9. Do lecturers in the module MEF153 act as role models, to such an extent that it influences the academic performance of students in the module MEF153? Motivate your answer.

10. List any additional factors that have a large impact on your academic performance.

11. List the five most important factors that affect your academic performance **positively** in the module MEF153

1)
2)
3)
4)
5)

12. List the five most important factors that affect your academic performance **negatively** in the module MEF153

1)
2)
3)
4)
5)

13. If it were up to you to improve academic performance of students in the module MEF153, what changes would you suggest with reference to the curriculum or module MEF153?

THANK YOU FOR YOUR RESPONSE!

Researcher
Module MEF153

APPENDIX C

APPROVAL LETTERS

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

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Ms H Strauss

2011-04-15

MR GJ VAN ZYL
DEPT OF BASIC MEDICAL SCIENCES
FACULTY OF HEALTH SCIENCES
UFS

REC Reference number: REC-230408-011

Dear Mr van Zyl

ECUFS NR 35/2011
PROJECT TITLE: AN INVESTIGATION INTO THE CHARACTERISTICS OF THE ANATOMY AND EMBRYOLOGY MODULE (MEF153) THAT AFFECT FIRST YEAR MEDICAL STUDENTS' ACADEMIC PERFORMANCE AT THE UNIVERSITY OF THE FREE STATE: STUDENTS' PERSPECTIVE.

- You are hereby kindly informed that the Ethics Committee approved the above study at the meeting held on 12 April 2011.
- Committee guidance documents: Declaration of Helsinki, ICH, GCP and MRC Guidelines on Bio Medical Research. Clinical Trial Guidelines 2000 Department of Health RSA; Ethics in Health Research: Principles Structure and Processes Department of Health RSA 2004; Guidelines for Good Practice in the Conduct of Clinical Trials with Human Participants in South Africa, Second Edition (2006); the Constitution of the Ethics Committee of the Faculty of Health Sciences and the Guidelines of the SA Medicines Control Council as well as Laws and Regulations with regard to the Control of Medicines.
- Any amendment, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.
- The Committee must be informed of any serious adverse event and/or termination of the study.
- A progress report should be submitted within one year of approval of long term studies and a final report at completion of both short term and long term studies.
- Kindly refer to the ECUFS reference number in correspondence to the Ethics Committee secretariat.

Yours faithfully

.....
CHAIR: ETHICS COMMITTEE

Cc Dr J Bezuidenhout

339, Bloemfontein 9300,RSA ☎ (051) 405 2812 StraussHS@ufs.ac.za
Republiek van Suid-Afrika / Republic of South Africa

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

Kantoor van die Viserektor: Akademies
Office of the Vice-Rector: Academic

2 Februarie 2011

Mnr GJ van Zyl
Departement Basiese Mediese Wetenskappe
G25

Mnr van Zyl

VERSOEK NAVORSINGSTUDIE

Ek het met groot belangstelling jou navorsingsprotokol bestudeer. Dankie vir die erns wat jy toon om 'n akute probleem binne die Fakulteit Gesondheidswetenskappe aan te spreek.

In beginsel verleen ek toestemming met dien verstande dat jy aandag sal skenk aan die kommentaar wat ek deurgaans gemaak het.

Ek is wel bekommerd oor die volgende:

1. Die beskrywing en rasionaal van die navorsingsmetodolgie en teoretiese raamwerk;
2. dat daar te veel konstrukte in een vraag opgesluit is;
3. of die navorsingsprojek enige nuwe perspektiewe na vore gaan bring gegewe bestaande navorsing, soos die van Dr Jama wat dit reeds geidentifiseer het.

Sterkte vir die studie.

Vriendelike groete

Prof HR (Driekie) Hay
Viserektor: Akademies

cc Prof MM Nel
G25

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APPENDIX D

LETTER FROM LANGUAGE EDITOR

26 November 2013

Luna Bergh

55 Jim Fouché Avenue

Universitas, Bloemfontein

To whom it may concern

This is to certify that I language-edited Gerhard van Zyl's dissertation manually. He effected the changes himself. In this way both linguistic excellence and the candidate's ownership of his text were ensured.

Sincerely

Luna Bergh

Language and writing specialist