

**AN ASSESSMENT MODEL FOR THE TRAINING OF MEDICAL
POSTGRADUATE STUDENTS IN UROLOGY**

By

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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 for the first time at this university/faculty towards a Philosophiae Doctor 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 would like to dedicate this thesis to my wife and best friend, Rolien, who has been my consistent inspiration, support and source of wisdom. Without her love and sacrifice this work would not have been possible. I would also like to dedicate this thesis to my children Schalk, Hanneke, Jan-Jan and Celeste who offered me unconditional love and support throughout the course of this thesis.

*Some of us will do our jobs well and some will not,
but we will be judged by only one thing –
the result.*

Vince Lombardi (2002)

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LIST OF ACRONYMS

ABIM:	American Board of Internal Medicine
AC:	Assessment Committee
CEX:	Clinical Evaluation Exercise
CHE:	Centre on Higher Education
CMSA:	College of Medicine of South Africa
DOPS:	Direct Observation of Procedural Skills
FCU:	Fellowship of the College of Urology
FOTIM:	Foundation of Tertiary Institutions in the Northern Metropolis
HEA:	Higher Education Academy
HE:	Higher Education
HEQC:	Higher Education Quality Committee
HPCSA:	Health Professions Council of South Africa
HPE:	Health Professions Education
HSE:	Health Sciences Education
MMed:	Magister in Medicine
Mini-CEX:	Mini Clinical Evaluation Exercise
MCQ:	Multiple Choice Questions
MEQ:	Modified Essay Question
NRF:	National Research Foundation
OBET:	Outcomes-Based Education and Training
OSCE:	Objective Structured Clinical Examination
QA:	Quality Assurance
Ph.D.:	Philosophiae Doctor
RCGP:	Royal College of General Practitioners
SA:	South Africa
SAQA:	South African Qualifications Authority
SOLO:	Structure of the Observed Learning Outcomes
SoM:	School of Medicine
SAUA:	South African Urology Association
SPALHE:	Short Programme in Assessment and Learning for Higher Education
UFS:	University of the Free State
US:	University of Stellenbosch

SUMMARY

Key terms: Appeal process; assessment committee; assessment methods in formative assessment; assessment methods in summative assessment; assessment model; feedback in assessment; formative and summative assessment; Health Sciences Education; knowledge about assessment; outcomes-based education and training; postgraduate students in Urology; quality assurance in assessment; Urology assessment policy.

The researcher realised that there was a need to revisit assessment of postgraduate students in Urology and therefore decided to conduct a study on the current assessment model in Urology. The aim of the study was to develop an assessment model for postgraduate students in Urology that would comply with the principles of Higher Education (HE) and also be acceptable and advantageous to both the postgraduate students and assessors in Urology.

A study was undertaken to identify the changes that have taken place in assessment as well as the different principles of assessment that should be included in a sound assessment model. The study investigated the role of formative and summative assessment, feedback in assessment and quality assurance as part of assessment. The research included an investigation of the assessment methods that will be most suitable for the assessment of postgraduate students in Urology.

The research undertaken in this study followed a quantitative approach with some elements of qualitative research. The researcher made use of a literature review, a questionnaire survey among Urologists in South Africa and a Delphi process that included experts in the fields of Urology and HE.

In the questionnaire survey the participants were asked to answer questions about the changes in HE and the assessment methods available to assess postgraduate students in Urology. The questions in the questionnaire survey were compiled by the researcher with the help of the literature review. The information gathered by the questionnaire survey supported by the literature review enabled the researcher to prepare some statements that could be included in the proposed assessment model for registrars in Urology. The statements prepared by the researcher were presented to a Delphi panel

and they were asked to rate the statements as essential, useful or unnecessary parts of the assessment model. The Delphi panel consisted of ten experts in Urology and HE that were selected by the researcher and his moderators. A four-round Delphi process took place from September 2011 until January 2012. A total of 189 statements were presented to the Delphi panel in Round One of the Delphi process. At the end of the fourth round of the Delphi process consensus was reached on 163 out of a possible 189 statements (86%).

The researcher approached the compilation of the assessment model in three parts. In the first part the researcher proposed that assessors of postgraduate students in Urology should have adequate knowledge about assessment in HE. In the second part of the assessment model, the researcher proposed an assessment policy for the College of Urology and described the characteristics thereof. In the final part of the assessment model the researcher proposed the assessment methods that should form the framework of formative and summative assessment of postgraduate students in Urology. The researcher stressed the importance of the dissertation as the student's contribution towards the available literature in their field of study and included some proposals on the format of the dissertation project.

The results of the study indicated that there were areas in the current assessment model of postgraduate students in Urology that could be improved. The assessment model as proposed by the researcher could be considered by the College of Urologists for future use in the assessment of postgraduate Urology students. If accepted, the assessment model can also serve as an example for the other colleges of the Colleges of Medicine of South Africa to formulate an assessment model of their own.

The project attempted to make a contribution towards the improvement of assessment in urology students. The assessment model, if implemented, may assist in improvement of quality assurance in and fairness, validity and trustworthiness of assessment. It will stimulate other researchers in the field of HE to pursue other aspects of assessment that warranted further research. The assessment model can be an effective and valuable instrument to enhance student learning and produce top-class Urologists to serve the needs of the South African public.

OPSOMMING

Sleuteltermes: Appèlproses; assesseringskomitee; assesseringsmetodes in formatiewe assessering; assesseringsmetodes in summatiewe assessering; assesseringsmodel; formatiewe en summatiewe assessering; gehalteversekering in assessering; Gesondheidswetenskappe-Onderwys; kennis oor assessering; nagraadse studente in Urologie; terugvoer tydens assessering; uitkomsgebaseerde onderrig en opleiding; Urologie-assesseringsbeleid.

Die navorser het tot die besef gekom dat herevaluering van assessering in nagraadse studente in Urologie nodig was en het daarom besluit om navorsing te doen oor die huidige assesseringsmodel in Urologie. Die doel was om 'n assesseringsmodel te ontwikkel vir nagraadse studente in Urologie wat in lyn sou wees met die beginsels van Hoër Onderwys (HO) en wat ook aanvaarbaar en voordelig sou wees vir die nagraadse studente en assessore in Urologie.

'n Studie is onderneem om die veranderinge wat plaasgevind het in assessering en die beginsels wat ingesluit behoort te word in 'n assesseringsmodel, te identifiseer. Die studie het die rol van formatiewe en summatiewe assessering, terugvoer tydens assessering en gehalteversekering in assessering ondersoek. Die navorsing het ook 'n ondersoek na die geskikste assesseringsmetodes vir nagraadse studente in Urologie ingesluit.

Die navorsing in hierdie studie het 'n kwantitatiewe benadering gevolg maar het elemente van kwalitatiewe navorsing ingesluit. Die navorser het gebruik gemaak van 'n literatuuroorsig, 'n vraelys-opname onder Uroloë in Suid Afrika en 'n Delphi-proses wat kenners op die gebied van Urologie en Hoër Onderwys ingesluit het.

In die vraelys-opname is die deelnemers gevra om vrae te beantwoord oor die veranderinge in Hoër Onderwys en die assesseringsmetodes wat beskikbaar is om nagraadse studente in Urologie te assesseer. Die vrae in die vraelys-opname is saamgestel deur die navorser met behulp van die literatuuroorsig. Die inligting wat ingesamel is met die vraelys-opname ondersteun deur die inligting wat ingewin is met die literatuuroorsig het die navorser in staat gestel om sekere stellings te formuleer oor komponente van assessering wat ingesluit behoort te word by die assesseringsmodel vir nagraadse studente in Urologie. Die stellings wat deur die navorser voorberei is, is aan die Delphi-paneel aangebied en hulle moes besluit of die komponent wat deur die

stelling uitgebeeld is essensieel, bruikbaar of onnodig is as deel van die assesseringsmodel. Die Delphi-paneel het bestaan uit tien kenners op die gebied van Urologie en Hoër Onderwys en is deur die navorser en sy moderatore aangewys. 'n Delphi proses wat vier rondtes ingesluit het, het plaasgevind vanaf September 2011 tot Januarie 2012. Altesaam 189 stellings is in Rondte Een aan die Delphi paneel aangebied. Aan die einde van Rondte Vier is konsensus bereik oor 163 van die 189 stellings (86%).

Die navorser het die samestelling van die assesseringsmodel in drie dele aangepak. In die eerste gedeelte het die navorser voorgestel dat assessore betrokke by assessering van nagraadse studente in Urologie oor genoegsame kennis oor veranderinge in assessering in Hoër Onderwys moet beskik. In die tweede gedeelte van die assesseringsmodel het die navorser 'n assesseringsbeleid vir die Kollege van Uroloë voorgestel en die eienskappe daarvan beskryf. In die laaste gedeelte van die assesseringsmodel het die navorser die assesseringsmetodes voorgestel wat die raamwerk moet vorm van die formatiewe en summatiewe assessering van nagraadse studente in Urologie. Die navorser het die belang van die proefskrif beklemtoon as die student se bydrae tot die beskikbare literatuur in sy/haar studieveld en ook voorstelle oor die formaat van die dissertasie ingesluit.

Die uitslae van die studie het aangedui dat daar areas in die huidige assesseringsmodel vir nagraadse studente in Urologie was wat verbeter kon word. Die assesseringsmodel soos voorgestel deur die navorser kan oorweeg word deur die Kollege van Uroloë as die assesseringsmodel wat in die toekoms gebruik kan word tydens die assessering van nagraadse studente in Urologie. Indien dit aanvaar word, kan dit dien as voorbeeld van 'n assesseringsmodel vir die ander lede van die Kollege van Geneeskunde van Suid Afrika om hulle eie assesseringsmodel te ontwikkel.

Hierdie navorsingsprojek poog om 'n bydrae te lewer tot die verbetering van assessering van nagraadse studente in Urologie. Indien hierdie assesseringsmodel implementeer word kan dit 'n bydrae lewer om gehalteversekering van assessering te verbeter en te verseker dat assessering regverdig, geldig en betroubaar is. Dit sal ander navorsers in die veld van Hoër Onderwys stimuleer om navorsing te doen oor ander aspekte van assessering wat verdere navorsing regverdig. Die assesseringsmodel kan 'n effektiewe en waardevolle instrument wees om studente-onderrig te verbeter en topgehalte Uroloë op te lei wat aan die behoeftes van die Suid Afrikaanse publiek voldoen.

AN ASSESSMENT MODEL FOR THE TRAINING OF MEDICAL POSTGRADUATE STUDENTS IN UROLOGY

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

A paradigm shift has taken place in South Africa as far as student learning is concerned. This is reflected in the need to encourage “deep learning”, where the student’s level of understanding in a certain content area as well as the organisation of a student’s cognitive structures is assessed (Cizek 1997:27). In this study, the researcher did an in-depth study about assessment of postgraduate students in Urology with a view to develop an assessment model for postgraduate students in Urology. The need to encourage “deep learning” as opposed to the traditional surface learning where only reproduction of knowledge is rewarded, is important in postgraduate students (Biggs 2003:14). In Health Sciences Education (HSE), the assessment of skills, ethics and attitudes can be neglected when traditional methods of assessment are used.

Alternative assessment, which includes formative assessment, attitudes and ethics, has become popular (Geyser 2004:90). Two types of educators can be identified, namely:

- i) Butchers – They follow traditional assessment models and judge their learners by “cutting them to size” (Le Roux 2004:60).
- ii) Builders – They follow the alternative assessment models and try to develop learners by means of assessment (Le Roux 2004:60). A combination of traditional and alternative ways of assessment might be the perfect solution (Mueller 2003:Online).

Students’ perspective on learning is often that they should learn those things on which they will be tested. However, Mothata, Van Niekerk & Mays (2003:86) argue that assessment is more about learning than assessing and should be to the benefit of both teacher and student. SAQA defines the purpose of assessment as: “A structured process of gathering evidence and making judgments about an individual’s performance in relation to registered national standards and qualifications” (SAQA 2005:15-16).

If assessment is to be of real value, it needs to answer to a few principles namely reliability, validity, transparency and fairness (McMillan 2004:99). For assessment to become even more valuable, it needs to adhere to several principles and could have a powerful effect on motivation especially when feedback is given to students. According to Black and William (1998a:141), self-assessment skills taught as part of formative feedback can enhance students' achievements. Assessors do make mistakes during assessment and the impact of these mistakes could be underestimated (McMillan 2004:104). The mistakes of assessors and the impact thereof on learners have prompted the researcher to pursue this topic.

Different forms of assessment can be used and the researcher endeavoured to take into account most forms to develop an assessment model that will suit the postgraduate urology student. Continuous assessment throughout the training period is necessary and assessment should become part of a student's learning experience (Sutherland & Peckham 1998:101). Assessment of complex performances in real-life situations must be implemented, because it not only assesses competence, but also practical knowledge in a given situation (Biggs 2003:152). Different approaches could be used to assess any particular candidate. Workplace and community-based assessment can give an indication of a student's attitudes, ethics, skills and interpersonal relationships. Group-based assessment and learning contracts are other possibilities to assess the individual candidate and will be investigated.

A wide range of assessment instruments exists and the researcher tried to examine a number of these to identify the most suitable instruments for a postgraduate student in Urology. The researcher used a questionnaire survey among Urologists involved in the training and assessment of registrars to request their opinion about different aspects of assessment. The information gathered by the analysis of the questionnaire survey combined with the knowledge the researcher gathered during the literature review was used to formulate statements about assessment in postgraduate students. These statements were then tested in a Delphi process where experts in Health Professions Education and Urology were requested to participate.

Constructive and formative feedback to students during their training period is of utmost importance. Feedback is information given to students providing them with insight regarding their progression, strengths and weaknesses. Different subtypes of feedback can be used, namely (JMU Learning and Teaching 2004:Online):

- i) Diagnostic feedback: Feedback done before the student starts training. This is done after information about the abilities, experience and knowledge base of every individual student has been analysed by the appointment panel.
- ii) Formative feedback: Guidance and motivation while the student is receiving training.
- iii) Ipsative feedback: Assessment of students measured against their own previous performances.
- iv) Summative feedback: This is assessment done after their final examination.

Feedback could also have a negative impact on student learning and it should be kept in mind by the assessors. Extreme language like "brilliant or appalling" should be avoided (Boud 1994:16) and written feedback should be legible and clear (Race 2000: 163-165).

The aim of the first chapter is to orientate the reader about the study. It starts by providing background to the study, which is followed by the problem statement and the research questions. The overall goal, aim and objectives will be stated, followed by the demarcation and scope of the study. The significance of the study will be highlighted, followed by a brief overview of the research design and methods of investigation. The chapter is concluded by a preview of the subsequent chapters, and a short conclusion that summarises the content of Chapter 1.

1.2 BACKGROUND TO THE RESEARCH PROBLEM

Postgraduate assessment of Urology students during their final examination is currently exclusively of a summative nature (SAUA 2006:2). Both the MMed (Urology) and FCU (SA) consists of three examinations. The primary and intermediate examinations provide an opportunity to "form" the students and can therefore be regarded as a form of formative assessment. The situation is complicated by the fact that there are currently two exit examinations to qualify as a Urologist. These two examinations differ in several aspects; among others the curriculum and assessment. The Fellowship of the College of Urologists (FCU) is the exit examination preferred by the traditionally English universities, while the traditionally Afrikaans universities prefer the MMed (Urology). All the Urology postgraduate students that started their training as of 2010 will have only one professional exit examination namely, the FCU that will be offered by the Colleges of Medicine of South Africa (CMSA) under contract of the

Health Professions Council of South Africa (HPCSA). This examination will entail a theoretical and clinical part (cf. Table 1.1) as well as a research component.

TABLE 1.1 COMPARISON BETWEEN DIFFERENT EXIT EXAMINATIONS

CHARACTERISTIC	FCU	MMED
Clinical evaluation	Short cases Objective Structured Clinical Examination (OSCE)	Long Cases Short cases
Theoretical evaluation	Papers; Orals	Papers; Orals
Number of examiners	6	1-2 External; 1 Internal
Location of examination	Central	Local

Since 2008, a research dissertation has been an integral part of the MMed degree (UFS 2008:41), while it was only made a compulsory component of the FCU for students that started their training in 2010.

Different examiners are used for the two exit examinations and there is no policy on quality assurance mechanisms to ensure consistency in the exit examination. This can lead to the assessment being subjective and open to the influences of “hawks” versus “doves” (Davis & Ponnampereuma 2009:349).

1.3 PROBLEM STATEMENT AND RESEARCH QUESTIONS

The problems that were addressed were the shortcomings in currently used forms of assessment models in the examination of the postgraduate Urology student (SAUA 2006:3) as explained above and discussed below. Quality assurance during assessment is not optimal and should be improved to become an integral part of the assessment (SAUA 2006:3).

In spite of a thorough search of several databases including the Nexus Database System of the National Research Foundation (NRF), no recent article could be traced that refers to an assessment model for postgraduate students in Urology in the South African environment. A scholarly work by Friedrich-Nel (2003) that describes an assessment model in outcomes-based education and training for health sciences and technology was used as a source to assist the researcher as a point of departure in the compilation of a similar assessment model for postgraduate students in Urology (Friedrich-Nel 2003:Appendix B p4-30).

The problem areas in the current assessment models in Urology include the following:

- The formal assessment is exclusively of a summative nature
- No formal, formative assessment is currently used. Formative assessment plays a very important role in modern higher education and should be included in any training module
- The role of feedback during training is not formally conceptualised and is neglected in most cases
- Two different qualifications can be obtained in Urology and there is no uniformity in the assessment models of the two final examinations. Different ways of assessment are used to obtain the same goal; namely, to produce a qualified, well-skilled urologist
- There is no formal training for assessors in postgraduate Urology
- Assessors do not need a qualification in Health Professions Education to qualify as assessors
- No standard quality assurance measures are currently in place to ensure that assessment methods comply with certain minimum requirements.

In conclusion it can be stated that a formal assessment model for postgraduate students in Urology is necessary. The researcher is of the opinion that modifications in the current assessment model can improve the quality of assessment. The aim of the researcher is to make proposals regarding changes in the current model that can lead to improvement in assessment of postgraduate Urology students.

In order to address the stated problem, the following research questions were asked:

- i. How can the lack of an assessment model in postgraduate training in Urology be conceptualised and contextualised? (This was done via a literature study.)*
- ii. What are the factors that play a role in the assessment of postgraduate students in Urology? (This was done with a questionnaire survey.)*
- iii. What are the criteria that are essential in compiling an assessment model for postgraduate training in Urology and how can these criteria be validated by a panel of experts? (This was established by means of a literature study, the results of the questionnaire survey as well as a Delphi panel.)*

1.4 OVERALL GOAL, AIM AND OBJECTIVES OF THE STUDY

1.4.1 Overall goal of the study

The overall goal of the study was to make a contribution to the field of assessment in postgraduate Urology education and training.

1.4.2 Aim of the study

The aim of the study was to develop an assessment model for postgraduate training in Urology with a view to ensuring quality.

1.4.3 Objectives of the study

To achieve the aim of this study, the following objectives were pursued:

- i. Conceptualising and contextualising the lack of an assessment model for postgraduate training in Urology. [This was done via a literature study.]*
- ii. Identifying the factors that play a role in the assessment of the postgraduate student in Urology. [This was done via a questionnaire survey.]*
- iii. Determining criteria for an assessment model for postgraduate training in Urology. [This was done via a literature study as well as from the results of the questionnaire survey.]*
- iv. Testing the criteria for the model by a panel of experts. [This was done by a Delphi process.]*
- v. Finalising the model and making recommendations on principles and purposes of assessment, quality assurance in assessment and assessment methods that should be used during both formative and summative assessment of the Urology registrar.*
- vi. These objectives address research questions 1-3 in view of a holistic and scientific product.*

1.5 DEMARCATION OF THE FIELD AND SCOPE OF THE STUDY

This study fits into the field of Health Sciences Education and because of the application of the study in the field of Urology, it can be classified as being

interdisciplinary. The study is about an assessment model that includes formative and summative assessment and feedback.

The participants in the questionnaire needed to have a postgraduate qualification in Urology and at least three years' experience in training and assessment of urology registrars.

The participants in the Delphi survey consisted of:

- Experts in the field of Urology.
- Experts in the field of Health Professions Education (HPE).

Participants in the questionnaire were excluded from the Delphi panel. Ten experts were included in the final Delphi panel. At the conclusion of the literature review and the questionnaire survey among Urologists, certain criteria that form a part of the assessment model were identified by the researcher. These criteria were presented to a panel of experts in a modified Delphi process. The opinion of the Delphi panel regarding the criteria that were developed by the researcher as well as their comments were added to the open-ended questions that form a part of the Delphi process and were used to formulate the final assessment model.

In a personal context, the researcher in this project is a qualified Urologist with ten years' experience in private Urology practice and eight years' experience as Head of an academic department as well as experience in assessment of postgraduate students in Urology. The researcher identified the need for an assessment model and decided to research the subject. The researcher was tasked by the College of Urologists to compile the portfolio for registrars in Urology, which is a compulsory part of the training of registrars since 2010. This project was completed successfully in 2009.

1.6 THE VALUE AND SIGNIFICANCE OF THE STUDY

An assessment model for postgraduate training in Urology will add value to education in Urology in the following ways:

- It could be used as a benchmark in the assessment of postgraduate Urology students at national level

- It could be used as a quality control mechanism for education in Urology
- It could contribute to the bigger platform of Health Sciences Education as it could be useful in other disciplines of clinical medicine.

The significance of the study is that it will be the first formal model for assessment of postgraduate students in Urology in a South African scenario. The aim of this research was to develop an assessment model that will be accepted by the Urology community and serve as a benchmark for assessment in Urology at national and international level.

1.7 RESEARCH DESIGN OF THE STUDY AND METHODS OF INVESTIGATION

1.7.1 Design of the study

This is a quantitative and descriptive study with qualitative elements. The qualitative elements consist of open-ended questions where the participants were encouraged to add their personal comments. This method of research will be described in more detail in Chapter 3.

1.7.2 Methods of investigation

The study was based on an analysis of the currently available literature. The empirical part of the study consisted of a questionnaire survey and a Delphi process.

The literature survey focused on the current situation in postgraduate assessment of Urology students, the changing perspectives in Higher Education, the purposes and principles of assessment and the role of feedback in student training. This process will be described in more detail in Chapter 3.

The literature study was followed by a questionnaire survey distributed among Urologists that are involved in postgraduate training and assessment. The questionnaire survey used a quantitative approach with elements of qualitative research. The aim of the questionnaire survey was to collect the necessary information as stated in the second research objective. To obtain this information, structured questions were formulated. Respondents were anonymous and had the

opportunity to comment and make recommendations by answering a number of open-ended questions.

Information gained by the literature review and the questionnaire survey was used to compile the statements of the Delphi questionnaire. Participants asked to serve on the Delphi panel had to give their consent to participate in the Delphi process. Letters of invitation to participate were sent to the expert panel members.

The information gathered by the literature study, the questionnaire survey and the Delphi process were used to compile an assessment model for postgraduate students in Urology.

A detailed description of the population, sampling methods, data collection and techniques, data analysis and reporting and ethical considerations will be given in Chapter 3.

A schematic overview of the study is given in Figure 1.1.



FIGURE 1.1: A SCHEMATIC OVERVIEW OF THE STUDY

[This diagrammatic presentation was compiled by the researcher, Wentzel (2010), as part of the Ph.D. research project].

1.8 IMPLEMENTATION OF THE FINDINGS

The final assessment model will be made available to the Department of Urology, School of Medicine, UFS and the Academic Committee of the College of Urologists for discussion and possible implementation. The model will also be made available to other disciplines in the field of Medicine for adaptation and use if found to be suitable.

The aim is to make a contribution in the field of Health Sciences Education and to improve assessment of postgraduate students in Urology. Therefore, the research findings will be submitted to academic journals in Health Sciences Education for publication. Another objective is to present the findings of this research at the biennial congress of the College of Urologists.

1.9 ARRANGEMENT OF THE REPORT

To provide more insight into the topic, the methods used to find solutions and the final outcome of the study will be reported as follows:

In Chapter 1, ***Orientation to the study***, the background to the study was given and the research questions were stated. The overall goal, aim and objectives of the study were discussed. Thereafter, the research design was discussed briefly and the methods employed to gather information were mentioned to give the reader an overview of what to expect from the study. The field of the study was demarcated and the value that the study would add to the development of an assessment model for postgraduate study in Urology was proposed.

In Chapter 2, ***Postgraduate assessment in Urology - the lack of an uniform model***, an extensive literature research was conducted in order to conceptualise and contextualise the shortcomings in the assessment model for postgraduate training in Urology and to review the new trends in assessment in Health Sciences Education as well as the different methods of assessment currently used to assess postgraduate students in Urology. The advantages and disadvantages of the different methods will be discussed.

In Chapter 3, ***Research design and methodology***, the research design and the methods used to gather the data will be discussed in detail. The data collection methods and data analysis will be discussed. The Delphi technique where the opinion of experts was used to test the criteria for assessment identified in the literature research and the questionnaire survey, will be described. The construction of the Delphi process and the way the data would be processed will also be discussed in this chapter.

In Chapter 4, ***Results and discussion of the findings of the questionnaire survey***, the results of the questionnaire survey as data gathering method were reported, analysed and discussed.

In Chapter 5, ***The results of the Delphi process and a discussion of its findings***, the different stages of the Delphi process were analysed and the findings reported.

In Chapter 6, ***An Assessment model for the training of medical postgraduate students in Urology***, the model was provided after the final analysis of the results of the Delphi process. The results of the literature study, the findings of the research questionnaire and the results of the Delphi process were contextualised and incorporated in the assessment model developed by the researcher. The assumed impact of the assessment model on postgraduate training in Urology was provided as well as possible extensions to the current study.

In Chapter 7, ***Conclusions, recommendations and limitations of the study - a synopsis of the study***, an overview of the study, conclusion, recommendations and the limitations of the study were provided.

1.10 CONCLUSION

In Chapter 1, the background and introduction to the research that was undertaken as part of the preparation to develop an assessment model for registrars in Urology were provided. As part of the research design, the methods of investigation were mentioned briefly. These methods, as well as the data gathering methods and data analysis, will be discussed in detail in Chapter 3 as part of the chapter on research design and methodology.

In the next chapter, ***Postgraduate assessment in Urology – the lack of a uniform model***, an extensive literature review was undertaken to investigate the current changes in the perspectives of learning and assessment. The different assessment methods that can be used to assess postgraduate students in Urology were analysed and advantages and disadvantages were emphasised. At the end of the chapter the reader had a good idea of current perspectives in Health Sciences Education and the limitations that there are in the assessment of postgraduate Urology students.

CHAPTER 2

POSTGRADUATE ASSESSMENT IN UROLOGY – THE LACK OF A UNIFORM MODEL

2.1. INTRODUCTION

International research and developments in the field of assessment have caused a move away from traditional assessment methods and advocate a more constructive approach to assessment that will enhance student learning (Geyser 2004:90). According to the researcher it becomes more and more clear that the medical teacher, that used to be a clinician with limited knowledge of developments in medical education, should adapt and become an expert on Health Sciences Education as well.

It is also necessary that assessment methods and techniques should change to fit in with new trends in medical education. Formative assessment with feedback to the student has become as important as summative assessment and an optimal model for formative assessment is mandatory. It has become important to assess attitudes, clinical and communication skills and interpersonal relationships to improve the quality of training in Urology (James 1994:2).

The aim of the first literature review was to obtain a critical perspective on the current model in postgraduate Urology. Thereafter a thorough literature study was performed to analyse and review the assessment principles as described in Outcomes-based Education (OBE). The literature study assisted the researcher in compiling a questionnaire survey that was sent to Urologists that are involved in the training and assessment of postgraduate students in Urology. The aim of the broader literature review was to formulate questions about different aspects of assessment in OBE. The opinion of the respondents to the questionnaire survey was asked regarding the questions that were developed with the information gathered from the literature review. With the help of the questionnaire and the literature review, certain statements were formulated. These statements were to be tested by a Delphi process where experts in the assessment of Urology students as well as experts in the field of Health Sciences Education considered these statements. After consensus of the Delphi panelists, a final assessment model was proposed.

2.2 AN OVERVIEW OF THE DIFFERENT ASPECTS THAT WILL BE DISCUSSED IN THIS CHAPTER

Figure 2.1 provides a diagrammatic overview of the different aspects and elements which will be subsequently described in chapter 2.

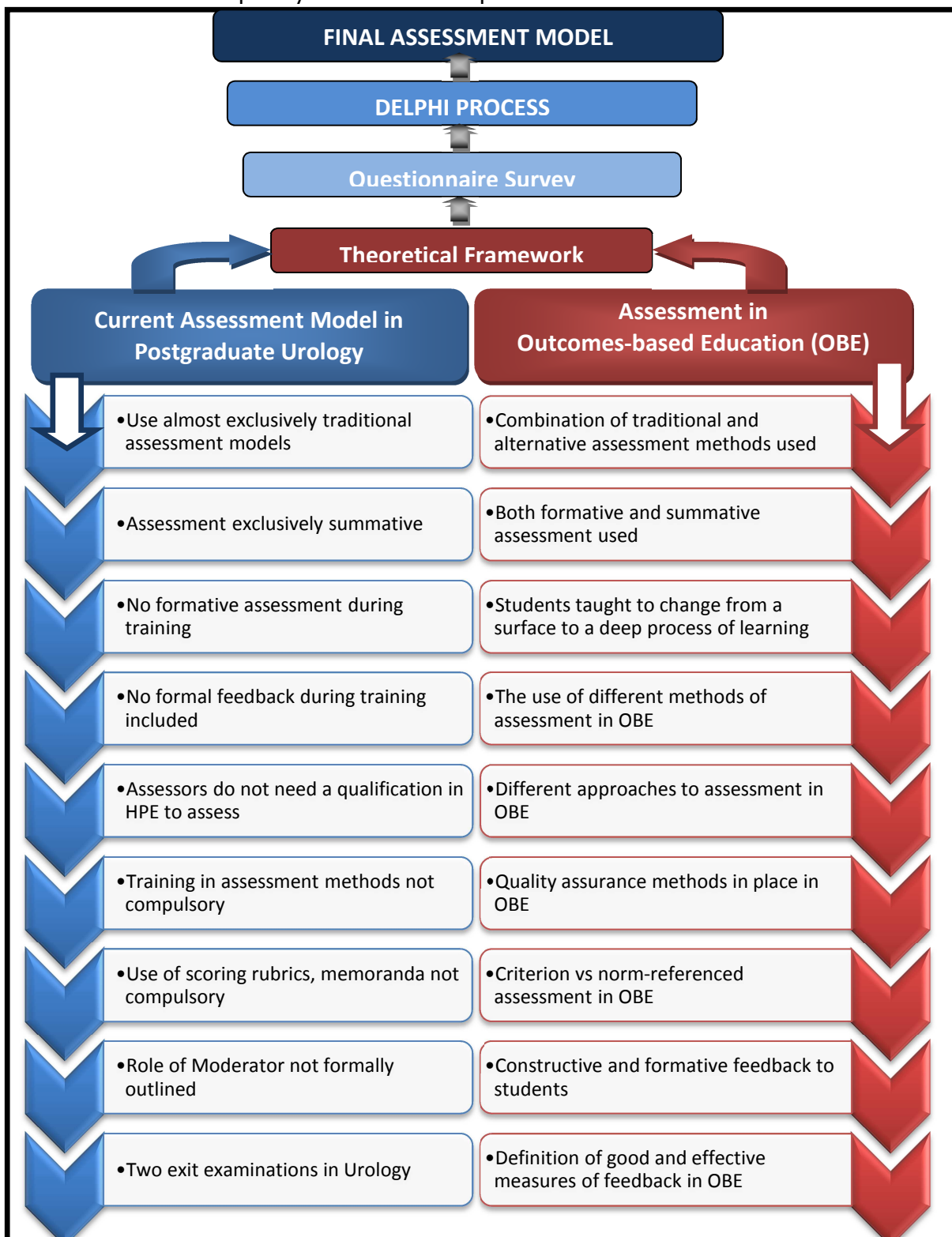


Figure 2.1 DIAGRAMMATIC OVERVIEW OF THE DIFFERENT ASPECTS AND ELEMENTS THAT WILL BE DISCUSSED [This diagrammatic overview was compiled by the researcher, Wentzel (2011) as part of the Ph.D. project]

2.3 THE CURRENT ASSESSMENT MODEL IN POSTGRADUATE UROLOGY

There is a lack of consistency in the assessment model currently used in Urology and several aspects of the model need to be transformed to be in line with the principles of Higher Education (HE). The current situation in Urology will be discussed, followed by a discussion of the deficiencies in formative and summative assessment in the currently used model. Feedback as part of formative and summative assessment and the qualifications of the assessors used during assessment will be scrutinised. Formal training in Health Sciences Education (HSE) may be necessary and the use of memoranda and scoring rubrics during assessment must be included in the assessment policy of the College of Urologists. The functions of the Moderator in every examination will be discussed and the researcher will explain the problems associated with the two different exit examinations that can be taken to qualify as an Urologist. In the following paragraphs these aspects will be discussed in more detail to illustrate the deficiencies that exist in the assessment of Urology registrars.

2.3.1 The current situation in Urology

Summative assessment of the postgraduate Urology student is emphasised during the final examination. This corresponds well with the traditional way of assessment where the educator/assessor is the sole and unconditional judge. Registrars that started their training in the beginning of 2010 have to complete a portfolio. It is a pre-requisite that the portfolios must be assessed by the convener of the Fellowship of the College of Urologists (FCU) final examination before the candidate will be allowed participation in the examination (College of Urologists 2010:3). There are some assessments of a formative nature included in the portfolio for Urology registrars (Appendix A). These formative assessments have not been validated yet and it has to be seen what the advantages/disadvantages thereof will be in the final assessment of the Urology registrar. Currently no mention has been made of the role of the moderator in the assessment of a portfolio.

Diagnostic assessment of registrars prior to their selection is complicated by the role played by the provincial Departments of Health. Because the provincial Departments of Health are the main funders of the posts, they play a major role in the selection process. The assessment of a candidate's prior knowledge and an opinion about the potential of the candidate to become an Urologist (both of these form part of

diagnostic assessment) are important because it will enable the academic departments of Urology to appoint the best possible candidates.

2.3.2 Formative and summative assessment models

Until the start of 2010, formative assessment during student training was not compulsory and it will not be compulsory until the first portfolios have to be presented before admission to the FCU final at the end of 2013 (College of Urologists 2010:4). Although some universities do incorporate formative assessment, it is not in the form of standardised, coordinated assessment. Formative assessment does not count during final assessment at all, although this will change with the first FCU final examination at the end of 2013. The use of a logbook to document the surgical skills that a trainee has acquired during his/her training has been proposed and has been used erratically for the past few years. Although this was a step in the right direction, it is not compulsory and as yet has not been structured formally. According to the College of Medicine (CMSA) policies, all member Colleges were asked to develop a portfolio, which became compulsory for all registrars that started their studies at the beginning of 2010 (CMSA 2009:Online). Only time will tell the value of the portfolio in formative assessment and it is currently not clear if it will have a positive effect on formative assessment and feedback during the training of the registrars.

2.3.3 Feedback as part of assessment

Because of the lack of a uniform formative assessment policy among the different training institutions of postgraduate students in Urology, there is not a structured and coordinated feedback policy during their training (Personal communication, members of the College Council of Urology). Feedback should be an integral part of formative assessment and can help students to identify areas in their training that need more attention. Well-structured feedback can also be a motivating factor and can contribute towards a more complete end-product (Brown 2001:Online).

The lack of feedback by both the student and the examiner at the end of the final summative assessment can be detrimental as well. There is no time for feedback after the final examination and neither the candidate nor the lecturer has a chance to discuss the examination and the outcome thereof with each other. Questionnaires should be developed whereby both the student and the examiner can reflect on the

examination process, content, logistics and standard. This can lead to improvements in the examination process (JMU Learning & Teaching 2004:3).

2.3.4 Qualifications of assessors

The assessors that are used in the assessment of Urology registrars are qualified in the speciality of Urology and must have observation experience in the assessment of Urology registrars before they will be allowed to act as assessors. Before becoming an assessor, the potential assessor has to attend one or two FCU final examinations as an observer to become familiar with the assessment process (Personal communication, C.F. Heyns:2008). This is called "specific" training and is unique to the field of study and can be gained by experience over a period of time.

Every four years, all the members of the College of Urologists have a ballot to select the President, Secretary and four additional members to the College Council of the College of Urologists. All heads of academic departments of Urology that are not selected on the College Council are invited by the President to become co-opted members of the council of the College of Urologists. Any fellow or associate member of the College of Urologists may become an examiner after serving as observer at a FCU (Final) examination. Every year, on completion of the bi-annual College examinations, the Secretary of the College Council writes a letter to all fellows of the College of Urologists and invites them to nominate and vote for the assessors of the two examinations of the following year. It is thus a democratic process and the assessors are chosen according to the number of votes they have received. As mentioned before, nobody can be selected as an assessor if they had not been an observer at least once in a previous FCU final examination (Personal communication, C.F. Heyns:2008).

As can be seen from the previous paragraphs, assessors do have much experience in the field of Urology and adequate "specific" training in the field of assessment. What is lacking, is formal training in the field of Health Sciences Education (HSE). Formal training in assessment can also be called "generic" training, which refers to the type of training that is not specific to the study field and can be of value to assessors in different study fields. A qualification in HSE is not a requirement when assessors are selected and appointed for the FCU final examination (Personal communication members of the College Council of Urology 2008). The researcher is not aware of any College in the CMSA where a qualification in HSE is a requirement for selection as an

assessor. Recently, the Faculty of Health Sciences, University of the Free State (UFS) has embarked on a mission to train assessors in Higher Education (Van Tonder 2006:SPALHE course) but it is currently not obligatory to complete the Short Programme in Assessment and Learning in Higher Education (SPALHE) course to become an assessor.

The researcher believes this is a potentially cause of concern, but also realises that it is a controversial subject among Urologists at the moment. The aim of this research project is to argue for good knowledge of HSE and the application thereof. A sound knowledge of the principles of HSE can assist assessors during assessment of Urology students.

2.3.5 Training of assessors

The CMSA are involved in the arrangement of several workshops where different aspects of the assessment process are addressed (CMSA 2011). This is a step in the right direction but the researcher believes that the constituent Colleges should become involved in a similar process so that this training becomes accessible to more members. One of the problems of assessors in the current scenario is that Urologists in private urology practice are used as assessors. These persons are very busy and do not have the time to attend these workshops. The College of Urologists has always believed that academic as well as private urologists should be involved in the final urology examination to cover the whole spectrum of the specialisation field. Assessor training is essential not only to ensure the accountability of the College of Urologists, but also to protect the rights of students.

2.3.6 Memoranda and scoring rubrics in assessment

The use of memoranda and/or scoring rubrics in the assessment process is another controversial subject that needs to be addressed. Although efforts have been made by the Council of the College of Urologists to request memoranda with the questions that the assessors prepare for the examinations, it is currently non-obligatory (College of Urologists 2010:6). Different assessment methods are used in the final summative examination and it is a fact that in some forms of assessment, for instance Multiple-Choice Questions (MCQ's) a memorandum is easy to prepare and absolutely obligatory (Brown 2001:Online). In other forms of assessment, for example essay questions, the

preparation of a memorandum is more difficult and even controversial, because more than one thing might be correct in an essay question (Brown 2001:Online). The use of memoranda should be an essential component of assessment and this research project will aim to prove the worth of memoranda in assessment and incorporate it in the proposed assessment model.

2.3.7 The role of the Moderator in assessment

The role of the moderator in the final assessment of postgraduate urology students is not clear at the moment. In the College examination, the Moderator plays an important role during the Objective Structured Clinical Examination (OSCE), the long and short cases and the oral examinations. However, the role of the moderator in the written part of the FCU final examination is not clearly defined (College of Urologists 2010:8). It is not expected of the moderator to moderate the papers for the written part and he/she does not moderate a sample of the papers after the assessment process has been completed. This problem will also be addressed as part of the research project.

The CMSA has an appeals policy but there is no specific appeal process for the College of Urologists. The Council of the College of Urologists has acted as an appeals committee in the past, but no formal appeals committee exists. The appeals of dissatisfied students can only be considered after the completion of the final examination and not before the invitation to the clinical part of the examination. There is not an appeal committee in place to consider the appeals and complaints of dissatisfied students. This problem has been addressed by the CMSA at the General meeting in October 2011 (CMSA 2011). The need for an individual or a committee other than the moderator to oversee this process has been expressed at this meeting. The CMSA wants an appeals process to be in place and an individual/committee to hear these appeals and resolve the problems. This has not yet been formalised by the College of Urologists.

2.3.8 Exit examinations for qualification as an Urologist

The situation is complicated by the fact that, currently, two different postgraduate Urology qualifications exist, namely the Fellowship of the College of Urologists (FCU) and MMed (Urology) degrees. As was pointed out before, the traditional English

universities encouraged their students to pursue the FCU while the traditional Afrikaans universities pursued the MMed degree (Personal communication I.M. Viljoen 2006).

Both qualifications consists out of three parts, namely

- i. Primary Examination. This focuses on the basic medical sciences namely anatomy, physiology and basic anatomic pathology that are applicable to Urology.
- ii. Intermediary Examination. This examination focuses on basic surgical principles, critical care and biochemistry. The FCU (Part II) examination also includes urogenital pathology as a separate part of the Intermediary Examination (CMSA 2009: Online)
- iii. Final Examination. This includes assessment of the whole spectrum of urological conditions, including medical treatment and surgical techniques used in Urology (CMSA 2009:Online).

At the UFS, a research project/dissertation that has to be completed before admission to the final MMed examination is compulsory for students that started their training in Urology as from 2008 onwards (UFS 2008:52). This research project differs from one institution to another and can include publication of an article(s) in an accredited Urology publication. The MMed (Urology) entails five years of training of which four years is spent in the training of Urology and one year rotation in the Departments of General surgery and Critical care. The College of Urologists have adapted a policy that the completion of a research project is compulsory before the FCU degree can be awarded. However, this rule is only applicable for registrars that started their training in 2010 and thereafter. These students will complete their studies at the end of 2013 but until then the research project is not compulsory in order to obtain the FCU (College of Urologists 2010:6). The Health Professions Council of South Africa (HPCSA) requires four years of training in a registered post as well as a specialist qualification before a person can be registered as a specialist.

In 2012, the Health Professions Council of South Africa (HPCSA) stated that only one exit examination is required for registration as a specialist (HPCSA 2012:1). The Chairman of the HPCSA, Prof. L.M. Moja, indicated that the CMSA was the preferred provider of the exit examination, but also mentioned that no contract had been finalised. She also mentioned that the draft agreement with the CMSA will be discussed with the Deans Committee before the agreement would be tabled at the Medical and

Dental Professions Board (HPCSA 2012:1). No progress has been made since then and a formal contractual agreement has not been reached yet (Personal Communication A. Venter 2012).

2.4 ASSESSMENT ACCORDING TO OUTCOMES-BASED EDUCATION

Outcome-based Education (OBE) is a system that concentrates on the expectation that the teachers have of their students at the completion of their studies. It does imply that the teacher has to provide the education that enables their students to reach that endpoint (Smith 2009:163). The concept of OBE has been embraced by several medical schools all over the world (Liu, Huang & Liu:2006 and Simpson, Furnace, Crosby *et al.* 2002).

OBE is characterised by the development of clearly defined outcomes that the student needs to achieve before the end of the course and the development of a curriculum, learning strategies and learning opportunities that enable the student to achieve these outcomes. In OBE the assessment process must match the learning outcomes and the students must be assessed individually to ensure that they have achieved the learning outcomes. A remediation and feedback process must be in place to help the students and enrich assessment as part of the learning experience (Harden 2002:117). The learning outcomes help students to study more effectively and give an indication of what they can achieve or gain by attending a learning experience for instance a lecture (Jenkins and Unwin 2001:Online). Learning outcomes are helpful to teachers also, it helps them to plan the content of their teaching, helps them to select the appropriate teaching strategy and enables them to share with their colleagues what they desire to achieve with a particular outcome. If the teachers use the learning outcomes correctly, they can also set a blueprint for assessment and ensure that the most appropriate methods are used during assessment (Jenkins and Unwin 2001: Online).

2.4.1 Shift in perspectives on student learning

A paradigm shift in assessment strategy took place in South Africa since the origin of OBE (Le Roux 2004:59). It is reflected in the changing perceptions of the nature of assessment and its main purposes.

There is a need to encourage deep learning – that is to assess the learner's level of understanding within a content area and the organisation of a learner's cognitive

structures (Cizek 1997:27). If only the reproduction of knowledge is rewarded, it will encourage surface learning among the students (Sutherland & Peckham 1998:99).

The two extremes of assessment, namely traditional assessment versus alternative (constructive) assessment should be seen as two parts of a continuum and should both be part of final assessment. Learning “for” assessment (traditional) and learning “from” assessment should both be included in the module (Geyser 2004:91). Assessment has a “backwash” effect that could be either positive or negative. Negative “backwash” can be defined as the situation where the learners rely on old examination papers to guide them to pass the examination while positive “backwash” is when assessment is aligned with the curriculum and forms a part of the learning experience (Geyser 2004:91). Experts see assessment reform as the cornerstone of educational reform (Biggs 2000:141-142).

In the South African situation, educational reform has many implications for the assessor. According to Luckett and Sutherland (2000:99) these include:

- The assessor has a greater accountability towards communities, learners and the government
- The assessor has to cater for a diverse body of students
- The assessors need to assess a learner’s ability to integrate knowledge, skills and attitudes
- The assessor has to ensure that students become lifelong learners
- Assessment needs to shift from a content-based to an outcomes-based approach and
- The assessor has to include a wide range of assessment methods as part of his/her assessment.

2.4.2 Surface and deep approaches to learning

2.4.2.1 *Surface approach*

When the student uses this approach of superficial or rote learning, the intention of the student is to get the task out of the way with minimum trouble while still achieving the requirements. Surface learning is about memorization like listing facts instead of addressing an argument. However, it is a misconception that memorization always

indicates a surface approach (Webb 1997 in Biggs 2003:22). Memorization sometimes is appropriate (like learning lines for a play) but it becomes a surface approach when more “understanding” is required.

Teaching and assessment methods often encourage a surface approach and therefore need to be addressed. In using the surface approach students concentrate on isolated facts and treat items independently, thereby failing to get down to the real essence of the task. This makes the student negative about learning and makes learning “a task to get out of the way” (Marton & Saljo 1996 in Biggs 2003:12).

FACTORS THAT ENCOURAGE A STUDENT TO ADOPT THE “SURFACE APPROACH”

According to Biggs (2003:15) various factors encourage students and teachers to adopt the “surface approach” to learning. These factors can be summarised as follows:

Student factors

- An intention to achieve only a minimal pass
- Non-academic priorities exceeding academic ones
- Insufficient time, too high a workload
- Misunderstanding the requirements of the curriculum and the perception that factual recall is enough
- Cynical, anxious students
- When the student is unable to understand the content at a deep level.

Teacher factors

- The teacher does not bring out the intrinsic structure of the topic during his/her lecture
- The teacher provides the students with insufficient time to complete their tasks successfully and thoroughly
- The attitude of the teacher creates anxiety amongst students because the teacher has low expectations of his students.

The perspectives of the student and teacher should not be seen separately; most often they affect one another. It is easier to create a surface approach, rather than to support a deep approach (Trigwell & Prosser 1991:251).

2.4.2.2 *Deep approach*

The deep approach arises from the need to engage the task appropriately and meaningfully; therefore the students concentrate on underlying principles and themes of the task at hand. Students will therefore acquire the knowledge to fulfil the task but also make sure that they understand the full picture (Biggs 2003:16). Students using the deep approach feel more positive about their learning because they are able to view the bigger picture.

FACTORS THAT ENCOURAGE STUDENTS TO ADOPT THE DEEP APPROACH

According to Biggs (2003:16) various factors encourage students and teachers to adopt the “deep approach” to learning. These factors can be summarised as follows:

Student factors

- An intention to engage the task purposefully and meaningfully
- The appropriate accumulation of background knowledge
- A preference to work conceptually rather than with unrelated detail
- Interaction with other students (Gibbs 1992:10)
- A well-structured knowledge base.

Teacher factors

- Teachers that try to bring out the structure of the subject and to elicit active response from the students
- Teaching to build on what students already know and eradicate misconceptions
- Teachers that assess for structure rather than isolated facts
- The creation of a positive working atmosphere, emphasizing “depth” of learning rather than breadth of coverage.

There are certain assessment strategies that can be used to encourage a “deep” approach to learning among learners. The workload must be realistic and acceptable

and assessment should be non-threatening and non-anxiety provoking. In this regard formative assessment is a better tool than summative assessment. Formative feedback should be given at regular intervals while the assessment criteria should be clear and understandable to students (Rust 2002:149).

Assessment tasks should be "real world" tasks with meaning to the student beyond just the passing of the assessment. If not, students are likely to justify plagiarism or another form of cheating just to pass the assessment (Bannister & Ashworth 1998 in Rust 2002:150, Carrol & Appleton 2001:Online). Students are more motivated if they have a choice in their assessment tasks provided that the learning outcomes are met. Learning contracts (Knowles 1986 in Codde 2006:Online) and portfolios (Redman 1994:11) could be an example of this type of assessment.

Assessment strategies such as independent project work, group work and problem-based learning increase learner interest and interaction.

2.4.3 Levels of performance (Taxonomies)

2.4.3.1 *Cognitive levels of performance*

Knowledge about the different types of cognitive demands is essential when an assessor is designing and marking examination scripts (Brown 2001:Online). In 1956 Bloom developed the "*Hierarchy of the Cognitive Domains*" which is better known as Bloom's taxonomy (Bloom, Engelhart, Furst, Hill & Kratwohl 1956:18-20). Until today this pyramid plays an important role in the design and marking of different assessment methods.

Bloom originally described six levels or cognitive domains in the taxonomy, moving from the lowest thinking process to the highest (Bloom *et al.* 1956:18-20). According to Dalton and Smith (1986:36-37) the six cognitive levels of performance can be summarised as follows (The examples given are adapted to HSE and Urology in particular by the researcher):

- i. Knowledge: In short this means what students can recall from their studies that were done prior to the assessment.
- ii. Comprehension (Understanding): This shows that students are able to understand the facts and compare or translate these facts into their own ideas.

For example: Compare the health risks of smokers versus non-smokers.

- iii. Application: This is when the student is able to apply their acquired knowledge to a new problem and show their competence to solve the problem.

For example: What is the first-choice anti-hypertensive drug in a patient with cardiac failure and why?

- iv. Analysis: The ability to break a problem into its constituent parts and establish the relationships between the different parts of the problem.

For example: Describe the effect of a unilateral nephrectomy on the remaining kidney in an eight-year old boy.

- v. Synthesis: The ability of the student to combine different elements of a problem and provide a solution.

For example: Describe how testosterone deficiency syndrome can affect your patient at psychological and organic levels and explain how your treatment plan will solve the problem.

- vi. Evaluation: This is where the student is able to make a judgement about certain information and defend their opinion about it.

For example: Describe why you think that a laparoscopic partial nephrectomy is the appropriate operation for your patient in spite of evidence proving that a open procedure has better oncologic results.

The original Bloom's taxonomy was revised by a team of psychologists under the leadership of a former student of Bloom, Lorin Anderson (Oz TeacherNet 2006:Online). This lead to a number of improvements in the existing structure that can be summarised as follows (Oz TeachersNet 2006:Online):

TABLE 2.1 THE ORIGINAL BLOOM'S TAXONOMY VERSUS ANDERSON'S REVISED TAXONOMY

LEVEL	BLOOM'S ORIGINAL TAXONOMY	ANDERSON'S REVISED TAXONOMY
Remember	Recognise, list, describe, identify, retrieve....	Can the student RECALL information?
Understand	Interpret, exemplify, summarise, infer, paraphrase....	Can the student EXPLAIN ideas or concepts?
Apply	Implement, carry out, use...	Can the student USE new knowledge in another familiar situation?
Analyse	Compare, attribute, organise, deconstruct....	Can the student DIFFERENTIATE between constituent parts?
Evaluate	Check, critique, judge, hypothesise...	Can the student JUSTIFY a decision or course of action?
Create	Design, construct, plan, produce...	Can the student GENERATE new products, ideas or ways of viewing things?

In the revised format the six major categories in the original Bloom's taxonomy were changed from a noun to a verb form, thereby reflecting that the taxonomy is a form of thinking and therefore an *active process*. In addition, the word knowledge was inappropriate to describe a category of thinking and was replaced with the word remembering. Comprehension and synthesis were changed to understanding and creating respectively, in order to better reflect the nature of the thinking defined in each category (Pohl 2000:Online). The comparison between the original Bloom's taxonomy and the revised Bloom's taxonomy is depicted in Figure 2.1.

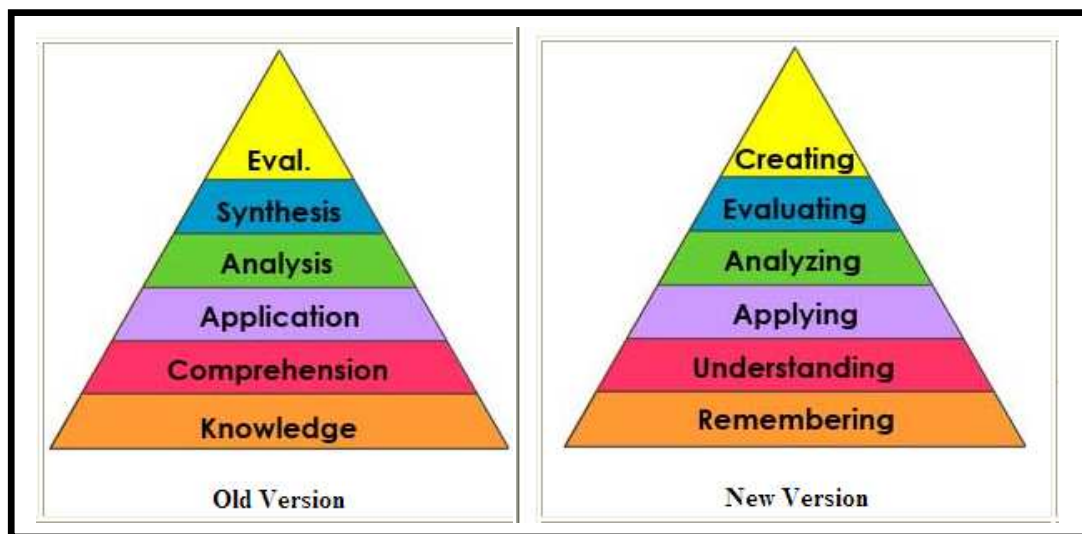


FIGURE 2.2 A COMPARISON BETWEEN THE ORIGINAL AND THE REVISED BLOOM'S TAXONOMY (Forehand 2005:Online)

In 1982 Biggs and Collis described an alternative form of taxonomy called the SOLO (Structure of the Observed Learning Outcomes). His scheme may be used to analyse students' learning tasks, to decide if objectives have been reached and to assess students' work.

The five levels of the Biggs and Collis scheme are (Atherton 2011:Online):

- Pre-structural - The student does not understand the point of the task at all;
- Uni-structural - A few aspects of the task are picked up but the understanding is minimal;
- Multi-structural - Several aspects of the task are picked up but they are treated separately;
- Relational - Components are integrated in a coherent role and each component is contributing towards the completed task and

- Extended abstract - The components are integrated and re-conceptualised giving an indication of the student's own perspective of the task.

The five levels of Biggs' schema are: (www.glyndwr.ac.uk:Online):

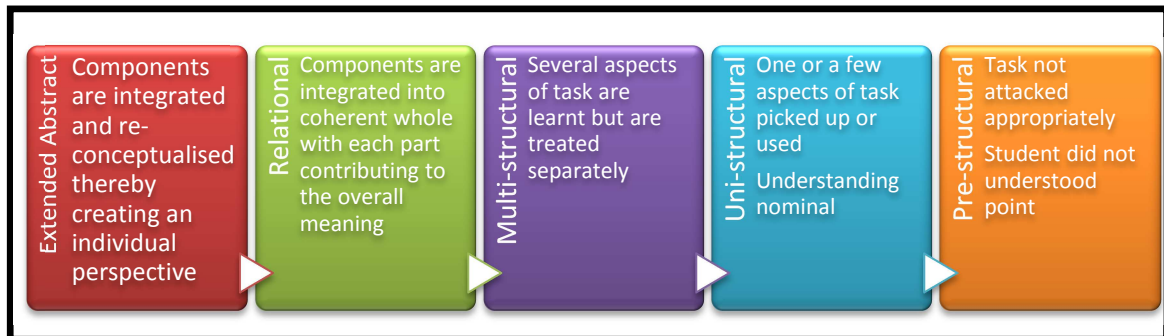


FIGURE 2.3 THE FIVE LEVELS OF BIGGS' SCHEMA (Atherton 2011:Online)

2.4.3.2 *Practical skills level of assessment*

Practical skills can be assessed by directly observing a student's performance in a practical class or during assessment of products that the students have created. A student's performance can be assessed by marking a "yes" or a "no" on the mark sheet or alternatively more sophisticated methods can be used. An example of a more sophisticated method is when a scale is used that has three possibilities (James 1994:5):

- The student needs a lot of assistance
- The student needs some assistance
- The student performs without assistance.

2.4.3.3 *Attitudes and values*

These are more difficult to assess and can include direct observation, written tests or student self-reports. In this instance a continuum can also be used to grade the student's attitudes and values. An example is to evaluate the student's appreciation of the importance of professional ethics by using the following scale (James 1994:5):

- No observable appreciation
- Some observable appreciation
- Well-developed appreciation.

2.4.4 Different forms of assessment

Assessment is a structured process for gathering evidence and making judgments about an individual's performance in relation to registered national standards and qualifications (SAQA 2001:15).

The process of assessment includes (Scriven 1999:39):

- Gather evidence by using different assessment methods;
- Compare evidence to assessment criteria;
- Formative assessment - make decision on learner's progress, provide feedback and enable learner to improve on previous performances;
- Summative assessment – decide if a learner passes/fails or if a learner is competent or not yet competent.

2.4.4.1 *Formative Assessment*

The definition of formative assessment is assessment done in order to intervene with the intent to improve (Friedman Ben-David 2009:303). Learners' attitudes, skills and knowledge should be monitored throughout the training period (Biggs 2003:142). Feedback should be given and this type of assessment is used as a tool to improve the performance of learners during their final assessment (summative assessment).

The advantage of formative assessment is that it allows students to monitor their own learning progress and provides information about their level of performance. It is also helpful to teachers because it allows teachers to generate profiles of the strengths and weaknesses of every individual student (Friedman Ben-David 2009:303). When students were asked about the purpose of assessment in the ideal world, the importance of feedback and the evaluation of the curriculum as well as the fact that assessment should guide student learning were ranked among the top five purposes of assessment (Duffield & Spencer 2002:882). The aforementioned purposes are part of formative assessment and accentuate the importance of formative assessment. The main advantage of formative assessment is that it allows for the development of assessment as a learning experience which will be appreciated by students and teachers alike (Abrahams 1998:80).

2.4.4.2 *Summative Assessment*

This type of assessment takes place at the end of a training period. It indicates if the learners have acquired the predetermined minimum outcomes that are necessary to achieve the qualification (Biggs 2003:142).

A few traditional principles of assessment have become outdated; these outdated principles are summarised as follows (Le Roux 2004:58):

- The final examination is THE BIG assessment opportunity;
- Students do not have to know which assessment methods are used by the assessor – it is the assessor's prerogative;
- Assessment offers an assessor the opportunity to catch students out on things that they do not know;
- Individual students are measured against the class average – (Norm-referenced assessment).

In summative assessment the teachers need to make decisions including good or bad, ready to move on or the student needs to repeat the programme (Friedman Ben-David 2009:303). The assessors need to ensure that the learner has reached the predetermined minimum qualifications required by the programme and has achieved a level that allows him/her to be promoted to the next level of the programme. It is inevitable that it is also used to identify the best candidates in the specific programme (Friedman Ben-David 2009:303). Therefore, summative assessment is the best method for selection and promotion purposes including graduation. Students report that the main purpose of summative assessment is that it ensures the competence of a student in a learning domain and that summative assessment is a good predictor of the student's performance as a doctor (Duffield & Spencer 2002:882).

2.4.4.3 *Alternative assessment*

Alternative assessment has become more popular as part of OBE. In this type of assessment the emphasis is not only on the learner's knowledge and skills during the final assessment opportunity (compare traditional assessment) but focuses also on alternative types of assessment including (Le Roux 2004:58):

- i. Formats – This form of assessment involves gathering of information about the learner’s achievements e.g. portfolios, logbooks, etc.
- ii. Attitudes – The development of the learner’s attitude towards patients and colleagues
- iii. Ethics.

Two types of trainers can be identified namely (Le Roux 2004:60):

- i. Butchers: They follow traditional assessment models. They judge their learners and aim at “cutting them to size”
- ii. Builders: Those trainers focus on the development of the learners by means of assessment (therefore they follow the alternative model of assessment).

The differences between the two models are highlighted in the following table:

TABLE 2.2 THE DIFFERENCE BETWEEN “BUTCHERS” AND “BUILDERS”

TRADITIONAL ASSESSMENT “BUTCHERS” MODEL	ALTERNATIVE ASSESSMENT “BUILDERS” MODEL
• Mainly summative	• Formative, summative and diagnostic (identify strengths and weaknesses)
• Educator is the sole judge of successful acquisition of knowledge (trainer centred)	• Assessment of learner’s level of understanding in a content area (learner centred)
• Surface approach to learning	• Deep approach to learning
• Assessment is an “add-on” to learning programmes	• Assessment is an integral part of learning programme
• Learn for assessment	• Learn from assessment
• Assess learning content	• Assess curriculum outcomes
• Caters for a homogeneous student body	• Caters for diverse student body
• Limited range of assessment methods	• Wide range of assessment methods
• Limited credibility of results	• Greater credibility of results
• Purpose of assessment is seldom explained to learners	• Purpose of different ways of assessment is explained to learners
• Norm referenced (Assessment by comparison)	• Criterion referenced (Assessment by competence)
• Do not provide feedback to learner’s responses	• Constructive feedback is given to learners
• Seldom aligned with quality assurance	• Assessment aligns with quality assurance policies

(Adapted from: Geyser (2004:90-111))

Advantages of alternative assessment

- Assessment of knowledge and skills during the same assessment opportunity

- It includes assessment exercises and self-assessment of a student's own performance as well as the performance of other students. In this way students form part of the assessment process (McMillan 2004:15)
- Recent research has found that effective formative assessment enhances student learning (Black & William 1998b:20). Feedback provided to the students helps them to make early adjustments to the learning process and achieve better results.

Assessment techniques should be matched to the purpose thereof and can include both traditional and alternative methods of assessment to be effective. Recent trends such as making standards and criteria public, will improve both traditional and alternative ways of assessment (McMillan 2004:17).

2.4.4.4 *Traditional assessment*

Every educational institution strives to produce productive citizens and therefore the institutions have to teach their students a certain amount of knowledge and skills to become productive citizens. To determine if they achieved their objectives the institutions have to assess their students. Therefore the curriculum drives the assessment (Mueller 2000:Online).

2.4.4.5 *Authentic assessment*

Authentic assessment is about the assessment of complex performances in real life situations. In this type of assessment not only the foundational competence but also the practical knowledge is assessed (Biggs 2000:152).

Authentic assessment focuses on assessment of knowledge, thinking and skills in real life situations. Authentic assessment involves the following (Tombari & Borich 1999:150):

- It focuses on solving problems and accomplishing tasks like those done by professionals in the field.
- Assessment occurs over time to provide meaningful feedback to students.
- Learning and assessment contexts are similar to "real life" situations.

Authentic assessment focuses on the problem solving and the accomplishment of tasks in a “real life” situation. The assessment takes place over an extended time period in order to provide meaningful feedback to students (Tombari & Borich in McMillan 2004:150).

Authentic assessment can be summarised as follows (Mueller 2003: Online):

- An educational institution’s mission is to develop productive citizens.
- To be productive the student must be able to perform meaningful tasks in “real life” situations.
- Educational institutions must support the students to become proficient at these tasks.
- To determine their success the educational institutions must decide if students can perform meaningful tasks in “real life” situations. In this model assessment drives the curriculum because teachers determine the tasks that the students need to perform and then develop the curriculum (Planning backwards).

What we need is a combination of authentic and traditional assessment because the two types of assessment complement each other (Mueller 2003:Online). The two assessment methods form a part of a continuum that is illustrated by the attributes (and differences) of the two assessment models summarised in the following table:

TABLE 2.3 TRADITIONAL VERSUS AUTHENTIC ASSESSMENT

TRADITIONAL	AUTHENTIC
• Selecting a response	• Performing a task
• Contrived	• Real
• Teacher structured	• Student centred
• Indirect evidence	• Direct evidence

(Adapted from Mueller 2003:Online)

In traditional assessment students are asked to make their choice from a few alternatives (select a response) while in authentic assessment they are asked to perform a more complex task. In traditional assessment the student needs to recall or recognize facts, in contrast, in authentic assessment the student is asked to construct something or perform a task after receiving the facts.

2.4.4.6 *Continuous assessment*

Continuous assessment integrates teaching and assessment while feedback forms a major part of continuous assessment. This method of assessment will help learners to adjust their learning process during their studies because they will be able to realise the extent of their learning problems at an early stage. This makes assessment a part of the students' learning experience (Sutherland & Peckham 1998:101). Examples of continuous assessment techniques include portfolios, logbooks and journals.

2.4.4.7 *Integrated assessment*

Integrated assessment is seen as an important mechanism to present evidence of applied competence (SAQA 2005:11).

Integrated assessment is used to assess the ability of students to combine their theoretical knowledge and practical skills in order to achieve a defined purpose. It measures the extent to which students have integrated their knowledge, skills and personal qualities and if they have reached the required standard, thereby ensuring that the candidate is a consistently competent individual in "real life" situations (SAQA 2005:62). During integrated assessment a variety of assessment tools, methods and techniques is used to assess learners' performance. It also involves acquiring knowledge from other sources such as supervisors' reports, testimonials and student portfolios. The successful implementation of integrated assessment includes the use of innovative methods of assessment to contribute towards assessment as a learning experience for the student (CHE 2001:112).

2.4.4.8 *Quantitative and qualitative assessment*

Quantitative learning is seen as a process where learning performances are measured in units which mean that they are represented by a word, an idea or a view point. Units are either correct or incorrect; therefore correct units are transformed into marks which become an index of the learners' performance of learning. Units are worth the same and learners need a certain number of correct units to succeed (Biggs 2000:149).

Qualitative learning does not focus on the final score but concentrates on how the performance matches the outcome. Quantitative assessment concentrates on the comparison of the performance of a learner with the objectives and does not compare learners with each other; therefore every learner's assessment is independent of any other learner's (Biggs 2000:149-151).

2.4.4.9 Performance assessment

In performance assessment the teacher must make a judgment about the demonstration of a skill or a competency to perform a certain task. Performance assessment can sometimes be confused with terms like authentic assessment which means the demonstration of a skill or a competency in a "real life" situation. Performance assessment may or may not be authentic (McMillan 2004:198).

Performance assessment can be described as a type of assessment where students have to create, produce or construct something. This involves sustained work which can last for days or weeks and students have to explain and justify what they are doing.

Multiple criteria and standards are pre-described and students need a deep understanding and reasoning skills to successfully complete the task. The assessor must be trained well to be skillful at making judgments and scoring because there is no single correct answer in performance assessment (McMillan 2004:199).

TABLE 2.4 A COMPARISON BETWEEN THE STRENGTHS AND WEAKNESSES OF PERFORMANCE ASSESSMENT

STRENGTHS OF PERFORMANCE ASSESSMENT	WEAKNESSES OF PERFORMANCE ASSESSMENT
• It integrates assessment with instruction so that learning occurs during assessment	• In this type of assessment it is difficult to establish reliability
• It provides more opportunities for formative assessment	• Scoring may be subjective and therefore create measurement error
• It is more authentic than other assessments so students get tested in "real life" situations	• Inconsistency in student's performance may lead to inaccurate conclusions
• It is a good method to engage and involve students in a more active way	• It requires a lot of time and effort from teachers
• It provides alternative ways for students to show what they can do because emphasis is on skill assessment	• It has a limited ability to generalize to a bigger domain of knowledge (that means you can only assess a limited amount of knowledge at a given time).
• It allows teachers to develop criteria whereby they can identify successful performance	
• It encourages self-assessment and measures application of knowledge	

(Adapted from McMillan 2004:201-202)

There is no single assessment instrument that can measure all the necessary requirements for the delivery of a professional service to the patient simultaneously (Miller 2009:333). Miller (2009:333) proposed a framework for clinical assessment that progresses through four phases namely knows (knowledge of), knows how (describes how the specific clinical skill is performed), shows how (where the student is able to demonstrate the specific clinical skill) and does (where the student is able to perform the specific skill in a “real life” situation). Performance based assessment can assess most of these levels thereby ensuring that a variety of clinical skills that are necessary to become a successful physician is assessed during the same assessment opportunity (Marks & Humphrey-Murto 2009:333).

The Objective Structured Clinical examination (OSCE) as introduced by Harden and Gleeson (1979:46) is an example of an assessment method that can assess different clinical and other skills in a performance-based scenario. Each student performs the same series of tasks at a specific OSCE station and is judged according to a standardised scoring sheet or rubric (Marks & Humphrey-Murto 2009:334). Multiple skills can be assessed during an OSCE including the interpretation of radiographs, ECG’s and laboratory investigations. It is also possible to assess more complex skills like basic surgical skills and interaction of a student with the healthcare team.

The reliability of an OSCE examination can be increased by using more stations or lengthening the time spent at a specific station (Petrusa 2002:684). It is universally accepted that the length of an OSCE examination should be between 10 and 20 minutes to be reliable (Marks & Humphrey-Murto 2009:334). To plan a good OSCE is a cumbersome and time consuming task. When planning an OSCE, it is useful to have a checklist in order to remember all the necessary elements of the examination. The examiners should also meet in advance to prepare a blueprint for the examination in order to decide on the specific cognitive areas that should be assessed during the OSCE. Standardised checklists or rating scales should be developed in advance to indicate what the performance of the student was at every one of the OSCE stations.

2.4.4.10 *Criterion-referenced and norm-referenced assessment*

Assessment in Outcome Based Education and Training (OBET) makes use of criterion-referenced assessment where the achievements of students are assessed individually

(SAQA 2001:24). Criterion-referenced assessment is often compared with norm-referenced assessment. The two forms of assessment are compared in Table 2.5.

TABLE 2.5 COMPARISON BETWEEN CRITERION-REFERENCED AND NORM-REFERENCED ASSESSMENT

CRITERION REFERENCED ASSESSMENT	NORM-REFERENCED ASSESSMENT
• Makes judgment about learners' work against previously determined criteria	• Makes judgment about learners by measuring them against each other
• Criteria are pre-determined and part of the standard	• Assessments are curriculum-based
• An individual is assessed in comparison to the pre-determined criteria	• Learners are assessed and compared with one another
• The criteria are objective and attempts to be as clear as possible in terms of the nature of the assessment	• Associated with grading and ranking of learners, averaging of scores or grading of learners and adjustment of scores to fit the profile of the learner group
• Where grading is used learners are graded against the criteria for assessment	

(Adapted from SAQA 2001:25)

2.4.5 Purposes of assessment

2.4.5.1 Purpose of assessment from a student's view

Through the years several experts in HE have made statements about the importance of assessment. Some of these statements are included here to illustrate that assessment should be seen as a very important part of the learning process and include: "Assessment defines the actual curriculum" (Ramsden 1992:1); "Assessment is at the heart of the student's experience" (Brown & Knight 1994:1) and "If you want to change student learning then change the methods of assessment" (Brown, Bull & Pendlebury 1997:7).

Students learn those things on which they expect to be tested. This is called "backwash". Backwash is usually seen as negative (Crooks 1988:467) but could be positive if the assessment is aligned to what the students should be learning.

Seen from a teacher's perspective the objectives of the learning module determine the type of teaching activities they will apply and ultimately decide the format of assessment. Contrary to that a student's perspective is that assessment determines the effort they will put into their learning activities and that will decide the outcome, which is if they pass or fail (Biggs 2003:141). The teaching activities of the teacher and

learning activities of the student should be directed towards the same goal namely that the students should be taught the curriculum.

Both formative and summative assessment is essential in student learning. In a sense they are similar because both match the performance of the student with performance that is expected by the teacher. However, at some point final judgment needs to be made. The difference between the two types of assessment is summarised in an anonymous quote which states: "When the chef tastes the sauce it is formative, when the customer tastes it, it is summative" (Biggs 2003:142).

According to Brown (2001:Online) the three main purposes of assessment are to give a license to students to proceed to the next stage (or graduation), to classify or rank the performance of students and to improve students' learning. If a license to proceed is the key concern, assessment tasks should be based on core knowledge and skills and pass/fail threshold should be defined accurately. If the primary purpose of the assessment is to place the students in rank order, the assessment tasks should be able to differentiate between the capabilities of a wide range of students (Brown 2001:Online). Course assessment should include formative assessment and this "in-course assessment" should contribute to a multiple point summative assessment (Brown 2001:Online).

2.4.5.2 Purpose of assessment according to the different forms of assessment

The assessment purpose (and the learning outcomes) determines when a learner will be assessed and what methods and techniques will be used (Geyser 2004:92-94).

Diagnostic assessment

Diagnostic assessment determines a learner's strengths and weaknesses as well as prior knowledge. By doing this one are able to assess if a learner has the potential to be admitted to a particular programme. This assessment method can also assist in the development of modules and programmes.

Formative assessment

The best way to describe this type of assessment is the “day-by-day” assessment. As part of the assessment, feedback is given to learners which will improve their knowledge and skills. Formative assessment is essential to support the teaching and learning process and assists the student in his/her further learning. Formative assessment helps the teacher to determine when the learner will be ready for summative assessment. It could be self-assessment, assessment by peers, in groups or even computer-assisted assessment. Credits or certificates are not awarded during formative assessment because it is developmental (SAQA 2001:26).

Feedback during formative assessment can motivate learners through their successes while indicating areas where the learners still need to work on and improve. It promotes deep learning and consolidates work done up to date and helps the learner to build a profile of work that has been done (Brown 2001:Online).

Summative assessment

This takes place at the end of a learning period to determine if a learner is competent or not. When competence is declared, credit is given, recorded and reported (SAQA 2001:26). During summative assessment one can make use of a variety of assessment methods from a variety of sources. Formative and summative assessments are seen as “ends of the same continuum” (Brown & Smith 1997:15). A single assessment system cannot serve all the purposes of assessment therefore both formative and summative assessment should be used.

According to Geyser (2004:94) there are similarities as well as differences between formative and summative assessment. Similarities include the fact that both can form part of an assessment programme and both collect evidence of learner competence. Both forms of assessment enhance deep learning, require feedback although at different times in the module and can assist in the improvement of learning in development programmes.

Differences between formative and summative assessment can be summarised as follows:

TABLE 2.6 DIFFERENCES BETWEEN FORMATIVE AND SUMMATIVE ASSESSMENT

FORMATIVE ASSESSMENT	SUMMATIVE ASSESSMENT
It helps the learner to identify strengths and weaknesses during the module	It judges the learner's performance in terms of pass or fail
Feedback during formative assessment is informal and helps the learner to improve their performances	Feedback during summative assessment is formal and consists of marks and some comments

(Adapted from Geyser 2004:94)

2.4.5.3 Secondary purposes of assessment

The secondary purposes of assessment include the fact that a student's knowledge can be translated into an arbitrary point (grading). Assessment is used to select the best available candidates and to decide if a student is ready to enter a programme. Assessment can also serve as motivation to help students to concentrate on learning areas that need attention. Feedback given after assessment can improve the quality of learning of the students and the quality of teaching of the teachers (James 1994; 1-20).

Keeves (1994:364) describes the purposes of assessment as "the basis for instructional decisions". These decisions can include placement decisions, formative (monitoring) decisions, diagnostic decisions and summative (otherwise called attachment) decisions.

Mothata *et al.* argue that assessment is more about learning than testing and should be to the benefit of both teacher and student (Mothata, Van Niekerk & Hays 2003:86).

SAQA defines the purpose of assessment as follows: "A structured process for gathering evidence and making judgment about an individual's performance in relation to registered national standards and qualifications" (SAQA 2001:16).

2.4.6 Credibility as principle for the assessment of learning

For assessment to be of real value it needs to adhere to a few credibility principles. These principles will be discussed in the following paragraphs.

2.4.6.1 Reliability

Reliability is about consistency that means the same judgments should be made in the same or different contexts while assessing the particular learning area. Reliable

assessment will not be influenced by factors like the assessor's bias in terms of gender, ethnic origin and sexual orientation, assessors that are not of the same standard and assessors that are inconsistent in their marking, even if it is late at night and they are marking the last paper. If more than one group of students is writing the same test but on different days, briefing of the students should contain the same detail of information and students should be given the same opportunity to ask questions. Moderation of marking is an essential part of assessment and should include double marking, sampling and cross moderation (adapted from Geyser 2004:96). The administrative part of assessment should be consistent especially if more than one group is assessed at the same time.

2.4.6.2 *Validity*

Validity implies that assessment methods should assess what they set out to assess rather than what is easy to assess. In order to achieve validity assessors should state clearly which outcomes are being assessed, they should use an appropriate source of evidence and an appropriate method of assessment and select the most appropriate methods of assessment (SAQA 2001:17).

2.4.6.3 *Transparency*

It is necessary that all parties involved in the process of assessment have to know exactly what the assessment is about. This includes the learners, assessors and the moderator(s). In order to be transparent, assessment must adhere to the specific criteria, some of which will be discussed in the next paragraph.

Students should know beforehand what is expected of them and what is defined as satisfactory performance and should receive equivalent levels of support prior to the examination. They should have access to regulations of assessment and should be assured that they will receive feedback and information on how to improve their performance. Students should know that they will be supported in case of failure (Geyser 2004:96-97).

2.4.6.4 *Fairness*

All learners should be treated equally and fairly. To achieve that, assessors should adhere to assessment criteria and the outcomes that are assessed should be outlined clearly at the start of the module that will be assessed. There should be no comparison between the learners with regard to performance especially if there is background differences and moderation, re-assessment and appeal processes should be in place. Different assessment methods should be employed in order to broaden the field of assessment while equal support to all learners should be given by lecturers (Geyser 2004:97).

2.4.6.5 *Practicality*

To complete a certain assessment task the learners need enough time and other facilities like books, equipment and support staff (Geyser 2004:97).

2.4.6.6 *Realistic workload*

Everybody that is involved in assessment should guard against “over assessment” (i.e. too many assessment opportunities). Therefore assessment schedules should be published in advance as an integral part of the module/curriculum, there should be enough administrative support available to support assessment and staggered deadlines should be put in place to spread the work evenly for staff and learners (Geyser 2004:98).

In conclusion: Fairness + Validity + Reliability + Practicality = Credibility (SAQA 2001:16).

2.4.7 Other general principles of assessment in student learning

Certain principles are needed to guide the professional development of an assessor. Some of these basic principles will be discussed in the following paragraphs.

2.4.7.1 *Professional judgement*

Assessment is a process of professional judgment – professional judgment is the foundation of assessment even if modern practices such as machine scoring and multiple choice items are used (McMillan 2000:Online).

2.4.7.2 *Principles of measurement evidence and evaluation*

Assessment is based on separate but related principles of measurement evidence and evaluation (McMillan 2000:Online). Measurement evidence is where the assessor differentiates degrees of a trait by assigning scores from evaluation (interpretation of the scores). For this assessment technique principles and conceptual understanding of statistical analysis is needed (McMillan 2000:Online). These concepts and techniques are part of an essential language that assessors need to understand to convey results in an appropriate manner to the learners (Schafer 1991:3). The assessors need the skills to interpret evidence effectively and make judgments about the meaning of the results.

A memorandum can be defined as an “inventory” or model answer to serve as the standardised measure of evaluation and also serve as a guide to allocate marks to students according to the answers on their marking sheets (Smit 2004:9). Rubrics in contrast, are scoring guides that consist of pre-defined performance criteria which are used to evaluate students’ work during performance assessment (Mertler 2001:Online). Rubrics can also be used to give genuine feedback to learners and help them to re-direct their efforts (Kansas State University 2004:Online).

Huba and Freed (2000:153-155) described certain basic guidelines on how to develop an effective rubric. They explain that the assessors need to define the qualities of good and poor work and to decide on the number of levels that they want to include in their scoring rubric (for example: distinction, pass above average, pass average, fail). The assessors then need to write a clear description for every level of achievement in the specific area of learning that they want to assess (for example, if they want to assess the clinical skills of the student, they need to write a clear description of what they assess as pass above average and so forth) (Huba & Freed 2000:153-155).

2.4.7.3 *Tension of teachers and students*

According to McMillan (2000:Online) decision making in assessment is influenced by tension for both the teacher and the student. The fact that different assessment methods exist, creates tension for the teacher if they want to identify and use the best available assessment methods. The teacher has to consider if the assessment should be purely summative or a combination of summative and formative assessment and what percentage of the final mark should be the result of the formative assessment (McMillan & Nash 2000:32).

2.4.7.4 *Influence of assessment on motivation and learning*

According to McMillan (2000:Online), assessment influences student motivation and learning. Assessment has powerful effects on motivation and learning especially when feedback is given and time for revision is utilized (Wiggins 1998 in McMillan 2000:Online) Black and William's research in 1998 showed that self-assessment skills, taught as part of formative feedback enhance student achievement (Black & William 1998a:21).

2.4.7.5 *The role of error in assessment*

It is a fact that assessment contains error – teachers need to know something about error of measurement, reliability coefficients and confidence intervals. It is important to realize that error is typically underestimated (Rogosa 1999 in Atkin & Black 2003:114).

2.4.7.6 *Different methods of assessment*

Good assessment uses multiple methods. A complete picture of what students understand and know is put together in pieces comprised of different approaches to assessment. Diversity promotes effective learning and prevents boredom amongst learners and assessors (Geyser 2004:98). Assessment methods can include different forms of assessment including self-assessment, peer assessment, group-based assessment and workplace-based assessment.

2.4.7.7 *Efficiency in assessment*

According to McMillan (2000:Online) good assessment should be efficient and feasible. Time and resources of both the student and the institution must be used optimally.

2.4.7.8 *Technology in assessment*

Good assessment appropriately incorporates technology – new forms of assessment (computer-based, internet-based) should be phased in gradually without “overusing” new technology and resources (McMillan 2000:Online). These new techniques must first be evaluated in terms of their validity, fairness and reliability before incorporation into an assessment policy.

2.4.7.9 *Planning assessment techniques*

James (1994:Online) proposed that assessment should be planned well in advance and the planning of the assessment must include several principles that will be discussed in the following paragraphs.

Assessment requirements must be communicated clearly and accurately to one's students and should reflect the goals (outcomes) that were given to the student at the beginning of the module. Workload and time constraints of both the students and the assessors must be considered when planning one's assessment. Assessment procedures must be reviewed from time to time to ensure that your assessment methods are valid and reliable. Assessment is part of the learning experience and not only the termination; therefore attention should be given to feedback that could lead to improvement of students' results. All courses have “essentials” and “optionals” (James 1994:3). Ensure that one's students are assessed on the essentials for achieving a good understanding of the core knowledge.

2.4.7.10 *Weaknesses in assessment*

There are some common weaknesses in assessment that teachers should guard against. According to Brown (2001:Online) these weaknesses include assessment that does not match the stated outcomes and overuse of specific types of assessment (for that reason always use multiple assessment methods). In some cases students do not

know about or do not understand assessment criteria and are given insufficient time to prepare for assessment. When planning one's assessment beware of work overload for students and teachers and inadequate or superficial feedback given to students. Marking between different assessors must be consistent and staff must be given sufficient time for marking and moderation of papers (Brown 2001:Online).

2.4.8 Assessment approaches

2.4.8.1 *Computer assisted assessment*

This is an ideal tool to use when one work with big groups and want to address the problem of providing individualised, detailed feedback to large groups of students. It is the ideal way to approach multiple choice questionnaires but can also be used for peer and self-assessment, short answer tests and internet projects (Luckett & Sutherland 2000:110; Sutherland & Peckham 1998:101).

2.4.8.2 *Workplace and community-based assessment*

With this approach professional skills can be developed in a "real world" context while at the same time knowledge is gained by studying the theory (Luckett & Sutherland 2000:110).

2.4.8.3 *Group-based assessment (Group assessment)*

Learners work in teams and may be assessed individually, as a group or a combination of both techniques. Using these methods by means of which attitudes and skills such as accountability, effort and teamwork can be assessed, the teacher relies on peer assessment to help with these assessments. This type of assessment can be used for both formative and summative assessment (Geyser 2004:107).

Race (1995:Online) proposed some guidelines on group assessment if it is used for summative purposes. In the first place group assessment must be valid, reliable and transparent while the assessment task must be divided in such a way that individual contributions can be identified easily. Marks must be given for the overall team product but also for individual performances or one can award each team member with the same mark for their product, but then you have to add an individual assessment like a

written examination or oral. Peer assessment of the group members by one another may contribute to this individual mark and constructive feedback must be given to all groups.

2.4.8.4 *Learning contracts*

These are linked to self-assessment. Learners are required to develop and maintain their own portfolio to keep track of their achievements. The focus is on development of generic skills or critical outcomes across a learning programme. This is especially useful in postgraduate programmes (Luckett & Sutherland 2000:110).

2.4.9 Methods of assessment

A wide range of assessment instruments exists. Ideally, students should experience a wide range of assessment instruments during their training. These assessment methods should be used for formative assessment and provide feedback. Most of the assessment methods that will be discussed in this section are used as summative assessment instruments at the end of a student's training. However there are instruments that can be used for both formative and summative assessment included in this section. These include among others portfolios and assignments (Race 1995:Online).

Before the discussion of the different assessment methods that can be used to assess postgraduate Urology students, it is important to say a few words about the importance of the correct choice of assessment instruments. Assessment measures performance but it is also very useful as part of a feedback mechanism. Assessment gives information about a student's level of performance but also measures the effectiveness of the teaching situation and the appropriateness of the content input (McAleer 2009:318).

Before an assessor decides on a particular assessment method, the assessor should decide on the specific aspects of the programme that he/she wants to assess and the reason(s) why they want to assess. The assessment method that is chosen should be valid, reliable and feasible (McAleer 2009:318). It is important that the assessment method that is chosen measures the outcomes that were provided to the students at the start of the module/programme. There is a difference between a method of

assessment and an assessment instrument. An example in this regard is when the method of assessment is a written examination the assessment instrument can be essay questions or multiple choice questions (MCQ) (McAleer 2009:318).

Assessors need to know exactly “what they want to assess” by defining educational objectives (Harden 1979:68). Mager (1984:318) described educational objectives as “a description of a performance you want learners to be able to exhibit before you consider them competent”. Some of the objectives that should be considered are the task that the student needs to perform, the conditions under which the performance should be exhibited and the level of performance that will be considered acceptable (McAleer 2009:318). A good educational objective is one that can be observed and measured by the assessor and can be carried out by the students.

When the assessors choose the assessment instruments they have to decide what the output measure of the objective should be. They need to decide if the output measures should contain a knowledge component, a skill component, an attitudinal component or a combination thereof (McAleer 2009:319).

2.4.9.1 *Clinical cases*

If this assessment method is used the assessor can measure application of knowledge, analysis, problem-solving skills, evaluative skills and attitudes towards their patients. More complex cases may be challenging to design and develop but short cases are usually easy to design and mark (Brown 2001:Online).

2.4.9.2 *Essays*

Essay questions can be formulated in a variety of ways. According to James (1994:11) these can include standard questions which usually starts with verbs like Discuss, Describe, Comment, Explain and a few others, case studies in which “real life” situations are given to the student which is then questioned about the given scenario and structured questions where a series of questions is asked about the case scenario.

Race (1995:Online) mentioned some advantages of the essay questions including the fact that it allows for student individuality and expression and reflects the depth of

student learning. Most students are familiar with the technique of writing essays and most assessors are used to the marking of essays.

Essay writing is an art in itself and students with good writing skills may have an advantage in this regard. On the contrary, students from a previously disadvantaged background may have an unfair disadvantage. Essay writing is a time-consuming process and if one ask essay questions it may leave vast untested areas in the curriculum (Race 1995:Online).

This method measures understanding synthesis and knowledge if the questions are asked correctly. Marking for grading is easy and quick, but marking for feedback may be time-consuming. Variability between assessors and the types of questions decrease the validity of this type of assessment (Brown 2001:Online).

2.4.9.3 *Logbooks/diaries*

This method needs to be structured formally and requires a high level of trust between assessors and students and is time-consuming for students (Brown 2001:11). Logbooks give students the chance to record, express and examine their experience in their field of medical education (Greenaway 1992:Online). Another advantage of the logbook is that it gives teachers the opportunity to monitor the progress of their students and to give feedback in an organised manner. It can also be used as a summative assessment instrument to enable the assessors to judge the experience and skills that the student has obtained through their training (Rickards 2002:Online).

2.4.9.4 *Modified essay questions (MEQ's)*

Another name for this type of assessment is paper case studies. It consists of a sequence of questions based on a case study. It is easy to manage and has high validity and reliability. The MEQ was originally designed as an assessment tool for the Royal College of General Practitioners (Hodgkin & Knox 1975:10). The MEQ consists of a factual case where the clinical information is usually given in stages. This method can evaluate a number of cognitive areas including synthesis, knowledge and application (Feletti & Smith 1986:131). A disadvantage of this method is that cumulative error can occur when subsequent responses depend on a previous response. In a study by Stratford and Pierce-Fenn. it was shown that the MEQ compares favourably with the

multiple choice questions (MCQ) because it minimizes the cueing effect generated by MCQs and maximises the interrater reliability coefficient (Stratford & Pierce-Fenn 1985:1078).

2.4.9.5 *Multiple choice questions (MCQ)*

A wide range of knowledge can be assessed in a relatively short time if this method is used. This is a good method to measure understanding, analysis and problem-solving and evaluation skills. To compile a good MCQ paper is time-consuming but to mark and analyse it is easy (Brown 2001:Online). It should not be too complex because that can confuse students. It is usually a good method for self-assessment and easy to give feedback on. It can have a wide variety like true/false or case reports with questions deriving from the case report.

James (1994:8-9) compiled a number of rules for the creation of good MCQ questions. According to James every question should address a single objective and the problem should be formulated in the stem of the statement. Alternatives given thereafter must be as short as possible because if it is too complex they may be difficult for the student to remember and compare. There must be at least four alternatives to minimise guessing and the position of the correct statement must be varied. The stem must be in the positive rather than in the negative, for example: "Choose the correct statement..." rather than "Choose the statements that DO NOT". The standard of the "distracters" must be of a high quality so that it can be an attractive option for the "guessing student" and all the alternatives must be grammatically consistent with the stem. If the alternatives are not grammatically consistent the correct answer might be too obvious. The assessor should avoid terms like "all of the above" and "none of the above" at all times if possible (James 1994:9).

According to Race (1995:Online) the advantages of MCQ are that the assessment method covers a bigger part of the syllabus and tests the students thinking skills rather than their writing skills. It saves time and energy of the staff because this method is easy to mark, it also is a good test of higher level skills such as the ability to interpret information and make good decisions.

Disadvantages of MCQ include the guess factor-students are able to gain marks by guessing if the MCQ is not compiled effectively. It takes a lot of time and skill to design

structured questions because of the danger of impersonators. If the whole paper consists of MCQs the student's handwriting is not required and there is the danger of "substitution" of candidates (Race 1995:Online).

The importance of structured questions like MCQs, is to design the questions effectively and spend time to structure the questions correctly. A tip to design effective MCQs is to test your questions beforehand with colleagues and large groups of students and try to avoid "overlapping" of questions. One can also test one's questions during formative evaluation before using them in summative examinations and write feedback responses to every question. One have to make sure that one's students are well practised in MCQs by exposing them to this format of assessment during the module and before the summative assessment. Another tip is to gather questions from banks of published MCQs and gradually build up your own bank of MCQs (Race 1995:Online).

2.4.9.6 *Orals/Vivas*

This method can test communication skills, understanding, capacity to think under pressure and knowledge of procedures. If this method is used it is possible to give feedback during the assessment process (Brown 2001:Online). This type of assessment can be demanding for both student and assessor. The student can be unsettled by the stressful situation and the assessor must strive to be impartial and ask challenging questions in fairness to all the students (James 1994:11). This form of assessment should always be used in conjunction with other forms of assessment.

The advantages of vivas are that they are useful to check the student's "ownership of evidence" (Race 2005:11) and can be used to make a decision on borderline cases (Failure or distinction). It also is possible that candidates can be examined fairly by asking all students the same questions (Race 2005:11-12).

According to Race (2005:12) the disadvantages of Vivas are the fact that cultural and individual differences cause some students to always underperform in this type of examination. The questions may "leak" when the same questions are asked to all the students. This type of assessment does not allow the assessor to cover a big part of the syllabus.

To conduct a good oral examination the assessor has to prepare the agenda in advance and consult with colleagues and use a checklist or pro-forma to keep a good record of a student's performance. It is better to have more than one assessor sharing the questions but different "stations" with a different set of assessors that ensure a fair and valid assessment. The assessors must try to put students at ease at the onset of the Viva, discuss the case with their co-assessors at the end of the assessment and make brief notes of the assessment and prepare some feedback that can be given to the candidate at a later stage (Race 2005:11-12).

2.4.9.7 Objective structured clinical examination (OSCE)

This method is useful to assess theoretical, practical and communication skills. It can be used in formative assessment (Group OSCE) or summative assessment (to see if outcomes have been reached). OSCEs are fair, reliable and of high validity. It is time-consuming to organise and needs a lot of assessors at the same time (Brown 2001:Online).

The OSCE was originally developed by Harden *et al* in 1975 and since then it has been rated as the gold standard to evaluate clinical skills (Harden, Stevenson, Wilson Downie & Wilson 1975:447). In 1988 Harden said the following about the OSCE: "*The OSCE is an approach to the assessment of clinical competence in which the components of competence are assessed in a planned or structured way with attention being paid to the objectivity of the examination*" (Harden 1988:19). Since the introduction of the first OSCE, thousands of articles have been written about the OSCE and it is used extensively to assess students in the surgical disciplines.

The advantages of the OSCE are that assessors can decide in advance which clinical competencies need to be addressed and design questions around these competencies which make the OSCE a VALID form of assessment. A wide range of skills, competencies and behavioral trends can be assessed by rotation through the different stations; at the same time the student gets exposure to a wide range of examiners and that leads to a decrease in stress if compared to a "one-on-one" confrontation between a student and only one assessor. Another advantage is that marking is easy and does not take up a lot of time (McAleer & Walker 2000:Online).

There are also some disadvantages of the OSCE because it tends to "compartmentalize" a student's knowledge, is time consuming to prepare and is an expensive form of assessment (McAleer & Walker 2000:Online).

There is a website for Objective Structured Clinical Examinations called OSCE home. The authors that contribute towards the website have suggested some steps that could be taken to ensure a successful OSCE (Al Imari 2011:Online). Stations should be short and most commonly not longer than about five minutes but can range from three to twenty minutes. To be reliable at least eighteen stations need to be used and the duration of the OSCE should be about two hours. Furthermore stations should be focused and candidates must receive very specific instructions. Different competencies can be assessed as part of the OSCE examination. A pre-set structured mark scheme is used - checklists can be used by the assessor or written answer sheets can be utilized which will reduce examiner input and discretion (Al Imari 2011:Online) Emphasis should be placed on what candidates can do rather than what they know and the application of knowledge rather than the recall of knowledge.

Another advantage of the OSCE is that it is a very versatile examination and different options can be used including double or triple stations, linked stations, rest stations, "must pass" stations and preparatory stations.

According to Hart, Harden and Des Marchais (1992:411): *"The real power of this type of examination lies in the ability of those responsible for teaching and testing to examine their trainees with imagination and forethought, in a reliable way, in areas seldom or never tested before"*.

2.4.9.8 Portfolios

A portfolio contains a collection of assignments as well as reflections on critical incidents. Other information like peer-assessment questionnaires, reports by co-workers (which assess attitudes and ability to work in a team) as well as reports of different supervisors can be included. It requires a high level of trust between assessor and student (Brown 2001:Online).

One of the advantages of the portfolio is that it provides evidence of competence in a written format which demonstrates competence over an extended period of time (Van

Rooyen & Prinsloo 2003 in Le Roux 2004:63). The portfolio can include many different documents which differ according to the rules of the assessing body. Documents include job reports, articles written on scientific subjects important in the field of study, certificates awarded to the student, proof of seminars and congresses attended and letters of review from peers (Le Roux 2004:63).

Portfolios have been used in fields like art and architecture for a long time and have constituted the primary method of evaluation in these fields. In education a portfolio can be defined as a systematic process of collecting and evaluating student products during the training period (McMillan 2004:235).

According to Arter and Spandel (1992:36-38) portfolios have a clearly defined purpose and learning outcomes and contain a systematic and organised collection of students' products. The assessing authority provides predefined guidelines about the required content of the portfolio but the students retain a personal control over what they want to include in the portfolio. The portfolio contains self-evaluation and self-reflection on critical incidents written by the students themselves. There are clear and appropriate criteria for the assessment of student portfolios; it must include interaction between the teacher and the student about the content of the portfolio.

Some of the advantages of portfolios are that students become part of the assessment process because a portfolio should include self-evaluation and self-reflection. The portfolio teaches students certain decision-making skills because they have to decide themselves about what should be included in their portfolio and also should be able to justify their selection. Students include peer reviews in their portfolio which teaches them the advantage of collaborative assessment. Portfolios are a form of continuous assessment and are integrally linked to their learning and the progress they are making. It focuses on self-improvement rather than comparison with other students and enhances motivation because students are involved in their own assessment and the process of assessment is not controlled by the teachers. This motivates students to become engaged in their own learning. According to Tombari and Borich 1999 in McMillan (2004:236) this method of assessment enables teachers to focus on students' persistence, effort and willingness to change. The portfolio enables teachers to identify a student's learning difficulties and enables them to give individualised feedback to struggling students. Portfolios are flexible and can be adapted to the individual needs of the assessment authorities of the specific field of learning (McMillan 2004:235-238).

According to McMillan (2004:238-239) the disadvantages of portfolios are that scoring is difficult and reliability has been shown in research to be problematic. The development of a portfolio is time-consuming, not only during the development of criteria but also in marking and individual feedback to students. The selection of the products included in the portfolio can be weak and may decrease the value of the end-product. Sampling of students' products may lead to weak generalization and teachers need training in the development and assessment of a portfolio.

2.4.9.9 *Presentations/Assignments*

Presentations can be used at conferences, symposia and registrar forums. This method is valuable to test communication skills and ability to perform in front of an audience. The student's ability to respond to questions and manage discussions can be tested as well (Brown 2001:Online).

A presentation is an individual assignment and the marks can therefore be individualised to the specific student. Students take presentations seriously because it is usually performed in front of an audience. In certain instances presentations can be done as a collaborative effort (Race 2005:Online).

Presentations are a time-consuming exercise especially if big groups of students are involved and some students find it traumatic to deliver a presentation in front of an audience. Another disadvantage is that presentations are never anonymous which might do injustice to students that cannot perform in front of an audience (Race 2005:Online).

2.4.9.10 *Projects and dissertations*

Dissertations test the all-round ability of the student including analytical, interpretative and practical skills. This type of assessment is time consuming, but has high learning gains for the student. Formative assessment and feedback can be given to the students as they make progress and peer- and self-assessment can provide additional feedback. Dissertations also stimulate the student to critically analyse the available literature on a certain topic in their field of learning (Brown 2001:Online) Furthermore by writing a dissertation as a part of their assessment students contribute towards research in their field of learning.

According to the Council of Graduate Schools in the US (1991:11) a dissertation has the following purposes: "It is a highly professional training experience and at the completion thereof the student demonstrates his/her ability to address an intellectual problem and arrives at a successful conclusion and the results thereof contribute an original contribution to the available knowledge in the field of study".

2.4.9.11 *Reflective practice assignment*

This measures the student's capacity to analyse and evaluate experience in the light of theories and research evidence. This form of assessment is where the student puts thoughts and feelings about an experience in order, analyses it and then learns from it with the aim of planning further actions (Brown 2001:Online).

2.4.9.12 *Short answer questions*

This is the standard method to assess knowledge, problem solving and interpretation skills. It is easier to design than multiple-choice questions but not able to test as much knowledge as MCQ (Brown 2001:Online).

2.4.9.13 *Work-based assessment*

This form of assessment can include logbooks, projects and structured reports from supervisors, peers and members of the medical team. It gives some indication of attitudes, communication skills and ability of a student to work with other people (Brown 2001:14). Assessment of the work done in groups will reduce the workload of the assessor, but it will be difficult to grade the students individually (James 1994:Online). Leadership skills can be tested in this form of assessment and peer assessment might be a helpful tool.

2.4.9.14 *Mini Clinical Evaluation Exercise (Mini-CEX)*

The Mini-CEX facilitates formative assessment of core clinical skills. It is a ten to twenty minute direct observation of a trainee-patient interaction. It is good for the evaluation of the different clinical skills including medical interviewing, physical examination, informed decision making, counseling and clinical judgement reasoning. The technique

was developed by the American Board of Internal Medicine (ABIM) and they make use of a specific form to assess the candidate (ABIM 2011:Online).

2.4.9.15 *Direct Observation of Procedural Skills (DOPS)*

DOPS is a method designed to provide feedback on procedural skills essential to provide good clinical care. This technique has been developed by the Royal College of General Practitioners (RCGP) and evaluates certain procedures including male genital and prostate examination. A specific form has been developed to assess the candidate's performance (RGCP 2011:Online).

2.4.9.16 *Summative discussion on the methods of assessment*

The researcher is of the opinion that the assessors' knowledge and understanding of the standards and outcomes of the assessment determine which type of assessment they would design (observation, evaluation of products, questioning or a combination of all). In medical education, where practical abilities are assessed, a combination of evaluation of products and observation is applicable.

2.4.10 Constructive and formative feedback

2.4.10.1 *Purposes of feedback*

The purpose of feedback is to motivate students and to inform them how well they have done and where and how they can improve their knowledge, practical and communication skills. Feedback is most effective when it is timely, encouraging and includes proposals for improvement. Students need to learn from feedback and not ignore it (Brown 2001:Online).

Constructive feedback to learners includes allowing them to see their marked scripts, assignments and other tasks. The assessor should be available to answer queries, adjust marks and address appeals.

Good constructive feedback should be timely to be meaningful and must be given after assessment but before a final mark is given. Feedback should be honest and realistic but must indicate to students where they can improve and motivate them to do better

(Brown 2001:Online). Negative and judgmental feedback could be detrimental and should be avoided because it also can damage a learner's motivation to learn. The assessor should remember that judgment on a student's performance should leave room for improvement.

2.4.10.2 *Principles of feedback*

According to the Higher Education Academy (HEA 2004:Online) certain principles can be followed by assessors to ensure effective feedback. Feedback facilitates the development of self-assessment in learning. Several authors argue that self-assessment is a prominent feature of feedback (Black & William 1998a:37; Boud 2000:157). Self-assessment can be used by students to identify the strengths and weaknesses in their work and could be included in their portfolio. Feedback promotes peer and tutor dialogue around learning (Freeman & Lewis 1998 in HEA 2004:Online). Feedback is a two-way process and should stimulate a response from the student and dialogue between students, teachers and peers. Feedback helps to clarify what good performance is because by receiving feedback, students will understand what their tutor's concept of good outcomes is and if they can adjust their own concept accordingly. It provides the opportunity to close the gap between current and desired performance. Students and tutors need to write down some "action points" that would identify what students can do to improve their performance next time. Feedback delivers high quality information to students about their learning. Strategies that could increase the quality of feedback include: that the feedback provided should be in line with pre-defined criteria; it must be given soon after the submission of a project; it must prioritise areas of possible improvement; supply advice on how to improve; should be limited; and should be accessible to students at all times (HEA 2004:Online). Feedback should have positive effects on a student's motivation and self-esteem. If marks are given to students without feedback, they will compare themselves with other students and will not focus on areas where they can improve their own performance (Butler 1988:2). Good practice that will boost a student's motivation and self-belief includes provision of the marks on written assignments only after students have responded to feedback, allocating time for students to re-write selected pieces of work or to re-submit assignments after improvements have been made as well as computer-based assessment with feedback (HEA 2004:Online).

Feedback should provide information to teachers that can help them to shape learning. If teachers evaluate the progress of their students, they will be able to identify student difficulties with subject matter. This could help the teachers to obtain information about a student's level of understanding and adapt their teaching accordingly. To obtain this information the assessor can ask the students to identify areas where they are experiencing difficulties or ask students to answer questions like "what was the main point of this lecture?" or "what question remains unanswered?" (HEA 2004:Online) at the end of a lecture.

2.4.10.3 *Guide for a feedback strategy*

Feedback is information given to students providing them with insight in their progress, strengths and weaknesses (JMU Learning and Teaching 2004:Online). There are different types of feedback like diagnostic feedback, which is feedback given after assessment done before the programme/module starts in order to obtain information about the abilities and knowledge base of each student. Formative feedback provides guidance and motivation while the student is busy with the module and ipsative feedback is where students are assessed against their own previous performance. This gives information to students about their progression/improvement. Summative feedback is given after final evaluation and provides information about examination (Brown & Glasner 1999 in JMU Learning and Teaching 2004:Online).

Race (1999:Online) provides methods for feedback that include instant feedback which is given as soon as the student has completed the assessment opportunity. It can be given anonymously by completing a small questionnaire. Questions could include "what did I learn from this session?"; "which points was left unanswered?" and "what could be done to improve the format of the test?" (Race 1999:Online). Assignment feedback is where the student is asked to provide feedback after a formative assessment has been completed. This feedback is to be given in as an assignment and students have to develop their own assessment criteria. Another form of assignment feedback is where the students are asked to mark each other's papers. This type of assignment could be done individually, by appointment or in a group situation.

The time when the feedback should be given depends on the situation. Feedback on diagnostic assessment should be given immediately while feedback after summative assessment can be given at a later stage. The most important part of feedback is that

it should be given at the appropriate time to be meaningful to the student (JMU Learning and Teaching 2004:Online).

Feedback should be given during the module/programme and not only at the end and is most effective if not linked to marks or grades. Feedback sessions give the tutor a chance to check on the level of understanding of the students and gives students a chance to get used to assessment criteria (Black & William 1998b).

According to Race (1999:Online) improvement in student learning will only happen if feedback is of good quality. Feedback should be timely (not too long after assessment), provide insight into errors and misunderstandings and provide guidance on how the students can improve. Feedback should be positive and clear and understandable language should be used. During feedback extreme language like "brilliant" or "appalling" should be avoided (Boud 1994:52). The feedback should be focused on the individual and should provide opportunities for discussion in a supportive environment. In the case of written feedback the handwriting should be legible and clear.

The feedback strategy should be given to the student before the start of the module as part of a module guide. Students should be given examples in the module guide about what type of feedback will be given, at which intervals and what method of feedback will be used (JMU Learning and Teaching 2004:Online). It is important not to make feedback just another bureaucratic task and therefore the tutor's and student's workload should be taken into consideration. Ideas to save time and not increase workload include the use of assessments as part of a lecture session, to use students and peers to provide feedback, stagger deadlines and provide computerized feedback on assessment (JMU Learning and Teaching 2004:Online).

To be really effective a feedback programme must be accepted and discussed by all members of a school involved in teaching. Students' inputs are essential and training of staff members should be provided (JMU Learning and Teaching 2004:Online). Methods should be put in place to ensure that feedback is of a high quality. The feedback strategy should be adaptable, free of bias, easy to administer, reviewed regularly and should be of high quality (JMU Learning and Teaching 2004:Online).

2.4.11 Quality assurance of assessment in Higher Education

2.4.11.1 *Traditional external examination in Higher Education*

In South Africa the traditional external examination system comprises the appointment of a person external from the teaching process (a person who is from outside the institution in the case of final year examinations) to oversee the process. An external examiner has to ensure that the questions asked are consistent, fair and reflects a certain standard and that the grading of the papers is done in a consistent and fair manner.

The external examiner has to grade a representative sample of the papers himself/herself and there are certain mechanisms that will be used when severe discrepancies between the external and internal examiners exist. These mechanisms differ from institution to institution and are incorporated in the formal assessment rules of the institution.

Secondary functions of the external examiner include the study of the syllabus and comment on the adequacy and accuracy of the assessment, the writing of a formal report on the quality of the examination and comments on the quality of the curriculum of the institution. The external examiner has substantial responsibility but cannot be held responsible for flaws in the quality of the curriculum (Murdoch & Grobbelaar 2004 in Gravett & Geyser 2004:113).

The external examiner does receive an honorarium from the institution where he/she moderates the examination which rarely represents adequate remuneration for the services provided or the responsibilities involved. However, it is seen as a collegial service provided by the involved examiner in the general interest of academia.

2.4.11.2 *A new system of moderation?*

According to a draft document prepared by FOTIM (Foundation of Tertiary Institutions in the Northern Metropolis) in 2002 the role of the external examiner differs in different institutions (FOTIM 2002 in Gravett & Geyser 2004:114). Some institutions use the external examiner only as a "scrutiniser" to edit the examination paper and confirm the fairness of the paper and the correct allocation of marks. In other institutions the

external examiner also has to consider if the extent of the paper has covered the curriculum satisfactorily and if the desired outcomes have been reached. In other instances the external examiner is used as an “overseer” and has additional tasks over and above the tasks of other two types named previously. They also have to provide input on the curriculum and the outcomes of the specific programme and comment on the appropriateness, form and content of the examination and the number of assessment opportunities. In summary, they play a prominent role in the evaluation of the course (FOTIM 2002 in Gravett & Geyser 2004:114).

According to SAQA (2001:61-63) moderation should take place at two levels, namely by an internal and external moderator and thereafter the moderation process is in turn verified by an internal and external verifier.

2.4.11.3 *Moderation of assessment in Higher Education*

Moderation of examinations is an essential element in ensuring and maintaining the quality of programmes and qualifications. A moderator has to ensure that assessment of students takes place in a consistent, well designed and accurate manner.

The moderation system in Higher Education should ensure that assessments are valid, fair and reliable, identify the need for re-assessments and ensure that the necessary policies are in place if re-assessment is needed. Formal appeals procedure must be in place for dissatisfied students. The system has to evaluate the performance of the assessors and assure that the assessors have been adequately trained in the different forms of assessment. It has to make provision for students with special needs like physically disabled students. Lastly, assessment guidelines, policies and systems should be formalised and in place before a moderation system can work effectively (SAQA 2001:77).

Certain aspects must be included in any effective moderation system (Murdoch & Grobbelaar 2004 in Gravett and Geyser 2004:118). This includes the determination of the level of involvement of the moderator which must be communicated to the moderator before the onset of the examination. Moderators must have access to the study guide, outcomes, previous assessment opportunities and samples of assessment results. An appropriate documentation system which can include a database for moderators in a specific subject area and logistics like the delivery and return of the

scripts to the moderator as well as financial arrangements should be in place (Murdoch & Grobbelaar 2004 in Gravett and Geyser 2004:118).

The institution must supply the moderators with the necessary information on the responsibilities and duties and the extent of their involvement in the assessment process. The channels that the moderator should use to give feedback to the assessors must be communicated to the moderator before the assessment process. The moderator must also monitor ethical aspects of the examination including confidentiality issues, the rights of the learners and adherence to the principles of assessment (Murdoch & Grobbelaar 2004 in Gravett and Geyser 2004:118-119).

The moderator's report should contain at least the following components: an evaluation of the assessment methods, the number of assessment opportunities, the effectiveness of the assessment methods, and whether the students were informed about the procedures of assessment. The report should include comments about the consistency of the results, an opinion about the adherence of the assessors to the principles of assessment and recommendations about possible changes in the assessment procedures. In summary the moderator has to provide an impression about the quality and level of performance of the students (SAQA 2001:77-79).

An appeal procedure should be in place to allow dissatisfied students that are concerned about the fairness and validity of the assessment process the correct channels to present their case (Murdoch & Grobbelaar 2004 in Gravett & Geyser 2004:119). Most institutions have an appeal committee that can hear these cases. The institution should review the whole moderation process at regular intervals to streamline it and to provide for improvement if shortcomings are noted or described by the external moderator (Murdoch & Grobbelaar 2004 in Gravett & Geyser 2004:119).

The internal moderator is someone from the same institution or even department who can provide peer-review of the assessment practices. They should have access to a sample of the papers and should evaluate the assessment. They have to ensure that the assessment procedures, methods and materials are appropriate for the qualification for which the assessment is conducted. The internal moderator has to monitor the fairness, validity and reliability of the assessment process and evaluate the conduct of the assessors. In addition they have to check on the consistency of the results and the decisions that are taken about the results process (Murdoch and

Grobbelaar 2004 in Gravett & Geyser 2004:120). The internal moderator has to ensure that there are support systems in place for the students (SAQA 2001:78).

The external moderator should evaluate the qualifications and experience of the assessors during the assessment practices and decide if the appropriate assessment methods for the specific subject area were chosen. He/she has to consult with the internal moderators to decide on the different roles of the external and internal moderator in the assessment process and make sure that the assessment processes are consistent, fair, valid and reliable. However their main task is to judge the assessment outcomes (SAQA 2001:78).

2.4.11.4 *Verification of the moderation process in assessment*

The verifier differs from the moderator in that they have to evaluate the whole assessment system and the processes that are in place for consistent assessment practices in the specific institution. Internal verification can be done by an individual or a committee appointed by the specific institution. The main function of the individual or the committee is improvement of assessment procedures and policies. Internal verification may not be a pre-planned process but will happen when a problem arises and the person/committee has to find a solution for the problem and change the assessment policies according to their findings.

Certain topical areas should be included in the process of internal verification but that can differ from one institution to another. Topical areas that can be included in the internal verification process are the responsibility of management and their commitment to assessment practices, policies about assessment practices and procedures, the appeal system of students and available resources for effective assessment as well as the logistics thereof. The internal verifier should ensure that the assessment practices of their institution are in line with professional bodies like the HPCSA. The internal verifier has to make a decision on the internal resource capacity (For example, if there are enough internal assessors and available material for assessment purposes). The internal verifier must assure that the documentation system of the verification process is in place (Murdoch & Grobbelaar 2004 in Gravett & Geyser 2004:123).

The internal verification process must be repeated at least once a year and the recommendations that were made should be distributed to all the role players involved in the assessment process. External verification is done by an external body for example in the case of education it is done by the Higher Education Quality Committee (HEQC) (Murdoch & Grobbelaar 2004 in Gravett & Geyser 2004:124).

The external verifier serves as a support mechanism for the internal verifiers and gives advice and support on certain matters. He/she are responsible for identifying problems in assessment, moderation and internal verification not only in a certain institution but for all the institutions that fall under their auspices. They are able to make changes in policies about assessment, moderation and internal verification processes (Murdoch & Grobbelaar 2004 in Gravett & Geyser 2004:124). The external verification body needs to have in-depth knowledge about assessment, moderation and verification across the spectrum of Higher Education.

2.4.11.5 Summative discussion on quality assurance of assessment in Higher Education

Quality assurance of the assessment process is of the utmost importance not only for academic institutions but also for examining bodies like the College of Medicine of South Africa (CMSA). Quality assurance is not only important for the accountability of the assessing body but also for the protection of the students. The particular institution/examining body has unique needs and preferences and should therefore develop a quality assurance mechanism that will suit their own needs.

2.5 SUMMARY

The aim of the literature review was to describe the current situation in the assessment of postgraduate students in Urology and to discuss developments in the field of student learning and assessment. The researcher tried to prove that there are several areas where the current situation can be improved. The aim of the research project will be to develop an assessment model that will be more appropriate and will answer to modern educational policies.

The literature review enabled the researcher to compile a list of specific criteria identified that can be used to develop an assessment model. A questionnaire will be

developed that can be sent to qualified Urologists involved in training and postgraduate assessment of Urology registrars. The aim of the questionnaire will be to test the opinion of the participants about the developments in HE and the implications thereof in the training and assessment of Urology registrars.

In Chapter 3, Research Design and Methodology, the design of the research project and the methods that were used to gather the data will be discussed.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

The word research consists out of two words namely “re” and “search” and literally means to find out something new (Shankala 2007:1).

The definition of research according to Webster’s New World International Dictionary: “Research is a careful inquiry or examination in seeking facts or principles, a diligent investigation to ascertain something” (Agnes (Ed) 1998:Online). The definition according to the International Encyclopaedia of Social Sciences is: “Research is the manipulation of things, concepts or symbols for the purpose of generalising to extend, correct or verify knowledge, whether that knowledge aids in the practice of an art or not” (Stills & Merten 1968:1032).

To really understand research, it is necessary to know and understand the characteristics of good research. According to Shankala (2007:2-4) the aim of research is to find a solution to a problem. Research leads to the development of theories or principles that will predict future occurrence but it depends on facts that can be observed or evidence that can be proven. Observations made during research should be accurate and should be described meticulously. The researcher needs to gather new data or use existing data for a new purpose because re-invention of the wheel is not seen as research although it might be an interesting academic exercise. Research is not about trial and error, it requires expertise and therefore it is necessary that the researcher conducts a thorough literature review of the available literature before embarking on new research. Research must be objective and personal bias of the researcher should be eliminated while every possible method should be used to validate the research. The researcher must be patient and unhurried during the research process and the research must be carefully recorded and reported. To be a successful researcher the individual must be courageous and willing to pursue their beliefs in spite of opposition from educational authorities.

3.2 THEORETICAL PERSPECTIVES ON THE RESEARCH METHODOLOGY

3.2.1 Theory building

Theory building can be divided into two phases and can be seen as a continuous theory-research cycle (Lynham 2002:221). In the first part certain theoretical variables can be used to identify the concepts of the theory. Eisenhardt states that case studies can be used to create a theoretical framework for the hypothesis (Eisenhardt 2007:25). After the different variables have been identified, the researcher has to specify how the units interact and build a theoretical framework (Moagi-Jama 2009:80).

The second part, the empirical part of the study, consists of the investigation and implementation of the theoretical variables that have been identified.

3.2.2 Strategy of inquiry and research approach

In this study, the researcher made use of a combination of quantitative and qualitative research methods. The focus of the study relied mainly on quantitative research using a questionnaire as instrument, but an open-ended question was asked at the end of each section to encourage participants to air their own views and so provide qualitative information.

In the next part, research design, the definitions of the different types of research as well as how they complement each other in this study will be discussed.

3.2.3 The research design in this study

As was pointed out above, a quantitative approach was followed by elements of qualitative data. The two types of research complemented each other and helped to ensure that the results were interpretable. The study design was descriptive.

Although qualitative and quantitative research is appropriate for answering different kinds of questions (Leedy & Ormrod 2005:94), more knowledge about the question asked will be accumulated when using both methodologies (Creswell 2002:24).

Qualitative research involves an in-depth understanding of human behaviour and the reasons that govern human behaviour (Becker 1996:53). Quantitative research, on the other hand, is the systematic, scientific investigation of quantitative properties and phenomena and their relationship (Adler 1987:51). According to Wikipedia, the free encyclopaedia (2006:Online), qualitative research investigates the WHY and HOW of decision making whereas quantitative research investigates the WHAT, WHERE and WHEN of decision making.

Quantitative researchers identify one or more variables that they want to study and collect data particular to those variables (Leedy & Ormrod 2005:95). Measurement instruments are developed that can measure these variables. Qualitative researchers, on the other hand, are described as being the research instrument because the bulk of their data collection involves their personal involvement (Leedy & Ormrod 2005:96). They use interviews and observations among others for their data collection.

Although there are several differences between qualitative and quantitative research, the researcher believes that in this study the qualitative approach (open-ended questions) complemented the quantitative research to reach a more comprehensive conclusion.

3.3 RESEARCH METHODS

The basis of this study relied on an analysis of the currently available literature. The current assessment models that are used were studied as well as literature on modern Higher Education (HE) assessment principles. Shortcomings in the currently used model were identified and other possibilities discussed. The empirical study consisted of a questionnaire survey and a Delphi process.

3.3.1 Literature review

In the literature review, an analysis of the currently used assessment models was done followed by an identification of the modern techniques available for assessment. It outlined the shortcomings of the currently used models and established the need for research in this field. The literature review also served to provide the researcher with knowledge about modern assessment techniques.

The literature review focused on the current situation in postgraduate assessment of Urology students and identified areas where improvements can be made. In the second part of the literature review the researcher reviewed the shifts in perspectives of student learning and explained the surface and deep approaches to learning. The purposes of assessment in student learning were reviewed and the importance of the reliability, validity and practicality of different available assessment tools was outlined. The general principles for the assessment of student learning were reviewed and the different forms and methods available for assessment were discussed. The role of constructive, formative feedback to students and aspects of quality assurance in assessment were reviewed.

3.3.2 The questionnaire survey

The questionnaire survey used a quantitative approach with elements of qualitative research. The aim of the questionnaire survey was to collect the necessary information as stated in the second research objective (cf. Chapter 1, Section 1.43). In order to obtain this information, structured questions were formulated. Responses were anonymous and respondents had an opportunity to comment and made recommendations by answering a few open-ended questions. The questionnaire was compiled by the researcher in English.

3.3.2.1 *Theoretical aspects*

According to Goddard and Melville (2001:47), a questionnaire can be defined as a number of questions sent to participants to answer.

According to Leedy and Ormrod (2005:185) guidelines are necessary to construct a successful questionnaire. The questionnaire should be kept short and solicit only the information essential for the research project. Only simple, clear and unambiguous language should be used and the researcher should beware of unwarranted assumptions in the questionnaire. One needs to be consistent in the way one compiles the questions and keep the respondent's task simple. The data capturing into numerical values that allows uncomplicated statistical analysis should be planned beforehand. One should provide clear instructions and explain the rationale for items that might be unclear to the participant. The appearance of the questionnaire must be professional and well-designed, which will also keep the respondents interested. A pilot

test is an essential part of the questionnaire and helps to identify the shortcomings of a questionnaire.

The researcher has to ensure that the questionnaire is formulated in such a way that it answers the research questions. This must be done before the questionnaire is sent to the participants in the questionnaire survey (Leedy & Ormrod 2005:190-192).

The advantage of a questionnaire survey is that it is able to collect unambiguous and easy to count answers that lead to quantitative data for analysis (Bowling 2002:258). Questionnaire surveys are relatively economical and can include large numbers of participants. If participants can be assured that their answers will remain anonymous, they will answer truthfully to controversial and sensitive issues (Leedy & Ormrod 2005:185).

The disadvantages of a questionnaire survey are that pre-coded response choices may not be comprehensive and because of the inability of the researcher to accommodate all answers, participants may be forced to choose answers that do not fully represent their views. There may be a low return rate, which might lead to the original selected sample not being as representative as was originally planned (Leedy & Ormrod 2005:185). If the researcher specifies the questions in advance, possible questions that can be asked about the subject may be eliminated. This can lead to distorted information (Dowson & McInerney 2001:36).

3.3.2.2 *The questionnaire in this study*

A consent form (Appendix B1), was sent to the identified target group and they were invited to sign the consent form if they were willing to participate in the study. The questionnaire (Appendix B2), which was used as a research tool in this study, was designed from the information gathered by the literature review.

The purposes of the questionnaire were to obtain demographic information about the participants as well as the experience of the participant in assessment and training of postgraduate students. The researcher asked the participants' opinion about outcomes-based education and assessment in Higher Education. The researcher asked for the participants' opinion about the purposes of assessment, the mechanisms for learner assessment in order to ensure good assessment practices, quality assurance in

assessment and the principles of assessment. The researcher was interested in the knowledge of the respondents about the planning and construction of assessment methods and the role of feedback as an integral part of assessment of postgraduate students. The researcher was interested in the respondents' opinion about the different types of assessment and the value and the appropriateness of the different forms of assessment currently used to assess postgraduate students in Urology.

The five-point scale was used because it gave the respondents a scale between 1 and 5 to rate the questions on the specific assessment methods and the appropriateness thereof. The Likert scale was developed by R.A. Likert in 1932 (Likert 1932:1-55). Likert scales are divided into agreement scales (agree-disagree) and frequency scales (never-always) (Friedman Ben-David 2009:288). The number of points may vary based on the construct measured (Spector 1992:10-12). A four-point, tick-off Likert scale was used to rate the required information in the questionnaire in sections B to I. In these eight sections, the respondents were asked to decide if each of the factors played a role in assessment and to rate what the importance of the factor was if it did play a role in assessment. In section J, the researcher used a five-point tick-off Likert scale. In this section, the respondents were asked their opinion on the time needed for questions, marking and feedback of each of the assessment methods and to rate if each of the assessment methods was appropriate for the rating of the knowledge, skills, professional behaviour and clinical competence of the students. Open-ended questions were included in the section on assessment methods. Respondents were encouraged to add their personal opinions in the space provided. The researcher realised that respondents may not be familiar with some of the terminology and therefor added a "glossary of key concepts" to explain the unfamiliar terms in the questionnaire survey (Appendix B3).

The questionnaire that was used in this study was adapted from a similar questionnaire that was developed to obtain information about an assessment model for students in Health Sciences and Technology by Friedrich-Nel (2003, Appendix B:2-31).

The questionnaire (Appendix B2) that was created and finalised by the researcher, collected information on the following aspects:

Section A: Personal profile (Appendix B2, section A)

This category included demographic information, qualifications and employment details as well as the experience of the participant.

Section B: Outcomes-based Education and assessment in Higher Education (Appendix B2, section B)

The participant's opinion about several aspects of outcomes-based education was tested.

Section C: The purpose of assessment (Appendix B2, Section C)

The participant's opinion about the role and importance of the purposes of assessment was asked in this section.

Section D: Learner Assessment (Appendix B2, Section D)

The opinion of the participant about the role and importance of specific characteristics of learner assessment was asked in this section.

Section E: Quality Assurance in Assessment (Appendix B2, Section E)

The opinion of the participant about the role and importance of quality assurance in assessment was asked in this section.

Section F: Principles of Assessment (Appendix B, Section F)

The opinion of the participant about the role and importance of certain principles of assessment was asked in this section.

Section G: Planning and constructing assessment (Appendix B2, Section G)

The participant's opinion about the role and importance of the planning and construction of assessment was asked in this section.

Section H: Feedback on assessment and the use of assessment results (Appendix B2, Section H)

The opinion of the participant about the role and importance of feedback after assessment was asked in this section.

Section I: Types /Strategies of assessment (Appendix B2, Section I)

The opinion of the participant about the role and importance of different types of assessment was asked in this section.

Section J: Assessment methods and appropriateness (Appendix B2, Section J)

In this section information about the methods currently used in the assessment of postgraduate Urology students was gathered. The opinion of the participant was asked about the time required to mark and to give feedback on the assessment method. The participant was asked to rate the assessment method as appropriate or not appropriate to assess the knowledge, skills, professional behaviour and clinical competence of the student. In section J, open-ended questions were used where the participant was asked to give reasons why he/she would or would not select the specific assessment method for assessment method of the postgraduate Urology student.

3.3.2.3 *Sample selection*

Target population

The target population is certain individuals that possess the same specific characteristics (De Vos 1998:14). In this study, the researcher used all qualified Urologists in full-time academic practice at registered South African medical schools as well as qualified Urologists in private practice with part-time appointments in a department of Urology at a registered South African medical school. To qualify as a participant, the individual needed to have a postgraduate qualification in Urology and at least three years' experience in training and assessment of Urology registrars. The departments of Urology at all eight registered medical schools in South Africa were

asked to participate in the study. In total, forty-three urologists qualified and all of them were asked to participate in the study.

The researcher and his promoters chose Urologists with experience in training and assessment of Urology registrars to complete the questionnaire. They were chosen because they have experience of assessment not only on postgraduate level but also at undergraduate level. Because of the changes in Health Sciences Education at undergraduate level, they would have been exposed to new concepts in HSE already.

Survey population

The survey population consisted of forty-three qualified Urologists in full-time academic practice or Urologists in private practice with a part-time appointment at a department of Urology at a registered South African medical school. All participants had to sign the consent form, thereby indicating that they were willing to participate in the study before they completed the questionnaire (cf. Appendix B1).

Sample size

The sample size consisted of 13 participants who completed and returned the questionnaire. Participants had to complete the informed consent form if they were willing to participate in the study and return the informed consent form with the completed questionnaire to the researcher.

Description of the sample

The sample consisted of qualified Urologists in full-time academic practice at registered South African medical schools as well as qualified Urologists in private practice with a part-time appointment at a department of Urology at a registered South African medical school. To qualify as a participant, the individual needed to have a postgraduate qualification in Urology and at least three (3) years' experience in training and assessment of Urology registrars. In the end the researcher received only thirteen completed questionnaires. Eleven of the completed questionnaires were returned by Urologists in full-time academic practice while only two completed questionnaires were returned by Urologists in private practice with a part-time appointment at an academic institution.

The pilot study

A pilot study was conducted by submitting the questionnaire to three clinicians with experience in the field of training and assessment of registrars in Urology and who were not involved in the study. The clinicians involved were asked to give their opinion about the clarity and comprehensibility of the questions and the amount of time they needed to complete the questionnaire. The researcher also asked them to point out any bias that was created by the questions and encouraged them to give any other suggestions and/or recommendations that could be used by the researcher to improve the questionnaire. A pilot study is undertaken by researchers to test the particular instrument before embarking on the full-blown research (Van Teijlingen & Hundley 2002:33-36).

Clarke-Farr (2005:221) states that although a pilot study might help a researcher to decide if a study is feasible, it also has certain limitations. The researcher should not make certain assumptions about the outcome of the research project by using the pilot study data. The data of the pilot study should also not be included in the analysis of the final results of the questionnaire survey.

According to Clarke-Farr (2005:221-222) certain aspects of a pilot study may improve the proposed questionnaire. The pilot study questionnaires must be administered in the same way as in the main study and feedback must be obtained from participants of the pilot study to identify ambiguities and questions that were difficult to understand. The participants of the pilot study must record the time necessary to complete the questionnaire and determine if every question gives an adequate range of response. Difficult and ambiguous questions must be discarded and the participants in the pilot study must confirm that the information supplied were sufficient in order to obtain the required replies. The researcher must urge the participants of the pilot study to answer all the questions to the best of their ability.

After the researcher has worked through the feedback received from the pilot study, the researcher can rephrase or re-scale questions that are ambiguous or difficult to interpret. The questionnaire can be revised, shortened and in some cases a second pilot study can be done (Clark-Farr 2005:221-222).

In the questionnaire survey used in this study, the same principles that were described by Clarke-Farr were used. Although some of the questions were rephrased, the researcher did not feel that a second pilot study was necessary.

Data gathering

The informed consent forms and the questionnaires were sent to the selected candidates simultaneously via e-mail. If the candidate consented to participate in the study, he/she had to complete and sign the included consent form (Appendix B1) and return it with the completed questionnaire to the researcher. The participants' identities were unknown to the researcher and no personal information was expected from the participants. However, certain biographical information were requested from the participants and were used in the study. The participants were given a six-week period to complete the questionnaire. The researcher reminded participants three times during this period about the deadline for completion of the questionnaires. The completed consent form and questionnaire could be returned to the researcher via e-mail or alternatively participants could fax the completed questionnaire to the researcher. The e-mail address and the fax number of the researcher were supplied in the questionnaire (cf. Appendix B2). The period was extended by another six weeks because of the low response rate and the participants were again reminded twice during the six weeks period to return the questionnaire.

The Dean of the Faculty of Health Sciences, University of the Free State, Prof. G.J. van Zyl, wrote a letter to all the participants of the questionnaire survey. In the letter, Prof. Van Zyl explained the importance of the study and urged participants to complete the questionnaire. This letter was sent to all the identified participants of the questionnaire survey at the beginning of the second six-week period.

Data analysis

The data analysis was done by the department of Biostatistics, University of the Free State (UFS) in collaboration with the researcher. The Department of Biostatistics calculated descriptive statistics such as the frequencies and percentages and supplied the researcher with the results in a tabulated format. Descriptive research is the numerical index that describes or summarises characteristics of a frequency in a

frequency distribution. The decision to ask the Department of Biostatistics to do the statistical analysis of the questionnaire survey was made by the researcher at the start of the study. Although the numbers received were small and the analysis relatively simple, the researcher involved the Department of Biostatistics in the analysis to ensure that it was done in a correct way.

Data interpretation

The interpretation of the data was done by the researcher with guidance from the staff of the Department of Biostatistics, Faculty of Health Sciences, University of the Free State (UFS). The interpretation of the data will be discussed in detail in Chapter 4.

3.3.3 The Delphi technique

3.3.3.1 *Theoretical aspects*

The Delphi technique provided both qualitative and quantitative information and was used to meet the objectives of this research study. Information gained by the literature review and the questionnaire survey was used to compile the questions of the Delphi questionnaire.

The Delphi technique received its name from the city of Delphi, which used to be the seat of the temple of the Greek god, Apollo (Van Zyl 2004:251). Kings of the ancient Greek and Roman empires used to come to Delphi to consult with Apollo. In modern times, the Delphi technique is used to finalise decisions that need to be made by experts (Smit & De J Cronje 2002:163).

The Delphi technique is based on two assumptions. Firstly, decisions made by a group of experts in a field of study, are of a higher validity than those made by a single person. Secondly, face-to-face interaction may allow domineering members to influence others and thus produce group bias, which is then prevented by using the Delphi technique (Murry & Hammons 1995:426). By using a group of experts, the conclusion reached carries higher validity, credibility and success rates (Clayton 1997:373). A wide range of experts can participate equally in the communication process (Critchler & Gladstone 1998:432). The experts can come from different backgrounds and different geographic areas.

The main characteristics of the Delphi technique are the fact that it is anonymous, uses expert input (Clayton 1997:377) and respondents are physically separated. The process takes place through a number of rounds during which a new questionnaire is compiled at the start of each new round. The new questionnaire is compiled by using feedback from the previous round (Woudenberg 1991:133). After each round, a statistical analysis of the responses takes place, which allow the participants to see where his/her opinion lies compared to the rest of the group (Clayton 1997:385). Participants' responses are analysed after each round and controlled feedback is given to the participant. This process is completely democratic because each participant can change and/or amend his/her previous opinion after each round (Goodman 1987:730).

The Delphi technique also provides qualitative information because definitions and solutions to problems (related to the topic under discussion) are provided by the participants. The statement by Critcher and Gladstone (1998:433) captures this situation as follows: "Delphi straddles the divide between qualitative and quantitative methodologies".

The researcher used the Delphi technique in this study because it is a fast and cost-effective way of gathering experts' opinions and overcomes difficulties and bias experienced by using a face-to-face process. In the Delphi process, experts from different backgrounds can participate equally in the process while they consider their opinions carefully and respond in their own time. As mentioned above, both qualitative and quantitative information is gathered by using the Delphi technique and this is necessary to complete the study successfully (Critcher & Gladstone 1998:432; Linstone & Turoff 1975:4; Murry & Hammons 1995:429).

Clarke-Farr (2005:226-228) summarises important aspects of the Delphi technique and highlights the following advantages and disadvantages as listed by the Michigan State University.

The advantages of the Delphi technique are that it allows participants to remain anonymous, is an inexpensive way of gathering experts' opinions and is free of social pressure, personality influence and individual dominance. In the Delphi technique a reliable judgement or forecast of results is likely and it allows sharing of information and reasoning among participants. It is conducive to independent thinking and gradual

formulation and consists of a well-selected respondent panel. It can provide a broad analytical perspective on potential growth impacts because it can be used to reach consensus among groups hostile to one another (Clarke-Farr 2005:226).

The Delphi technique also has disadvantages including the fact that the judgements are those of a selected group of people and may not be representative. In the Delphi process there may be a tendency to eliminate extreme positions and force a middle-of-the-road consensus. It is more time-consuming than the group process method, but should not be viewed as a total solution in forecasting. The Delphi technique requires skill in written communication as well as adequate time and participant commitment (about 30-45 days) (Michigan State University 1994:Online).

3.3.3.2 *The Delphi process and questionnaire in this study*

The researcher used the Delphi technique because it is a fast and cost-effective way of gathering information of experts. The Delphi process avoided the problems of face-to-face interactions (Cricher & Gladstone 1998:432; Linstone & Turoff 1975:4; Murry & Hammons 1995:429) and therefore experts from different backgrounds could participate equally in the process. The participants had enough time to consider their opinions carefully and respond in their own time. Both qualitative and quantitative information was gathered by using the Delphi technique and this was necessary to complete the study successfully.

This study, where the development of an assessment model for postgraduate students in Urology was investigated, fitted well with the characteristics of the Delphi process. For that reason the Delphi process was chosen as the most suitable research tool in this study. The questionnaire that was developed for the Delphi process as well as the different rounds of the Delphi process with the statistical analysis of every round will be described in detail in Chapter 5.

3.3.3.3 *Sample selection*

Target population

The target population of the Delphi process consisted of:

- Experts in the field of Urology that did not participate in the questionnaire survey. This included Urologists that were actively involved in training of registrars, retired Urologists that were involved in the training of registrars before their retirement and current members of the Board of the College of Urologists of South Africa.
- Experts in the field of Higher and/or Health Sciences Education.

Both groups of experts had vast experience in the field of assessment and were among the policy makers in the field of assessment.

As was mentioned in the section on the survey population of the questionnaire survey (cf. Chapter 3, Section 3.3.2.3), only forty-three potential participants to the questionnaire survey could be identified. The researcher identified possible members of the Delphi panel before the questionnaires were sent out and excluded them from the questionnaire survey because of their possible involvement in the Delphi process.

Twelve experts were approached and asked to participate as a member of the Delphi panel. Ten experts confirmed that they were willing to serve on the Delphi panel and the Delphi panel therefore consisted of ten members.

Survey population

The survey population consisted of experts in the field of Urology and Health Sciences Education with extensive experience in assessment who gave their informed consent to serve as Delphi panel members.

Sample size

The sample size consisted of ten expert members that were selected by the researcher and his promoters on account of their experience in Urology and Health Sciences Education. All the members that were selected to the Delphi panel had extensive

experience in the assessment of postgraduate students, both at Magister and Doctoral levels. The educationalists on the panel were not medically qualified people, but had extensive experience in Health Sciences Education.

Description of sample

The sample consisted of five experts from Urology and five experts from Health Sciences Education with experience in assessment. The sample was selected after identification of the suitable candidates by the researcher and in conjunction with the study promoters.

The Pilot Study

Pre-testing of the Delphi questionnaire was done by means of a pilot study. This was done to ensure the reliability, validity and trustworthiness of the study. The panel for the pilot study consisted of an Urologist with experience in training and assessment of postgraduate students and an expert in the field of Health Sciences Education. Experts involved in the pilot study were not part of the final Delphi panel.

Data gathering

Letters of invitation that included the consent form were sent to the expert panel selected by the researcher and his promoters by e-mail. The experts that were selected to serve on the Delphi panel had to give their informed consent to participate in the Delphi process. If they accepted the invitation, they were asked to complete the consent form and return the signed consent form to the researcher, either by e-mail or by fax. If the selected experts accepted the invitation and returned the signed consent forms to the researcher, the Delphi questionnaires were delivered to them by e-mail.

The aim of the Delphi process was to reach a level of consensus among the expert panel members on the different statements made. To reach consensus, a certain percentage of responses needed to fall within a prescribed range for the value being estimated (Dajani, Sincoff & Talley 1979:83). As recommended by Larson and Wissman (2000:46), it was considered that consensus had been reached when 80% of the experts agreed on a given statement.

Stability is the natural tendency for opinions of experts to centralise (Linstone & Turoff 2002:277) and therefore stability can be declared when movement of the opinion of the group as a whole has reached stability. If convergence of the results is noted during the different rounds of the Delphi process, stability on the remaining statements can be declared by the researcher ((Buck, Gross, Hakim & Weinblatt 1993:275; Linstone & Turoff 2002:18).

Data Analysis

Analyses of the different rounds of the Delphi process were done manually by the researcher himself on completion of each round. The statistical analysis after each completed round, drafting of the Delphi questionnaire for the following round as well as the explanation of the Delphi process for the next round will be discussed in more detail in Chapter 5.

3.4 ENSURING THE RELIABILITY, VALIDITY AND TRUSTWORTHINESS OF THE STUDY

3.4.1 Reliability

Reliability is the extent to which a measurement instrument yields consistent, reliable and uniform results over a period of repeated observations or measurements under the same conditions every time (Goodwin 1995:96).

Reliability in this study was obtained by means of well-structured questions which were piloted carefully and reviewed by experts in this area of research. The sample was fully inclusive, both in the questionnaire survey and the Delphi process, which will add to the reliability of the study.

3.4.2 Validity

Validity is the extent to which the instrument measures what is supposed to be measured (Leedy & Ormrod 2001:31). Validity will be assigned to an instrument after it has been tested satisfactorily on more than one occasion in the population for which it was designed. This is called internal validity opposed to external validity, which refers

to the generalisability of the research findings to the wider population of interest (Bowling 2002:150).

In this study validity was established through the expertise of the participants in the Delphi panel, the broad collaboration by means of which the research instruments were designed and the support and expertise of the study leaders and the Biostatistician involved in the study.

3.4.3 Trustworthiness

Trustworthiness refers to the believability of a researcher's findings (Maykut & Morehouse 1994:64). Guba believes that trustworthiness comprises four elements, namely credibility, transferability, dependability and conformability (Guba in De Vos, Strydom, Fouche & Delport 2002:351-352). To ensure reliability in qualitative research, the examination of trustworthiness is crucial (Seale 1999:466). A qualitative study cannot be called transferable unless it is credible and it cannot be deemed credible unless it is dependable (Babbie & Mouton 2001:277-278).

The reliability and validity of the quantitative research instrument, namely the questionnaires, contributed towards the trustworthiness of this study. The Delphi method of research, its credibility and the expertise of the Delphi experts increased the trustworthiness of the study even more. Trustworthiness of the Delphi process was ensured by providing the Delphi panel with individual and collective written feedback of the results after every round of the Delphi study.

3.5 ETHICAL CONSIDERATIONS

3.5.1 Approval

Before commencing the study, approval was obtained from the Vice-Rector (Academic Planning), the Management Committee of the Faculty of Health Sciences, UFS (because the Dean of the Faculty of Health Sciences, UFS, was the promoter of the study) and the Executive Management of the School of Medicine, UFS. The study was submitted to and approved by the Ethics Committee of the Faculty of Health Sciences, University of the Free State (UFS) On 17 April 2007. The Ethics committee number allocated to the study is ETOVS 56/07.

3.5.2 Informed consent

All respondents to the empirical study signed written consent before they were allowed to participate in the study. The consent form (cf. Appendix B1) was available in English and the participants were given a description of the study and the anticipated duration of the study. Sample subjects knew that their participation was voluntary and they were guaranteed that all information supplied was confidential and anonymous. Their identity was unknown to the researcher and they were guaranteed that their personal information would be anonymous and would not be published with the results. The researcher's name and contact details were available to all participants at all times and participants were assured that they will have access to the published results of the study.

3.5.3 Right to privacy and confidentiality

All information acquired by means of both the questionnaire survey and the Delphi questionnaires was dealt with in a strictly confidential manner. No names or personal information were revealed at any stage. The respondent's name did not appear on any document.

3.5.4 Minimising of potential misinterpretation of the results

The statistician of the Department of Biostatistics ensured the researcher that the statistical analysis of the data obtained from the questionnaire was performed in a matter that complies with international standards. The researcher is convinced that the necessary precautions were taken to ensure that the study complied with the highest ethical standards namely cross-referencing and scientific referencing.

3.6 CONCLUSION

In Chapter 3 an overview was given about the research methodology and the research methods that were used in this study.

In Chapter 4, ***Results and discussion of the findings of the questionnaire survey***, the results of the questionnaire survey as a research tool in this study to collect the necessary data will be discussed in detail.

CHAPTER 4

RESULTS AND DISCUSSION OF FINDINGS OF QUESTIONNAIRE SURVEY

4.1 INTRODUCTION

In this chapter the results of the questionnaire survey that was distributed amongst Urologists in all seven accredited departments of Urology will be analysed and discussed. Before the questionnaire was distributed among Urologists, a pilot study was performed by the researcher. Two Urologists employed at the Department of Urology, University of the Free State (UFS) and one Urologist in full-time private practice with a part-time appointment at the Department of Urology, UFS and previous experience in assessment of Urology registrars, were asked to complete the questionnaire. The aim of the pilot study was to confirm that all questions were legible and understandable as well as to judge the time necessary to complete the questionnaire.

Thereafter, the questionnaire (Appendix B2) was distributed amongst forty-three urologists that either had a full-time appointment in a department of Urology or a part-time appointment in an Urology department. All the questionnaires were delivered by e-mail, but the participants had the option of a hard copy that could be faxed or posted to them. Not one of the participants chose the option of a hard copy. The consent form (Appendix B1) was sent with the questionnaire and the participants were asked to first sign the informed consent form before the completion of the questionnaire. In the end, there were only thirteen respondents who signed the consent form and completed the questionnaire in spite of several efforts to increase the total number of respondents. The researcher's opinions about the weak response rate will be discussed in Chapter 7 of the research project.

The questionnaire was divided into 10 sections and participants were asked to complete all the different sections. In the first section (Section A), the demographic details of the participants were requested. The demographic details included their age, gender, home language and the number of years that they have been involved in a department of Urology.

The first section also dealt with the role of the participant in the specific department, including his/her role in the assessment of postgraduate students, as one of the most important tasks of a teacher is involvement in assessment (Freeman and Lewis 1998:7).

The position of the participants in their department was clarified in Section A and they also had to indicate if their experience in assessment was limited to the assessment of undergraduate students only or whether it also included assessment of postgraduate students.

Section B dealt with the participant's knowledge of assessment characteristics in Higher Education (HE) and their perception about the importance of different aspects of HE.

Section C dealt with the purposes of assessment and the participants were asked to grade the importance of statements regarding the purposes of assessment. They were also asked to provide their opinion about different types of assessment and the aim of that specific type of assessment.

Section D dealt with mechanisms that play a role in learner assessment to ensure good assessment practices.

In Section E, the opinions of the respondents were asked about quality assurance in assessment and the role that it plays in good assessment practices.

In Section F, the respondents were asked to rate the role that different principles of assessment play in good assessment practices.

Section G dealt with the planning and construction of assessment, while the role and importance of feedback to learners were investigated in Section H.

Section I dealt with the different forms of assessment currently available as well as the importance thereof.

In the last section (Section J) the researcher asked for the opinion of the respondents about the different methods available for the assessment of postgraduate Urology students. The respondents were asked their opinion on different aspects of each type

of assessment, including the time to set up and mark the assessment as well as the appropriateness thereof.

At the end of the chapter, a summary of the findings of the questionnaire survey will be given and a conclusion will be formulated.

4.2 RESULTS

The results of the various sections of the questionnaire survey will be discussed and analysed individually. The results will be presented in table and graphic format. A discussion of the specific question in the questionnaire will precede the tables and graphics. In the discussion, only the most important positive and negative findings regarding the specific question will be mentioned. The remaining results will be available in the tables and graphs.

The results of the questionnaire revealed that several challenges await assessors in Health Sciences Education (HSE). In the first instance, the diversity in the background of the population of learners (Atkins, Beattie & Dockrell 1993:16) and secondly the increase in trainer: learner ratios (Sutherland & Peckham 1998:98) can be seen as huge challenges for the assessor in HSE. Both these factors and others are challenging the modern assessor to develop an assessment model that is valid, reliable and transparent and will be suitable for both learners and teachers.

4.2.1 Demographics

In this section, the results of the demographic data will be given and discussed.

4.2.1.1 *Gender distribution of respondents*

Table 4.1 shows the gender distribution of respondents. The majority of respondents were male (92%) compared to only 8% female respondents. This is an accurate reflection of the current ratio of males: females in the field of Urology. This is also true of the gender distribution of Urologists registered with the Health Professions Council of South Africa.

In a survey in the United States in 1995, it was found that 4,2% of Urology residents and 1,2% of board certified Urologists were female (Bradbury, King & Middleton 1995:1855). The Society of Women in Urology (Online) was founded in 1992 and currently has 250 members who are board-certified Urologists.

TABLE 4.1: GENDER DISTRIBUTION OF RESPONDENTS
[Appendix B2, Section A, Question 1] (n=13)

GENDER	FREQUENCY	PERCENTAGE
Male	12	92.31%
Female	01	7.69%

(Note by Researcher SWW: The percentages have been worked out to the second decimal figure. Therefore, the percentages would not add up to 100% in some cases. These are applicable to all the tables in this chapter where percentages have been worked out).

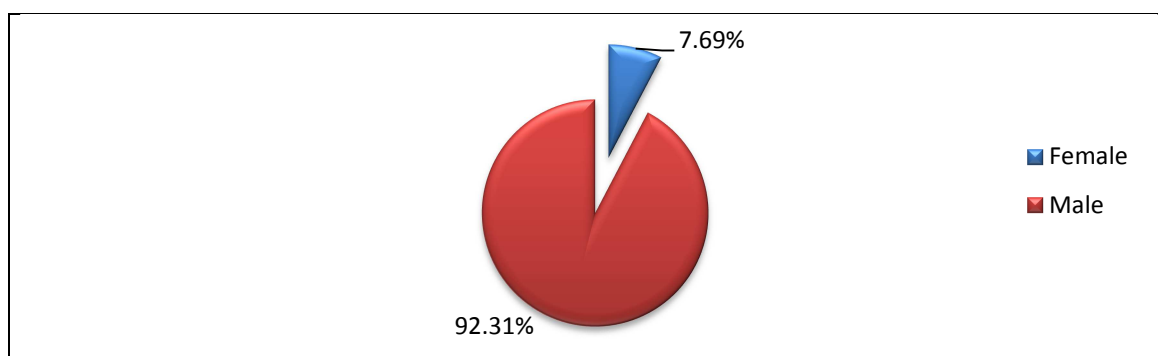


FIGURE 4.1: GENDER DISTRIBUTION OF RESPONDENTS
[Appendix B2 Section A, Question 1] (n=13)

4.2.1.2 Age profile of respondents

Table 4.2 shows the age profile of the respondents. It varies between 30 and 70 years of age. Most of the respondents (39%) were in the age group 31-40 years, which reflects the tendency of newly qualified specialists to stay on in academic practice in order to gain more experience. An interesting fact is that 23% of respondents were in the age group 61-70 years. The "aging" of Urologists in academic practice is something that can become a real crisis in the training of potential Urologists and should be addressed urgently by the South African Urological Association.

TABLE 4.2: AGE PROFILE OF RESPONDENTS
[Appendix B2, Section A, Question 2] (n=12)

AGE (YEARS)	FREQUENCY	PERCENTAGE
31-40	5	41.67%
41-50	3	25.00%
51-60	2	16.67%
61-70	2	16.67%

(Note by Researcher SWW: One of the respondents did not fill in their age in the questionnaire survey. The age profile of the respondents is therefore calculated on only the 12 respondents that did complete this section in the questionnaire).

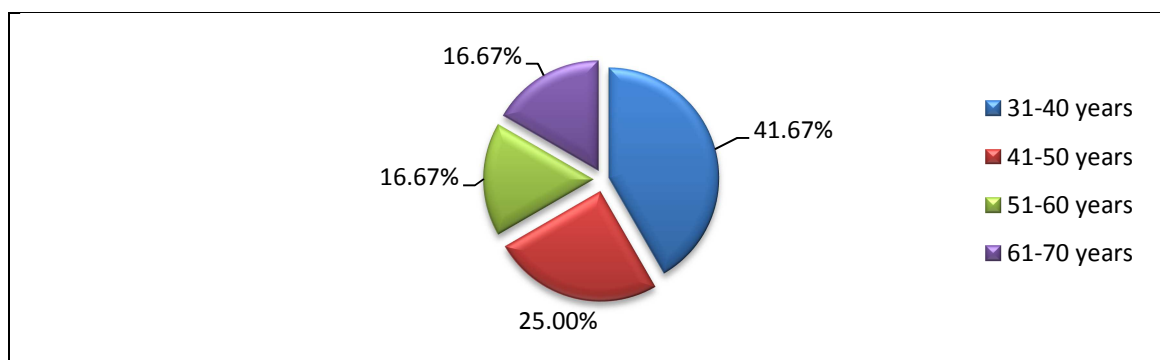


FIGURE 4.2: AGE PROFILE OF RESPONDENTS
[Appendix B2, Section A, Question 2] (n=13)

4.2.1.3 *Experience in a Department of Urology*

Table 4.3 shows the experience of the respondents in a specific Department of Urology and deals with the years of experience of the respondents in the specific department. About half of the respondents (46%) have experience of 6-10 years while only 23% of respondents have experience of more than 20 years.

TABLE 4.3: EXPERIENCE IN A DEPARTMENT OF UROLOGY
[Appendix B2, Section A, Question 3] (n=13)

NUMBER OF YEARS	FREQUENCY	PERCENTAGE
3-5	2	15.38%
6-10	6	46.15%
11-15	2	15.38%
16-20	0	0.00%
>20	3	23.08%

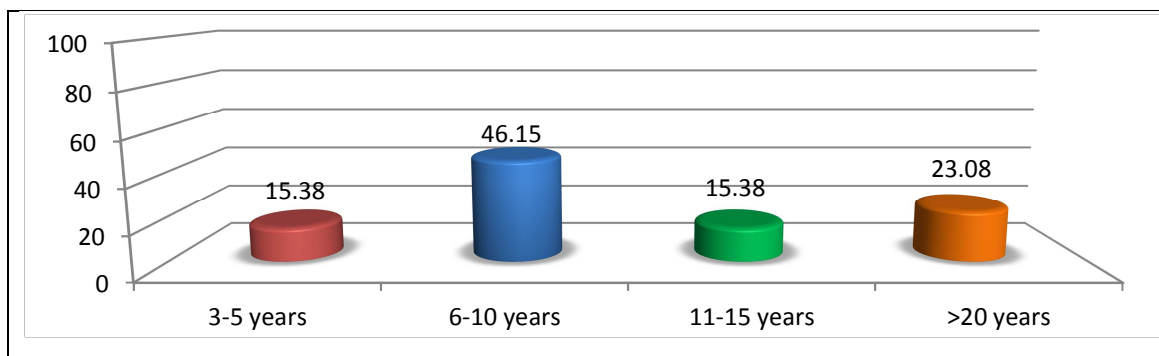


FIGURE 4.3: EXPERIENCE IN A DEPARTMENT OF UROLOGY
[Appendix B2, Section A, Question 3] (n=13)

4.2.1.4 Qualification profile

Table 4.4 gives an indication of the qualifications of the respondents. Most respondents had obtained either the MMed (Urology); Fellowship of the College of Urology (FC Urology) or both as their specialist qualification. It is a concern that only one respondent had achieved a Doctorate in Medicine (7.69%). Five respondents (38.46%) had other qualifications, for example BSc or MBA degrees.

TABLE 4.4: QUALIFICATION PROFILE IN A DEPARTMENT OF UROLOGY
[Appendix B2, Section A, Question 4] (n=13)

QUALIFICATION	FREQUENCY	PERCENTAGE
MBChB	13	100%
MD	1	92.31%
Other	5	61.54%
MMed (Urology)	10	23.08%
FC Urology	10	23.08%

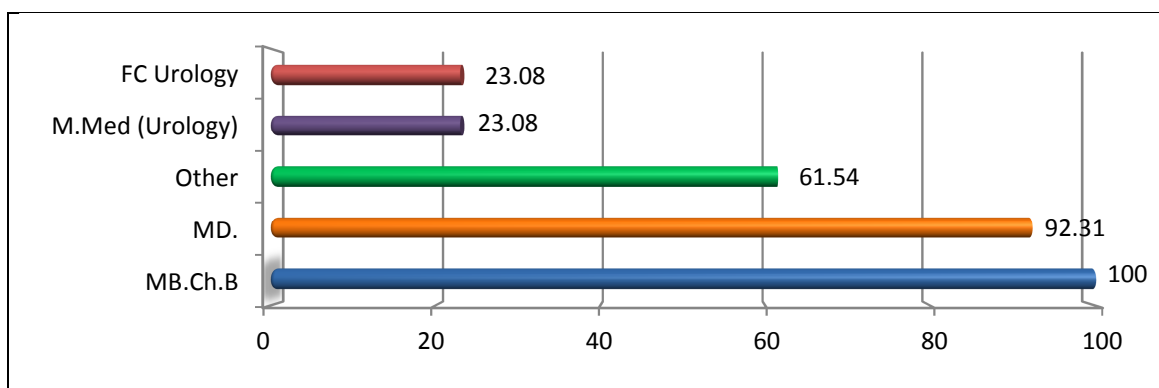


FIGURE 4.4: QUALIFICATION PROFILE IN A DEPARTMENT OF UROLOGY
[Appendix B2, Section A, Question 4] (n=13)

4.2.1.5 Years in current Department

The years of experience correlate well with the employment profile seen in Section 4.2.1.3. Most respondents (38%) had been employed at their current department for 6-10 years, while 23.08% had been employed for 11-15 years and 23.08% for more than 15 years.

TABLE 4.5: YEARS IN CURRENT DEPARTMENT
[Appendix B2, Section A, Question 5] (n=13)

YEARS	FREQUENCY	PERCENTAGE
0-2	1	7.69%
3-5	1	7.69%
6-10	5	38.46%
11-15	3	23.08%
>15	3	23.08%

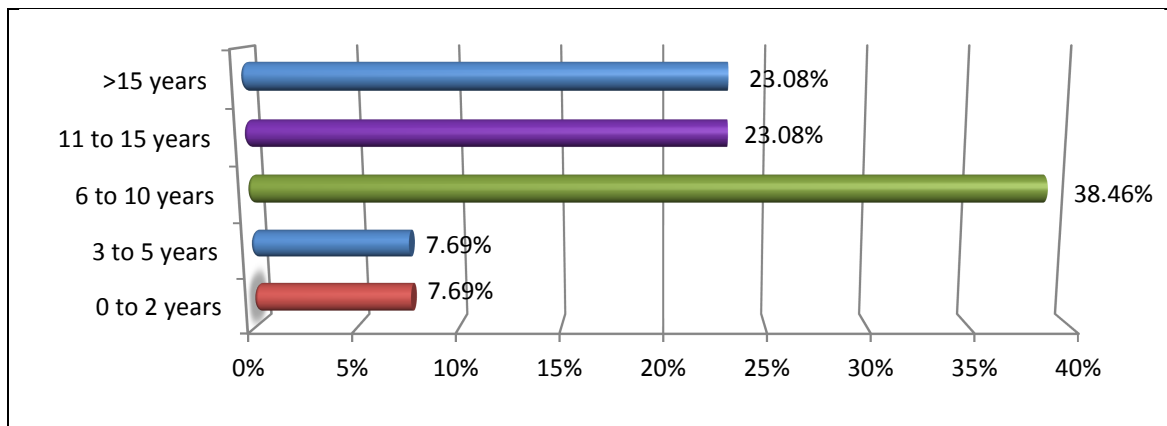


FIGURE 4.5: YEARS IN CURRENT DEPARTMENT
[Appendix B2, Section A, Question 5] (n=13)

4.2.1.6 Home language

The majority of the respondents' home language was Afrikaans (75%) while 17% were English speaking. This does not correspond well with the language distribution amongst Urologists in full-time academic practice, but may indicate the lack of response the researcher had from the English-speaking departments of Urology. One of the respondent's home languages was Tswana, while another respondent did not indicate a home language.

TABLE 4.6: HOME LANGUAGE
[Appendix B2, Section A, Question 6] (n=12)

LANGUAGE	FREQUENCY	PERCENTAGE
Afrikaans	9	75.00%
English	2	16.67%
Other	1	8.33%

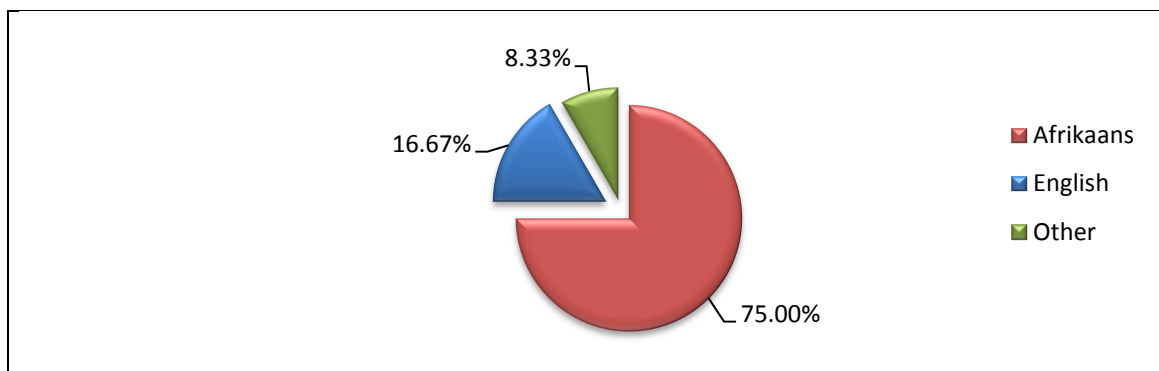


FIGURE 4.6: HOME LANGUAGE
[Appendix B2, Section A, Question 6] (n=12)

4.2.1.7 *Function(s) in programme/school/department*

In this section, the respondents were asked about their functions in the programme at their institution. All respondents were involved in clinical work and lecturing while 69.23% of respondents had administrative duties and 61.54% management duties as well. A healthy percentage of respondents (84.62%) indicated that they were active researchers, but only 15.38% of respondents were involved in community service.

TABLE 4.7: FUNCTION(S) IN PROGRAMME/SCHOOL/DEPARTMENT
[Appendix B2, Section A, Question 7] (n=13)

FUNCTION	FREQUENCY	PERCENTAGE
Lecturing	13	100.00%
Clinical work	13	100.00%
Research	11	84.62%
Administration	9	69.23%
Management	8	61.54%
Community service	2	15.38%
Part-time lecturer	1	8.33%

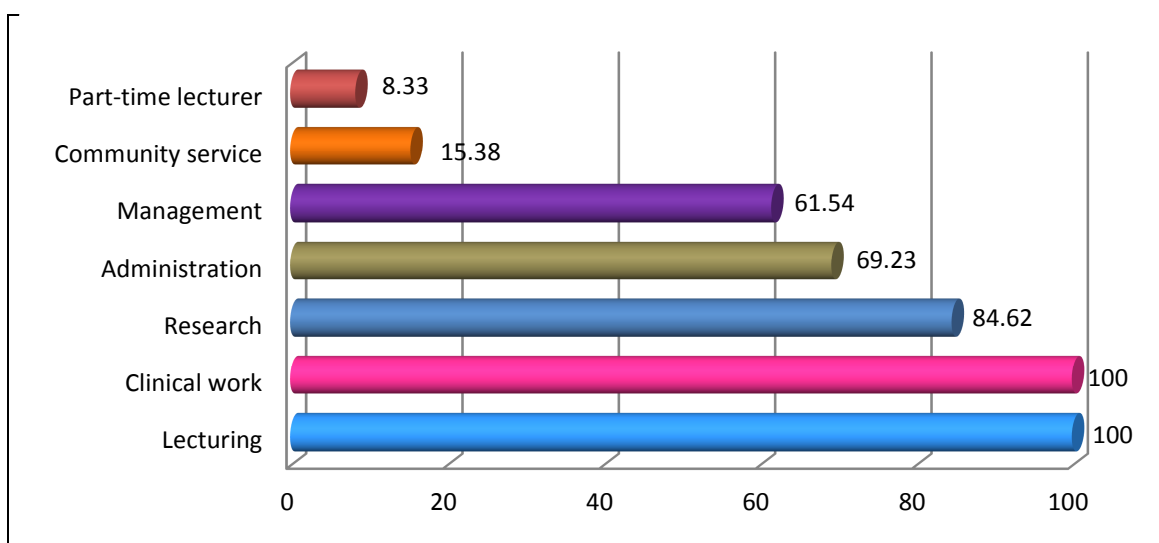


FIGURE 4.7: FUNCTION(S) IN PROGRAMME/SCHOOL/DEPARTMENT
[Appendix B2, Section A, Question 7] (n=13)

4.2.1.8 *Prioritisation of functions*

In this section, the respondents were asked to prioritise their responsibilities in a department from most important to least important. About half of the respondents felt that management and administrative duties were a low priority, but clinical work (84.62%) and lecturing (76.92%) were both seen as high priority. The fact that administrative duties are not regarded as a high priority may be a contributing factor towards the low response rates seen in this study. An interesting figure was the 53% who saw research activities as high priority and 30.77% as a medium priority. These figures are in contradiction with the low research outputs by the different departments of Urology seen countrywide.

TABLE 4.8: FUNCTIONS PRIORITISED
[Appendix B2, Section A, Question 8 and 9] (n=13)

FUNCTIONS	LOW PRIORITY (1-2)	MEDIUM PRIORITY (3)	HIGH PRIORITY (4 & 5)
Clinical work	7.69%	7.69%	84.62%
Lecturing	15.38%	7.69%	76.92%
Research	15.38%	30.77%	53.85%
Management	46.15 %	7.69%	46.15%
Administration	53.85 %	0.00%	46.15%
Community Service	90.00%	0.00%	10.00%
Other	100.00%	0.00%	0.00%

4.2.1.9 *Current employment*

About a third (38.46%) held the position of head of the department, while 30.77% of the respondents were employed as specialists and 23.08% as senior specialists.

TABLE 4.9: CURRENT EMPLOYMENT
[Appendix B2, Section A, Question 10] (n=13)

POSITION	FREQUENCY	PERCENTAGE
Head of Department	5	38.46%
Specialist	4	30.77%
Senior Specialist	3	23.08%
Professor	2	15.38%
Chief Specialist	1	7.69%
Principal Specialist	1	7.69%
Associate Professor	0	0.00%

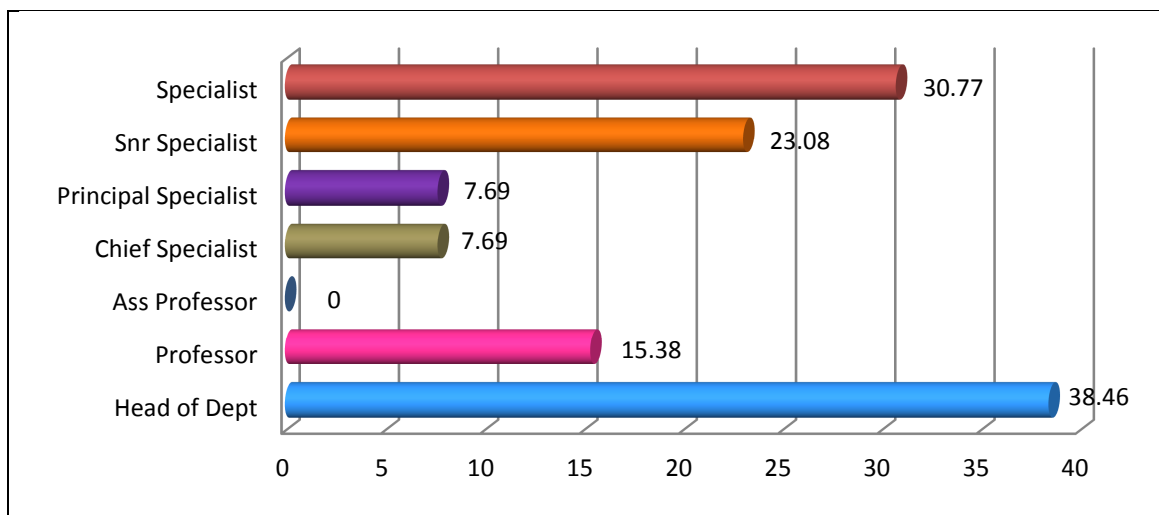


FIGURE 4.8: CURRENT EMPLOYMENT
[Appendix B2, Section A, Question 9] (n=13)

4.2.1.10 Adequate experience in assessment

In this section, the respondents were asked about their experience in assessment of different levels of education. Most of the respondents were involved in formative assessment of postgraduate students, while 69.23% of respondents were involved in the final examination of postgraduate students (summative assessment). Only 23.08% of the respondents had participated in the assessment of PhD or Doctoral theses.

TABLE 4.10: ADEQUATE EXPERIENCE IN ASSESSMENT
[Appendix B2, Section A, Question 10] (n=13)

TYPE OF ASSESSMENT	FREQUENCY	PERCENTAGE
Philosophiae Doctor or Doctoral thesis	3	23.08%
Postgraduate students in final assessment before qualification (summative)	9	69.23%
Undergraduate students only	9	69.23%
Postgraduate students during training (formative)	12	92.31%

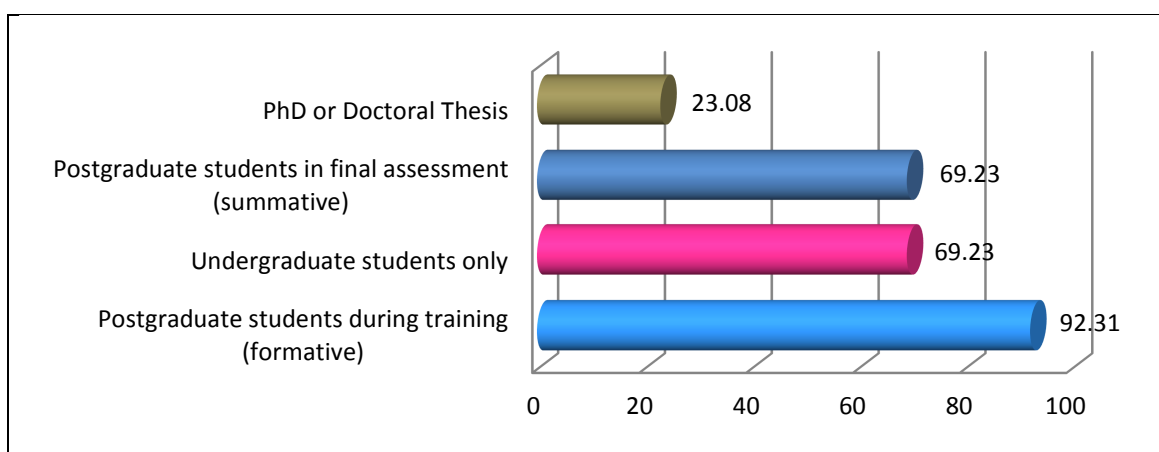


FIGURE 4.9: ADEQUATE EXPERIENCE IN ASSESSMENT
[Appendix B2, Section A, Question 6] (n=12)

4.2.1.11 Summative discussion on demographic detail

Although the response rate in this questionnaire survey was very disappointing, the demographic details indicated that a good spread of senior and junior assessors participated in the survey. The possible reasons for the disappointing response rate will be discussed in detail in Chapter 7 under limitations of the study (cf. Chapter 7, Section 7.4.2). It is clear that the respondents put a high price tag on their clinical work and lecturing responsibilities and do not want to spend a lot of time with administrative and management issues. I am convinced that the lack of interest in administrative duties is a contributing factor towards the low response rates in this questionnaire survey. Urologists just do not have the time to spend 30 minutes completing a questionnaire because of their numerous other responsibilities.

4.2.2 Outcomes-based education and assessment in Higher Education (HE)

4.2.2.1 Factors that plays a role in assessment

[Appendix B2, Section B] (n=13)

Several factors played a role in assessment according to the respondents. This includes self-knowledge of the assessor about their own assessment attitude (76.93%), the attitude of the assessor towards the changes in HE (69.23%) and the assessor's willingness to learn about changes in HE. The respondents felt that formal training in assessment does not play a very important role in assessment, as indicated by only 38.7% of respondents answering in the affirmative on this question.

TABLE 4.11: FACTORS THAT PLAYS A ROLE IN ASSESSMENT
[Appendix B2, Section B] (n=13)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% PLAYS A ROLE
Self-knowledge of own assessment attitude (including style) (n=13)	7.69%	15.38%	76.93%
Attitude towards the changes in higher education (n=13)	15.38%	15.38%	69.23%
Willingness to learn about changes in higher education (n=13)	7.6%	15.38%	69.23%
Understanding of difference between assessment and evaluation (n=13)	15.38%	23.08%	61.53%
Knowledge of current changes in higher education (n=13)	15.38%	30.77%	53.85%
Formal training of lecturer in assessment (n=13)	23.08%	38.46%	38.46%

(Note by Researcher SWW: The percentages have been worked out to the second decimal figure. Therefore the percentages would not add up to 100% in some cases. These are applicable to all the tables in this chapter where percentages have been worked out).

4.2.2.2 Importance of the factors that plays a role in assessment **[Appendix B2, Section B] (n=13)**

Self-knowledge of your own assessment attitude was seen as the most important factor that plays a role in assessment (84.61%). Formal training of a lecturer in assessment (69.23%) and willingness to learn about changes in HE (61.53%) were seen as important factors in assessment as well. Only 38.4% of respondents felt that the lecturer needs to understand the difference between assessment and evaluation.

TABLE 4.12: IMPORTANCE OF THE FACTORS THAT PLAYS A ROLE IN ASSESSMENT
[Appendix B2, Section C] (n=13)

FACTOR	% NOT IMPORTANT	% LESS IMPORTANT	% IMPORTANT – VERY IMPORTANT
Self-knowledge of own assessment attitude (including style) (n=13)	0.00%	15.38%	84.61%
Formal training of lecturer in assessment (n=13)	0.00%	30.77%	69.23%
Willingness to learn about changes in higher education (n=13)	15.38%	23.08%	61.53%
Knowledge of current changes in higher education (n=13)	23.08%	23.08%	53.85%
Attitude towards the changes in higher education (n=13)	30.77%	15.38%	53.84%
Understanding of difference between assessment and evaluation (n=13)	23.08%	38.46%	38.46%

4.2.3 Purpose of assessment

This section deals with issues related to the purpose of assessment.

4.2.3.1 Factors that plays a role in the purpose of assessment **[Appendix B2, Section B] (n=13)**

According to the respondents, the most important purposes of assessment were that it gives the learner the opportunity to monitor their progress (69.23%) and that it certifies that a specific level of performance has been achieved (61.54%). Another

important purpose is that it was able to identify areas where adjustments in teaching and learning can be made (61.54%). In contrast, a low percentage of respondents (23.08%) felt that assessment should be described as an outcome at the beginning of a programme or module.

TABLE 4.13: FACTORS THAT PLAYS A ROLE IN THE PURPOSE OF ASSESSMENT
[Appendix B2, Section C] (n=13)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
The purpose of assessment is to give learners the opportunity to monitor their progress (n=13)	0.00%	7.69%	23.08%	69.23%
The assessment certifies that a specific level of performance has been achieved (n=13)	0.00%	15.38%	23.08%	61.54%
Assessment identifies areas where adjustments in teaching and learning can be made (n=13)	0.00%	7.69%	30.77%	61.54%
The assessment is a learning experience(n=13)	0.00%	30.77%	15.38%	53.85%
The purpose of assessment is to classify or rank the performance of students (n=13)	7.69%	30.77%	15.38%	46.15%
The assessment is described in the form of an outcome(n=13)	0.00%	23.08%	53.85%	23.08%

4.2.3.2 Importance of the factors that plays a role in the purpose of assessment

[Appendix B2, Section C] (n=13)

According to the respondents, the most important purpose of assessment is to certify that a specific level of performance has been achieved (69.23%) and that it identifies areas where adjustments in teaching and learning can be made (61.54%). Only 15.38% of respondents felt that assessment should be described as an outcome at the onset of the learner's studies.

TABLE 4.14: IMPORTANCE OF THE FACTORS THAT PLAYS A ROLE IN THE PURPOSE OF ASSESSMENT [Appendix B2, Section C] (n=13)

FACTOR	% NOT IMPORTANT	% LESS IMPORTANT	% IMPORTANT	% VERY IMPORTANT
The assessment certifies that a specific level of performance has been achieved (n=13)	0.00%	0.00%	30.77%	69.23%
Assessment identifies areas where adjustments in teaching and learning can be made (n=13)	0.00%	15.38%	23.08%	61.54%
The assessment is a learning experience (n=13)	7.69%	15.38%	23.08%	53.85%
The purpose of assessment is to give learners the opportunity to monitor their progress (n=13)	0.00%	7.69%	46.15%	46.15%
The purpose of assessment is to classify or rank the performance of students (n=13)	7.69%	30.77%	15.38%	46.15%
The assessment is described in the form of an outcome (n=13)	15.38%	23.08%	46.15%	15.38%

4.2.3.3 *Participants' rating of the role of the different types of assessment* [Appendix B2, Section C] (n=13)

Approximately a third of the respondents (30.77%) felt that diagnostic assessment and formative assessment play a definite role in assessment, while 61.54% felt that it might play a role. Only 15.38% of respondents felt that summative assessment plays a definite role in assessment.

TABLE 4.15: PARTICIPANTS' RATING OF THE ROLE OF THE DIFFERENT TYPES OF ASSESSMENT [Appendix B2, Section C] (n=13)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Diagnostic Assessment (n=13)	0.00%	7.69%	61.54%	30.77%
Formative Assessment (n=13)	0.00%	7.69%	61.54%	30.77%
Summative Assessment (n=13)	23.08%	46.15%	15.38%	15.38%

4.2.3.4 *Participants' rating of the importance of the different types of assessment*

[Appendix B2, Section C] (n=13)

According to the participants, diagnostic assessment was the most important type of assessment (46.15%), followed by summative assessment (23.08%).

TABLE 4.16: PARTICIPANTS' RATING OF THE IMPORTANCE OF THE DIFFERENT TYPES OF ASSESSMENT [Appendix B2, Section C] (n=13)

FACTOR	NOT IMPORTANT	LESS IMPORTANT	IMPORTANT	VERY IMPORTANT
Diagnostic Assessment (n=13)	0.00%	15.38%	38.46%	46.15%
Summative Assessment (n=13)	15.38%	38.46%	23.08%	23.08%
Formative Assessment (n=13)	30.77%	53.85%	7.69%	7.69%

4.2.3.5 *Participants' rating of the role of the different types of secondary assessment*

[Appendix B2, Section C] (n=13)

Respondents felt that the ability to judge if students were ready to enter the next phase of a programme plays an important role in secondary assessment (53.85%). The role of feedback to the teacher (30.77%) played a bigger role in assessment than the role of feedback to the student (15.38%).

TABLE 4.17: PARTICIPANTS' RATING OF THE ROLE OF THE DIFFERENT TYPES OF SECONDARY ASSESSMENT [Appendix B2, Section C] (n=13)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Readiness of students to enter the next phase of a Programme (n=13)	7.69%	7.69%	30.77%	53.85%
The role of feedback to teachers (n=13)	7.69%	30.77%	30.77%	30.77%
Selection of the best available students (n=13)	15.38%	30.77%	38.46%	15.38%
The role of feedback to students (n=13)	0.00%	30.77%	53.85%	15.38%
Grading of students' knowledge into a point on an arbitrary Scale (n=13)	30.77%	53.85%	7.69%	7.69%

4.2.3.6 *Participants' rating of the importance of the different types of secondary assessment* [Appendix B2, Section C] (n=13)

Respondents felt that the advantage of secondary assessment was that it provided feedback to teachers (30.77%). Secondary assessment was also important to certify the readiness of a student to enter the next phase of a programme (46.15%).

TABLE 4.18: PARTICIPANTS' RATING OF THE IMPORTANCE OF THE DIFFERENT TYPES OF SECONDARY ASSESSMENT [Appendix B2, Section C] (n=13)

FACTOR	NOT IMPORTANT	LESS IMPORTANT	IMPORTANT	VERY IMPORTANT
Readiness of students to enter the next phase of a Programme (n=13)	7.69%	0.00%	46.15%	46.15%
The role of feedback to teachers (n=13)	7.69%	15.38%	46.15%	30.77%
The role of feedback to students (n=13)	0.00%	7.69%	69.23%	23.08%
Selection of the best available students (n=13)	15.38%	38.46%	23.08%	23.08%
Grading of students' knowledge into a point on an arbitrary Scale (n=13)	30.77%	53.85%	7.69%	7.69%

4.2.4 Learner assessment

This section deals with issues related to the mechanisms of learner assessment to ensure good assessment practices.

4.2.4.1 *Role of the different mechanisms for learner assessment* [Appendix B2, Section D] (n=13)

In this section, the respondents were asked if certain mechanisms of learner assessment play a role in assessment. The respondents felt that the objectivity of the assessment process (61.54%), the fact that learner responsibilities must be defined before the start of the module (46.15%), integrated assessment covering all aspects of the learning programme (46.15%) and a systematic assessment programme that will ensure uniformity of assessment across all subjects/modules definitely played a role in assessment (46.15%). Factors that did not play a role according to the respondents include the necessity of assessors to receive training in assessment methodologies (15.38%) and the statement that emphasis should be shifted away from the content aspect towards the objective assessment of the performances of students (7.69%).

TABLE 4.19: ROLE OF THE DIFFERENT MECHANISMS FOR LEARNER ASSESSMENT
[Appendix B2, Section D] (n=13)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Readiness of students to enter the next phase of a Programme (n=13)	7.69%	0.00%	46.15%	46.15%
The assessment process must be objective (n=13)	0.00%	23.08%	15.38%	61.54%
Learners responsibilities must be clearly stated (n=13)	0.00%	7.69%	46.15%	46.15%
There must be an integrated method of assessment covering all aspects of the learning programme (n=13)	7.69%	30.77%	15.38%	46.15%
There must be a systematic assessment programme, which will aim to ensure uniformity of assessment across all subjects/modules (n=13)	0.00%	15.38%	38.46%	46.15%
There must be an assessment taskforce/group/committee, which will include experts (n=13)	0.00%	30.77%	30.77%	38.46%
All forms of assessment are moderated by appropriately trained moderators with specific expertise in the learning area (n=13)	7.69%	15.38%	38.46%	38.465
Moderation of learner assessment should take place to ensure that the required standard is observed (n=13)	7.69%	38.46%	15.38%	38.46%
Moderation of learner assessment should take place to ensure that the required level of fairness is observed (n=13)	7.69%	23.08%	30.77%	38.46%
Moderation of learner assessment should take place to ensure that the required level of appropriateness is observed (n=13)	7.69%	30.77%	30.77%	30.77%
The outcome for every student in a programme should be equivalent and clearly stated (n=13)	0.00%	46.15%	23.08%	30.77%
Assessment criteria for each of the abilities/ skills that have been developed (n=13)	0.00%	15.38%	53.85%	30.77%

TABLE 4.19: ROLE OF THE DIFFERENT MECHANISMS FOR LEARNER ASSESSMENT [Appendix B2, Section D] (n=13) (continue...)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Assessors must receive formal training in assessment methodology in terms of Higher Education Quality Control requirements for assessors (n=13)	0.00%	15.38%	69.23%	15.38%
Emphasis should be shifted away from the content aspect of programmes towards the objective assessment of performance of students in terms of clearly stated outcomes (n=13)	0.00%	38.46%	53.85%	7.69%

4.2.4.2 Importance of the different mechanisms for learner assessment [Appendix B2, Section D] (n=13)

The important mechanisms of learner assessment according to the respondents were the objectiveness of the assessment (53.85%), the uniformity of assessment across all subjects/modules (46.15%) and the development of assessment criteria for the assessment of every skill/attitude that is included in the curriculum (46.15%). The respondents felt that formal training in assessment was not important (23.08%). They were in complete agreement that the emphasis should NOT be shifted away from the content aspect of programmes towards the objective assessment of performance of students (0%).

TABLE 4.20: IMPORTANCE OF THE DIFFERENT MECHANISMS FOR LEARNER ASSESSMENT [Appendix B2, Section D] (n=13)

FACTOR	% NOT IMPORTANT	% LESS IMPORTANT	% IMPORTANT	% VERY IMPORTANT
The assessment process must be objective	0.00%	15.38%	30.77%	53.85%
There must be a systematic assessment programme, which will aim to ensure uniformity of assessment across all subjects/modules	0.00%	23.08%	30.77%	46.15%
Assessment criteria for each of the abilities/ skills that have been developed	0.00%	30.77%	23.08%	46.15%

TABLE 4.20: IMPORTANCE OF THE DIFFERENT MECHANISMS FOR LEARNER ASSESSMENT [Appendix B2, Section D] (n=13) (continue...)

FACTOR	% NOT IMPORTANT	% LESS IMPORTANT	% IMPORTANT	% VERY IMPORTANT
There must be an assessment taskforce/group/committee which will include experts	0.00%	30.77%	30.77%	38.46%
There must be an integrated method of assessment covering all aspects of the learning programme	15.38%	30.77%	15.38%	38.46%
All forms of assessment are moderated by appropriately trained moderators with specific expertise in the learning area	7.69%	23.08%	30.77%	38.46%
Moderation of learner assessment should take place to ensure that the required standard is observed	15.38%	23.08%	23.08%	38.46%
Moderation of learner assessment should take place to ensure that the required level of appropriateness is observed	7.69%	23.08%	30.77%	38.46%
Moderation of learner assessment should take place to ensure that the required level of fairness is observed	7.69%	23.08%	30.77%	38.46%
Learners' responsibilities must be defined	7.69%	7.69%	53.85%	30.77%
The outcomes for every student in a programme should be equivalent to one another and clearly stated	7.69%	38.46%	30.77%	23.08%
Assessors must receive formal training in assessment methodology in terms of Higher Education Quality Control requirements for assessors	7.69%	23.08%	46.15%	23.08%
Emphasis should be shifted away from the content aspect of programmes towards the objective assessment of performance of students in terms of clearly stated outcomes	15.38%	30.77%	53.85%	0.00%

4.2.5 Quality assurance (QA) in assessment

This section deals with issues related to QA in assessment.

4.2.5.1 *Factors that play a role in quality assurance during assessment* [Appendix B2, Section E] (n=13)

According to respondents, the factors that played a role in quality assurance (QA) of assessment are the need to communicate assessment events to learners in advance (53.85%), the need for a departmental policy on assessment (53.85%), the use of external examiners during the assessment process (53.85%) and a definite medical school policy on assessment and re-assessment (46.15%).

Factors that did not play a role in QA according to the respondents included the use of a scoring rubric to ensure objectivity and consistency (15.38%) and communication to learners on the type of questions that will be asked in the examinations (15.38%).

TABLE 4.21: FACTORS THAT PLAYS A ROLE IN QUALITY ASSURANCE DURING ASSESSMENT [Appendix B2, Section E] (n=13)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Assessment-requirements have to be communicated with learners in advance (n=13)	0.00%	15.38%	30.77%	53.85%
Department policy on assessment (n=13)	15.38%	23.08%	7.69%	53.85%
Making use of external examiners (n=13)	0.00%	0,00%	46.15%	53.85%
School policy on assessment (n=13)	7.69%	30.77%	15.38%	46.15%
School policy on re-assessment (n=13)	0.00%	46.15%	7.69%	46.15%
Programme policy on re-assessment (n=13)	7.69%	38.46%	15.38%	38.46%
Giving learners enough opportunity (e.g. time) to prepare for assessment (n=13)	0.00%	30.77%	30.77%	38.46%
Explain to learners how the weight of individual assessment is determined (n=13)	0.00%	23.08%	38.46%	38.46%

TABLE 4.21: FACTORS THAT PLAY A ROLE IN QUALITY ASSURANCE DURING ASSESSMENT [Appendix B2, Section E] (n=13) (continue...)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Communication to learners on the learning content that will be covered in the assessment (n=13)	7.69%	30.77%	23.08%	38.46%
Procedures to ensure reliability in assessment (n=13)	15.38%	23.08%	23.08%	38.46%
Programme implementation guideline on assessment (n=13)	0.00%	46.15%	15.38%	38.46%
Assessing the learner more than once per module (various assessments) (n=13)	15.38%	30.77%	23.08%	30.77%
Institution policy on assessment (n=13)	7.69%	30.77%	30.77%	30.77%
Faculty policy on assessment (n=13)	7.69%	23.08%	38.46%	30.77%
Communication to learners on the length of assessment (n=13)	7.69%	30.77%	38.46%	23.08%
Consultation with colleagues with regard to judgement on the content (outcomes) covered (n=13)	7.69%	30.77%	38.46%	23.08%
Consultation with colleagues with regard to judgement on the assessment process (n=13)	7.69%	30.77%	38.46%	23.08%
Procedures to ensure validity in assessment (n=13)	7.69%	30.77%	38.46%	23.08%
Procedures to ensure trustworthiness in assessment (n=13)	7.69%	23.08%	46.15%	23.08%
Making use of memoranda (n=13)	0.00%	46.15%	30.77%	23.08%
Making use of internal moderators (n=13)	0.00%	30.77%	46.15%	23.08%
Making use of external moderators (n=13)	7.69%	23.08%	46.15%	23.08%
Using a score rubric (including criteria) to ensure objectivity and consistency (n=13)	7.69%	30.77%	46.15%	15.38%
Communication to learners on the type of questions (n=13)	0.00%	30.77%	53.85%	15.38%

4.2.5.2 Importance of the factors that play a role in quality assurance during assessment

[Appendix B2, Section E] (n=13)

The most important factors that played a role to ensure QA were a departmental policy on assessment (53.85%); the use of external examiners during assessment (46.15%) and a school policy on assessment and re-assessment of learners (46.15%). The least important factors that played a role in QA were a faculty policy on assessment (23.08%); a programme implementation guideline on assessment (23.08%) and communication to learners on the type of questions that will be asked in the examinations (15.38%).

TABLE 4.22: IMPORTANCE OF THE FACTORS THAT PLAY A ROLE IN QUALITY ASSURANCE DURING ASSESSMENT [Appendix B2, Section E] (n=13)

FACTOR	% NOT IMPORTANT	% LESS IMPORTANT	% IMPORTANT	% VERY IMPORTANT
Department policy on assessment (n=13)	23.08%	23.08%	0.00%	53.85%
Making use of external examiners (n=13)	0.00%	7.69%	46.15%	46.15%
School policy on re-assessment (n=13)	7.69%	38.46%	7.69%	46.15%
Programme policy on re-assessment (n=13)	15.38%	23.08%	15.38%	46.15%
Assessment-events have to be communicated with learners in advance (n=13)	0.00%	7.69%	53.85%	38.46%
Explain to learners how the weight of individual assessment is determined (n=13)	0.00%	38.46%	23.08%	38.46%
Communication to learners on the learning content that will be covered in the assessment (n=13)	0.00%	46.15%	15.38%	38.46%
Assessing the learner more than once per module (various assessments) (n=13)	30.77%	30.77%	7.69%	30.77%
Giving learners enough opportunity (e.g. time) to prepare for assessment (n=13)	0.00%	23.08%	46.15%	30.77%
Communication to learners on the length of assessment (n=13)	23.08%	30.77%	15.38%	30.77%
Consultation with colleagues with regard to judgement on the assessment process (n=13)	7.69%	38.46%	23.08%	30.77%

TABLE 4.22: IMPORTANCE OF THE FACTORS THAT PLAY A ROLE IN QUALITY ASSURANCE DURING ASSESSMENT [Appendix B2, Section E] (n=13) (continue...)

FACTOR	% NOT IMPORTANT	% LESS IMPORTANT	% IMPORTANT	% VERY IMPORTANT
Procedures to ensure reliability in assessment (n=13)	7.69%	23.08%	38.46%	30.77%
Institution policy on assessment (n=13)	30.77%	23.08%	15.38%	30.77%
School policy on assessment	30.77%	23.08%	15.38%	30.77%
Consultation with colleagues with regard to judgement on the content (outcomes) covered (n=13)	7.69%	38.46%	30.77%	23.08%
Procedures to ensure validity in assessment (n=13)	7.69%	38.46%	30.77%	23.08%
Procedures to ensure trustworthiness in assessment (n=13)	7.69%	23.08%	46.15%	23.08%
Making use of memoranda (n=13)	30.77%	30.77%	15.38%	23.08%
Making use of internal moderators (n=13)	15.38%	23.08%	38.46%	23.08%
Faculty policy on assessment (n=13)	23.08%	23.08%	30.77%	23.08%
Programme implementation guideline on assessment (n=13)	23.08%	30.77%	23.08%	23.08%
Communication to learners on the type of questions (n=13)	15.38%	23.08%	46.15%	15.38%

4.2.6 Principles of assessment

This section deals with the principles of assessment.

4.2.6.1 *Factors that play a role in the principles of assessment* **[Appendix B2, Section F] (n=13)**

The most important principles of assessment according to the respondents included the fact that assessment should be regarded as an integral part of learning (84.62%), assessment should be fair (69.23%), and reliable (61.54%). The respondents also felt that assessment tasks should be valid (61.54%) and the assessment workload should be realistic (53.85%).

TABLE 4.23: FACTORS THAT PLAY A ROLE IN THE PRINCIPLES OF ASSESSMENT
[Appendix B2, Section F] (n=13)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Assessment is an integral part of learning (n=13)	0.00%	0.00%	15.38%	84.62%
Assessment should be fair (n=13)	0.00%	0.00%	30.77%	69.23%
Assessment process should be reliable (n=13)	7.69%	7.69%	23.08%	61.54%
Assessment tasks should be valid (n=13)	0.00%	15.38%	23.08%	61.54%
Assessment workload should be realistic (n=13)	7.69%	0.00%	38.46%	53.85%
Assessment should be transparent (n=13)	0.00%	23.08%	23.08%	53.85%
Assessment should be integral to quality assurance procedures (n=13)	0.00%	15.38%	30.77%	53.85%
Assessment should focus on deep, active learning (n=13)	0.00%	23.08%	30.77%	46.15%
Assessment purposes determine the assessment methods (n=13)	7.69%	23.08%	23.08%	46.15%
Assessment involves higher-order cognitive skills (n=13)	7.69%	7.69%	46.15%	38.46%
Application of relevant assessment criteria (n=13)	0.00%	0.00%	61.54%	38.46%
Procedures to ensure validity of assessment (n=13)	0.00%	30.77%	30.77%	38.46%
Assessment should include a wide range of approaches (n=13)	0.00%	23.08%	38.46%	38.46%
Assessment should provide feedback to support the learning process (n=13)	7.69%	7.69%	46.15%	38.46%

4.2.6.2 Importance of the factors that play a role in the principles of assessment

[Appendix B2, Section F] (n=13)

The important factors that played a role in the principles of assessment were the fact that assessment should be an integral part of learning (84.62%); assessment should be fair (69.23%); assessment should provide feedback to support the learning process (61.54%); during assessment relevant assessment criteria should be implemented (53.85%) and that assessment processes should be reliable (53.85%) and transparent (53.85%).

TABLE 4.24: IMPORTANCE OF THE FACTORS THAT PLAY A ROLE IN THE PRINCIPLES OF ASSESSMENT [Appendix B2, Section F] (n=13)

FACTOR	% NOT IMPORTANT	% LESS IMPORTANT	% IMPORTANT	% VERY IMPORTANT
Assessment is an integral part of learning (n=13)	0.00%	7.69%	7.69%	84.62%
Assessment should be fair (n=13)	0.00%	0.00%	30.77%	69.23%
Assessment should provide feedback to support the learning process (n=13)	7.69%	0.00%	30.77%	61.54%
Application of relevant assessment criteria (n=13)	0.00%	15.38%	30.77%	53.85%
Assessment process should be reliable (n=13)	0.00%	7.69%	38.46%	53.85%
Assessment should be transparent (n=13)	0.00%	23.08%	23.08%	53.85%
Assessment should focus on deep, active learning(n=13)	15.38%	0.00%	38.46%	46.15%
Assessment tasks should be valid (n=13)	0.00%	23.08%	30.77%	46.15%
Procedures to ensure validity of assessment (n=13)	7.69%	23.08%	23.08%	46.15%
Assessment involves higher-order cognitive skills (n=13)	7.69%	15.38%	38.46%	38.46%
Assessment workload should be realistic (n=13)	0.00%	15.38%	46.15%	38.46%
Assessment should include a wide range of approaches (n=13)	7.69%	15.38%	38.46%	38.46%
Assessment should be integral to quality assurance procedures (n=13)	15.38%	7.69%	38.46%	38.46%
Assessment purposes determine the assessment methods (n=13)	15.38%	23.08%	30.77%	30.77%

4.2.7 Planning and construction of assessment

This section deals with issues related to the planning and construction of assessment.

4.2.7.1 Factors that play a role in the planning and construction of assessment

[Appendix B2, Section G] (n=13)

Different factors played a role in the planning and construction of assessment. The respondents felt that the factors that definitely played a role included the identification of the skills that should be assessed (53.85%), the use of formative assessment as part of student training (53.85%), thorough analysis of the students' results (53.85%) and the fact that the assessors must identify the capabilities that should be part of assessment already at the start of the student's training (46.15%).

Factors that did not play a role in the planning and construction of assessment include the use of peer assessment (15.38%); the use of patient assessment (15.38%); the use of a rubric (scoring card) for assessment (7.69%) and the use of self-assessment (7.69%).

TABLE 4.25: FACTORS THAT PLAY A ROLE IN THE PLANNING AND CONSTRUCTION OF ASSESSMENT [Appendix B2, Section G] (n=13)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Identification of the skills that must be assessed (n=13)	0.00%	15.38%	30.77%	53.85%
Using formative assessment (n=13)	0.00%	23.08%	23.08%	53.85%
Analyses of student results (n=13)	7.69%	7.69%	30.77%	53.85%
The process of alignment (outcomes, methods, assessment, feedback planned together) is planned (n=13)	7.69%	30.77%	15.38%	46.15%
Identification of the capabilities that must be assessed (n=13)	0.00%	15.38%	38.46%	46.15%
Formulation of clearly stated outcomes (n=13)	0.00%	23.08%	38.46%	38.46%
Determination of the assessment method agreement with the knowledge defined by the outcome (n=13)	0.00%	38.46%	23.08%	38.46%
Using a variety of assessment methods (n=13)	7.69%	15.38%	38.46%	38.46%

TABLE 4.25: FACTORS THAT PLAY A ROLE IN THE PLANNING AND CONSTRUCTION OF ASSESSMENT [Appendix B2, Section G] (n=13) (continue...)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Developing of assessment criteria (n=13)	0.00%	23.08%	38.46%	38.46%
Using summative assessment (n=13)	0.00%	23.08%	46.15%	30.77%
Using criteria-referenced assessment (n=13)	23.08%	23.08%	23.08%	30.77%
Interpretation of student results (n=13)	0.00%	23.08%	46.15%	30.77%
Planning timely feedback	7.69%	30.77%	30.77%	30.77%
Identification of feedback method (n=13)	7.69%	30.77%	38.46%	23.08%
Using norm-referenced assessment (n=13)	7.69%	38.46%	30.77%	23.08%
Accommodation of the level of assessment (e.g. Bloom's taxonomy) (n=13)	23.08%	23.08%	38.46%	15.38%
Using peer assessment (n=13)	15.38%	38.46%	30.77%	15.38%
Using patient assessment (n=13)	46.15%	30.77%	7.69%	15.38%
Planning of rubric (scoring card) for assessment (n=13)	15.38%	23.08%	53.85%	7.69%
Using self-assessment (n=13)	15.38%	61.54%	15.38%	7.69%

4.2.7.2 Importance of the factors that play a role in the planning and construction of assessment

[Appendix B2, Section G] (n=13)

According to the respondents, the most important factors to keep in mind when planning and constructing an assessment were the use of a variety of assessment methods (46.15%), the use of formative assessment (46.15%), the use of summative assessment (46.15%) and the analysis of the students' results (46.15%).

According to the respondents, the least important factors to consider when planning and constructing an assessment included the use of self-assessment (7.69%); the use of a rubric for assessment (7.69%) and the accommodation of different levels of assessment e.g. Bloom's taxonomy (7.69%).

TABLE 4.26: IMPORTANCE OF THE FACTORS THAT PLAY A ROLE IN THE PLANNING AND CONSTRUCTION OF ASSESSMENT [Appendix B2, Section G] (n=13)

FACTOR	% NOT IMPORTANT	% LESS IMPORTANT	% IMPORTANT	% VERY IMPORTANT
Using a variety of assessment methods (n=13)	7.69%	15.38%	30.77%	46.15%
Using formative assessment (n=13)	0.00%	15.38%	38.46%	46.15%
Using summative assessment (n=13)	0.00%	23.08%	30.77%	46.15%
Analyses of student results(n=13)	7.69%	15.38%	30.77%	46.15%
Identification of the capabilities that must be assessed (n=13)	7.69%	15.38%	38.46%	38.46%
Identification of the skills that must be assessed (n=13)	0.00%	7.69%	53.85%	38.46%
Developing of assessment criteria (n=13)	15.38%	15.38%	38.46%	30.77%
Formulation of clearly stated outcomes (n=13)	15.38%	23.08%	38.46%	23.08%
The process of alignment (outcomes, methods, assessment, feedback planned together) is planned (n=13)	23.08%	30.77%	23.08%	23.08%
Using peer assessment (n=13)	15.38%	38.46%	23.08%	23.08%
Interpretation of student results (n=13)	0.00%	23.08%	53.85%	23.08%
Planning timely feedback (n=13)	7.69%	38.46%	30.77%	23.08%
Determination of the assessment method and agreement with the skills defined by the outcome (n=13)	16.67%	33.33%	33.33%	16.67%
Using patient assessment (n=13)	46.15%	23.08%	15.38%	15.38%
Using criteria-referenced assessment (n=13)	30.77%	15.38%	38.46%	15.38%
Using norm-referenced assessment (n=13)	23.08%	38.46%	23.08%	15.38%
Identification of feedback method(n=13)	30.77%	15.38%	38.46%	15.38%
Using self-assessment (n=13)	30.77%	46.15%	15.38%	7.69%
Planning of rubric (scoring card) for assessment (n=13)	30.77%	23.08%	38.46%	7.69%
Accommodation of the level of assessment (e.g. Bloom's taxonomy) (n=13)	30.77%	30.77%	30.77%	7.69%

4.2.8 Feedback on assessment and the use of assessment results

This section deals with issues related to feedback on assessment and the use of assessment results.

4.2.8.1 *Factors that play a role in feedback on assessment and the use of assessment results*

[Appendix B2, Section H] (n=13)

The respondents felt that the interpretation of the assessment results (46.15%) and the use of various methods to give feedback played a role in feedback on assessment and the use of assessment results. The motivation why feedback is given (7.69%) did not play a role in feedback.

TABLE 4.27: FACTORS THAT PLAY A ROLE IN FEEDBACK ON ASSESSMENT AND THE USE OF ASSESSMENT RESULTS [Appendix B2, Section H] (n=13)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Interpretation of assessment results (n=13)	0.00%	38.46%	15.38%	46.15%
Using various methods for giving feedback (n=13)	0.00%	15.38%	38.46%	46.15%
Analysis of assessment results (n=13)	0.00%	23.08%	38.46%	38.46%
Timely feedback after assessment (n=13)	7.69%	30.77%	30.77%	30.77%
Motivation why feedback is given (n=13)	23.08%	46.15%	23.08%	7.69%

4.2.8.2 *Importance of the factors that play a role in feedback on assessment and the use of assessment results*

[Appendix B2, Section H] (n=13)

The most important factors that played a role in feedback on assessment and the use of assessment results were the interpretation of assessment results (46.15%), the analysis of assessment results (38.46%) and timely feedback after assessment (38.46%). The use of various methods of feedback (7.69%) was not an important factor according to the respondents.

TABLE 4.28: IMPORTANCE OF THE FACTORS THAT PLAY A ROLE IN FEEDBACK ON ASSESSMENT AND THE USE OF ASSESSMENT RESULTS
[Appendix B2, Section H] (n=13)

FACTOR	% NOT IMPORTANT	% LESS IMPORTANT	% IMPORTANT	% VERY IMPORTANT
Interpretation of assessment results (n=13)	0.00%	15.38%	38.46%	46.15%
Analysis of assessment results (n=13)	0.00%	23.08%	38.46%	38.46%
Timely feedback after assessment (n=13)	0.00%	38.46%	23.08%	38.46%
Using various methods for giving feedback (n=13)	23.08%	46.15%	23.08%	7.69%
Motivation why feedback is given (n=13)	30.77%	30.77%	30.77%	7.69%

4.2.9 Types/strategies of assessment

This section deals with different strategies of assessment.

4.2.9.1 *Different types/strategies of assessment*

[Appendix B2, Section I] (n=13)

The respondents felt that the strategies of assessment that should be included in the assessment model were formative assessment (53.85%), summative assessment (38.46%), norm-referenced assessment (30.77%) and diagnostic assessment (30.77%). About two-thirds of the respondents (61.54%) felt the criterion-referenced assessment might play a role in the assessment of registrars while respondents were not clear about the role of self-assessment.

TABLE 4.29: TYPES/STRATEGIES OF ASSESSMENT
[Appendix B2, Section I] (n=13)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Formative assessment (n=13)	0.00%	15.38%	30.7%	53.85%
Summative assessment (n=13)	0.00%	30.77%	30.77%	38.46%
Norm-referenced assessment (n=13)	15.38%	7.69%	46.15%	30.77%
Diagnostic assessment (n=13)	15.38%	23.08%	30.77%	30.77%
Performance-based assessment (n=13)	0.00%	7.69%	69.23%	23.08%
Alternative assessment (n=13)	23.08%	30.77%	30.77%	15.38%

TABLE 4.29: TYPES/STRATEGIES OF ASSESSMENT
[Appendix B2, Section I] (n=13) (continue...)

FACTOR	% DEFINITELY DOES NOT PLAY A ROLE	% NOT SURE IF IT PLAYS A ROLE	% MIGHT PLAY A ROLE	% DEFINITELY PLAYS A ROLE IN ASSESSMENT
Authentic assessment(n=13)	15.38%	23.08%	46.15%	15.38%
Traditional assessment (n=13)	7.69%	7.69%	69.23%	15.38%
Criterion-referenced assessment (n=13)	15.38%	15.38%	61.54%	7.69%
Self- assessment (n=13)	38.46%	38.46%	15.38%	7.69%

4.2.9.2 Importance of the different types/strategies of assessment **[Appendix B2, Section I] (n=13)**

The important types / strategies of assessment, according to the respondents, were formative assessment (46.15%); summative assessment (46.15%) and performance-based assessment (46.15%). Self-assessment (7.69%) was not seen as an important type/strategy of assessment.

TABLE 4.30: IMPORTANCE OF THE DIFFERENT TYPES/STRATEGIES OF ASSESSMENT
[Appendix B2, Section I] (n=13)

FACTOR	% NOT IMPORTANT	% LESS IMPORTANT	% IMPORTANT	% VERY IMPORTANT
Formative assessment (n=13)	0.00%	7.69%	46.15%	46.15%
Summative assessment (n=13)	0.00%	30.77%	23.08%	46.15%
Performance-based assessment (n=13)	0.00%	7.69%	46.15%	46.15%
Authentic assessment (n=13)	23.08%	15.38%	38.46%	23.08%
Norm-referenced assessment(n=13)	15.38%	23.08%	38.46%	23.08%
Diagnostic assessment (n=13)	23.08%	30.77%	23.08%	23.08%
Traditional assessment (n=13)	7.69%	15.38%	61.54%	15.38%
Alternative assessment (n=13)	30.77%	23.08%	30.77%	15.38%
Criterion-referenced assessment (n=13)	23.08%	23.08%	53.85%	0.00%
Self- assessment (n=13)	38.46%	38.46%	15.38%	7.69%

4.2.10 Assessment methods and their appropriateness

This section deals with different assessment methods and the appropriateness thereof.

4.2.10.1 *Time to set up the different assessment methods*

[Appendix B2, Section J] (n=13)

When asked about the time necessary to set up different assessment methods, the respondents felt that the objective structured clinical examination (OSCE) (76.92%), multiple choice questions (MCQ) (69.23%) and portfolios (61.54%) were the assessment methods that took up the most time to compile because a lot of thinking and preparation is necessary to prepare the questions. On the contrary, the essay type question (61.54%); paper case studies (46.15%) and orals (46.15%) were the assessment methods that took the least time to set up.

**TABLE 4.31: TIME TO SET UP THE DIFFERENT ASSESSMENT METHODS
[Appendix B2, Section J] (n=13)**

ASSESSMENT METHOD	% SHORT	% AVERAGE	% LONG
OSCE'S (n=13)	0.00%	23.08%	76.92%
MCQ'S (n=13)	23.08%	7.69%	69.23%
Portfolios (n=13)	7.69%	30.77%	61.54%
Scripts-/ Mini-dissertations(n=13)	15.38%	30.77%	53.84%
Clinical cases (n=13)	7.69%	38.46%	53.85%
Short Answers (n=13)	23.08%	38.46%	38.46%
Orals (Vivas) (n=13)	46.15%	15.38%	38.46%
Assignments (n=13)	30.77%	38.46%	30.76%
Case study (paper) (n=13)	46.15%	30.77%	23.08%
Essay-type questions (n=13)	61.54%	30.77%	7.69%

4.2.10.2 *Time to mark the different assessment methods*

[Appendix B2, Section J] (n=13)

The respondents felt that portfolios (76.92%); scripts / mini-dissertations (76.92%); essay type questions (61.54%) and assignments (61.54%) were the assessment methods that took the longest time to mark. The MCQ's (84.62%); orals (76.92%) and clinical cases (69.23%) were the assessment methods that take up the least time to mark.

TABLE 4.32: TIME TO MARK THE DIFFERENT ASSESSMENT METHODS
[Appendix B2, Section J] (n=13)

ASSESSMENT METHOD	% SHORT	% AVERAGE	% LONG
Portfolios	0.00%	23.08%	76.92%
Scripts/ Mini-dissertations	0.00%	23.08%	76.92%
Essay-type questions	15.38%	23.08%	61.54%
Assignments	0.00%	38.46%	61.54%
Short Answers	38.46%	23.08%	38.46%
Case study (paper)	23.08%	38.46%	38.46%
Orals (Vivas)	76.92%	7.69%	15.38%
OSCE'S	53.85%	30.77%	15.38%
MCQ'S	84.62%	15.38%	0.00%
Clinical cases	69.23%	30.77%	0.00%

4.2.10.3 Time necessary to give feedback on the different assessment methods

[Appendix B2, Section J] (n=13)

According to the respondents, feedback on the scripts / mini-dissertations (61.54%) and portfolios (53.85%) required a lot of time. The short answer questions (61.54%), MCQ's (61.54%), orals (58.33%) and the OSCE's (46.15%) required the least time for feedback.

TABLE 4.33: TIME TO GIVE FEEDBACK ON THE DIFFERENT ASSESSMENT METHODS
[Appendix B2, Section J] (n=13)

ASSESSMENT METHOD	% SHORT	% AVERAGE	% LONG
Scripts/ Mini-dissertations (n=13)	7.69%	30.77%	61.54%
Portfolios (n=13)	7.69%	38.46%	53.85%
Short Answers (n=13)	61.54%	15.38%	23.08%
OSCE'S (n=13)	46.15%	30.77%	23.08%
Essay-type questions(n=13)	33.33%	50.00%	16.66%
Case study (paper) (n=13)	16.67%	66.67%	16.67%
MCQ'S (n=13)	61.54%	23.08%	15.38%
Assignments (n=13)	15.38%	69.23%	15.38%
Orals (Vivas) (n=13)	58.33%	41.67%	0.00%
Clinical cases (n=13)	38.46%	61.54%	0.00%

4.2.10.4 Appropriateness of the different methods for the assessment of knowledge

[Appendix B2, Section J] (n=13)

The general feeling among the respondents was that the most appropriate methods for the assessment of knowledge were the OSCE's (69.23%); essay-type questions (69.23%); paper case studies (61.53%); orals (61.53%) and clinical cases (61.53%).

According to the responses, the portfolios (15.38%) were not considered an appropriate method for the assessment of knowledge.

TABLE 4.34: APPROPRIATENESS OF THE DIFFERENT METHODS FOR THE ASSESSMENT OF KNOWLEDGE [Appendix B2, Section J] (n=13)

ASSESSMENT METHOD	% NOT APPROPRIATE	% SOMEWHAT APPROPRIATE	% VERY APPROPRIATE
OSCE'S (n=13)	7.69%	23.08%	69.23%
Essay-type questions (n=13)	7.69%	23.08%	69.23%
Case study (paper) (n=13)	0.00%	38.46%	61.53%
Orals (Vivas) (n=13)	7.69%	30.77%	61.53%
Clinical cases (n=13)	7.69%	30.77%	61.53%
Short Answers (n=13)	0.00%	46.15%	53.85%
Scripts/ Mini-dissertations (n=13)	23.08%	38.46%	38.46%
MCQ'S (n=13)	0.00%	69.23%	30.77%
Assignments (n=13)	30.77%	38.46%	30.77%
Portfolios (n=13)	30.77%	53.85%	15.38%

4.2.10.5 Appropriateness of the different methods for the assessment of skills

[Appendix B2, Section J] (n=13)

According to the respondents the most appropriate methods for the assessment of skills were the clinical cases (69.32%), OSCE's (53.84%) and the paper case studies (46.15%). On the contrary, assignments (15.38%), scripts / mini-dissertations (23.08%) and short answer questions (23.08%) were seen as inappropriate methods of assessment regarding skills.

TABLE 4.35: APPROPRIATENESS OF THE DIFFERENT METHODS FOR THE ASSESSMENT OF SKILLS [Appendix B2, Section J] (n=13)

ASSESSMENT METHOD	% NOT APPROPRIATE	% SOMEWHAT APPROPRIATE	% VERY APPROPRIATE
Clinical cases (n=13)	15.38%	15.38%	69.23%
OSCE'S (n=13)	7.69%	38.46%	53.84%
Case study (paper) (n=13)	23.08%	30.77%	46.15%
Orals (Vivas) (n=13)	23.08%	38.46%	38.46%
MCQ'S (n=13)	46.15%	23.08%	30.77%
Essay-type questions (n=13)	23.08%	46.15%	30.77%
Portfolios (n=13)	38.46%	30.77%	30.77%
Short Answers (n=13)	30.77%	46.15%	23.08%
Scripts-/Mini-dissertations (n=13)	38.46%	38.46%	23.08%
Assignments (n=13)	53.84%	30.77%	15.38%

4.2.10.6 Appropriateness of the different methods for the assessment of professional behaviour (including attitudes and values) [Appendix B2, Section J] (n=13)

Assessment of a student should include assessment of professional behaviour (including attitudes and values) (cf. Appendix B1, Section I). According to the respondents, the most appropriate of the assessment methods to assess professional behaviour were clinical cases (61.53%), paper case studies (38.46%) and orals (38.46%). Inappropriate methods to assess professional behaviour included MCQ's (61.54%), essay type questions (53.84%), assignments (53.84%) and portfolios (53.84%).

TABLE 4.36: APPROPRIATENESS OF THE DIFFERENT METHODS FOR THE ASSESSMENT OF PROFESSIONAL BEHAVIOUR (INCLUDING ATTITUDES AND VALUES) [Appendix B2, Section J] (n=13)

ASSESSMENT METHOD	% NOT APPROPRIATE	% SOMEWHAT APPROPRIATE	% VERY APPROPRIATE
Clinical cases (n=13)	7.69%	30.77%	61.53%
Case study (paper) (n=13)	30.77%	30.77%	38.46%
Orals (Vivas) (n=13)	15.38%	46.15%	38.46#
MCQ'S (n=13)	61.54%	15.38%	23.08\$
Essay-type questions (n=13)	53.84%	30.77%	15.38%
Short Answers (n=13)	38.46%	46.16%	15.38%
OSCE'S (n=13)	46.15%	38.46%	15.38%
Assignments (n=13)	53.84%	30.77%	15.38%
Scripts/ Mini-dissertations (n=13)	38.46%	46.15%	15.38%
Portfolios (n=13)	53.84%	38.46%	7.69%

4.2.10.7 Appropriateness of the different methods for the assessment of clinical competence [Appendix B2, Section J] (n=13)

When asked to judge the appropriateness of the different models for the assessment of clinical competence, the respondents felt that the best models for the assessment of clinical competence were the clinical cases (61.54%), the paper case studies (53.85%), the orals (38.46%) and the OSCE's (38.46%).

Inappropriate methods for the assessment of clinical competence included the MCQ's (7.69%), scripts / mini-dissertations (7.69%) and assignments (7.69%).

TABLE 4.37: APPROPRIATENESS OF THE DIFFERENT METHODS FOR THE ASSESSMENT OF CLINICAL COMPETENCE [Appendix B2, Section J] (n=13)

ASSESSMENT METHOD	% NOT APPROPRIATE	% SOMEWHAT APPROPRIATE	% VERY APPROPRIATE
Clinical cases (n=13)	7.69%	30.77%	61.54%
Case study (paper) (n=13)	7.69%	38.46%	53.85%
Orals (Vivas) (n=13)	7.69%	53.85%	38.46%
OSCE'S (n=13)	15.38%	46.15%	38.46%
Short Answers (n=13)	23.08%	53.85%	23.08%
Essay-type questions (n=13)	46.15%	30.77%	23.08%
Portfolios (n=13)	38.46%	38.46%	23.08%
Assignments (n=13)	46.15%	46.15%	7.69%
Scripts/ Mini-dissertations (n=13)	46.15%	46.15%	7.69%
MCQ'S (n=13)	53.85%	38.46%	7.69%

4.2.10.8 Remarks made by the respondents in the open-ended questions

The researcher added some open-ended questions to the questionnaire which serves as the qualitative component of the research study. The open-ended questions provided the respondents with an opportunity to add comments about the assessment method. The comments made by the respondents on the importance of the different assessment methods as a part of the assessment model and the appropriateness of the assessment methods to assess the knowledge, skills, professional behaviour and clinical competence of the students will be included in the following paragraphs.

Short questions

Certain respondents felt that this method covers a wide area of the learner's knowledge and is a good test of practical knowledge. However, the compilation of this assessment method is time consuming and is therefore not used by many assessors.

Multiple-choice questions (MCQ)

This is a good method of assessment when high numbers of students are assessed and is quick to mark. A contrary opinion was that it is a "puzzle for monkeys" and is only useful in "student factories" where thousands of students are assessed simultaneously. Some respondents felt that it is a useless method to assess knowledge and that it encourages "educated guessing".

Essay-type questions

This method is a good indicator of academic knowledge and also assesses the learners' structured thought processes and their ability to organise and communicate information. Essay-type questions are seen as one of the best methods to expose deficits in a candidate's knowledge.

Case studies (paper)

The respondents' opinion was that this method tests integration of facts and gives a good indication of candidates' working knowledge. It also is a valuable tool to assess their attitude and their ability to manage "real life" situations.

Orals (Vivas)

This method assesses the candidates' communication skills and their ability to structure their thoughts while under pressure. It is able to assess in-depth knowledge over a wide range of subjects in a rapid manner. It gives the candidate an opportunity to "argue" their case with the assessor.

Clinical cases

This method of assessment gives the examiner the opportunity to observe a candidate's ability to examine a patient and is therefore a good indicator of their clinical skills. The assessor can also make an assessment of the candidate's ability to apply their knowledge in a "real life" situation.

Objective structured clinical examination (OSCE's)

This method of assessment gives the assessor the opportunity to assess areas of clinical importance that cannot be assessed in a clinical case scenario or in an oral examination. Clinical scenarios can be mimicked without the presence of a patient and the application of the candidate's practical knowledge can be assessed in this way.

Portfolio

Some respondents felt that this method is essential for the formative assessment of a candidate. It is very valuable to determine if a candidate has sufficient clinical skills, competencies and experience to be admitted to the final summative examination. Other respondents felt that this method is currently very fashionable, but has doubtful value.

Assignments

The respondents felt that this method is only valuable when it is used as part of the correct scenario (for example, as part of the academic programme of a Urology department).

Scripts / mini-dissertations

This method of assessment should be an integral part of postgraduate education and is essential to assess the candidate's ability to critically evaluate the available literature about a given subject. It gives the assessor the chance to assess the candidate's knowledge of research methodology and it gives the candidate an opportunity to contribute to the expansion of knowledge in their field of research.

The comments that were provided by the respondents to the questionnaire survey in the open-ended questions were used in combination with the literature review that was described in Chapter 2 to formulate the statements that were used to compile the Delphi questionnaire. The different rounds of the Delphi process will be described in the next chapter, Chapter 5.

4.3 FINAL REMARKS

After the analyses of the open-ended questions, the researcher has come to the conclusion that there are differences among Urologists about several areas in postgraduate education and training of registrars in Urology (cf. Chapter 4, Section 4.2.1.2). Among the tendencies observed by the researcher during the analysis was the impression that the older Urologists resist the modern trends in HE while the younger professionals were more willing to accept these inevitable changes. The older

Urologists seem to believe that traditional assessment was the best way to continue while the younger professionals believe that alternative assessment methods should be implemented.

There were also differences between them in that some of the “traditional” Urologists felt that the portfolio was just a new “fashion” among educationalists while others believe that the portfolio is extremely important and will form the mainstay of formative assessment in the future. During the development of the portfolio for the College of Urology in 2009 the responses of the College of Urology for inputs were very limited and most Urologists felt that it was an unnecessary exercise. The problems with the response rate will be discussed in Chapter 7.

In the next chapter, Chapter 5 entitled **RESULTS AND DISCUSSION OF FINDINGS OF THE DELPHI PROCESS**, the different rounds of the Delphi process as well as the results thereof will be discussed.

CHAPTER 6

ASSESSMENT MODEL FOR THE TRAINING OF MEDICAL POSTGRADUATE STUDENTS IN UROLOGY

6.1 INTRODUCTION

The aim of this study was to develop an assessment model for the training of medical postgraduate students in Urology. The researcher was convinced that there were shortcomings in the assessment that are currently used to assess postgraduate students in Urology. Therefore a literature study was undertaken (cf. Chapter 2, 2.3.1-2.3.8). The researcher identified several problems in the assessment model that is currently used in the assessment of postgraduate students in Urology. This included the lack of a well-coordinated policy on formative assessment, the deficiencies in assessor training and qualifications in Health Sciences Education (HSE) and the inconsistent moderation and quality assurance mechanisms of the final assessment process in Urology. The assessment methods that are currently used during the final assessment opportunity of the Urology registrar were another aspect that intrigued the researcher and an in-depth study of the available assessment methods and the advantages and disadvantages were included in the research.

In this chapter, the researcher proposes an assessment model that can answer to the following requirements:

- It must fulfil the necessary requirements of Higher Education, especially HSE
- Assessment has to be part of the learning process and must be advantageous to both the student and the assessor
- Assessment must include both formative and summative assessment methods that can also be part of the learning experience
- Assessment must be valid, fair and trustworthy in all aspects
- Quality assurance mechanisms that comply with the criteria of the South African Quality Assurance Authority (SAQA), must be in place
- A variety of assessment methods must be used to enable assessors to have clarity on not only the knowledge of the students, but also their clinical skills, attitudes towards their patients, teachers and allied personnel, interpersonal relationships with colleagues, and their ethical values.

If the assessment model for registrars in Urology as proposed by the researcher is accepted by the College of Urologists, it is possible that the proposed assessment model might be used as a template by other Colleges in the College of Medicine of South Africa (CMSA).

In the quest to develop the assessment model, the first step was a comprehensive literature review of the available literature on the subject (cf. Chapter 2). With the literature review as background information, the researcher developed a questionnaire survey that was sent to all the Urologists in South Africa (SA) with a permanent appointment at an academic institution as well as Urologists in private practice with a part-time appointment in a department of Urology at a Medical School in SA. This questionnaire included some demographic details about the participants and asked their opinion about the purpose and principles of assessment in HSE, the role of feedback and the importance thereof, quality assurance in assessment as well as the opinion of the participants about the currently available methods that can be used in the assessment of postgraduate students (cf. Chapter 4).

After the statistical analysis of the received questionnaires and with the literature review as a background, the researcher proceeded to a Delphi process. After careful consideration, the Delphi panel was selected and consisted of five Urologists with experience in teaching and assessment of Urology registrars and five experts in Higher Education (HE). The researcher developed the Delphi questionnaire (cf. Appendix D2). A four-round Delphi process followed where consensus was reached on 86% of the statements and stability was declared on the remaining 14% of the questions (cf. Chapter 5, Table 5.1 and Table 5.2).

Chapter 1 of the thesis serves as an introduction and orientation about the goal of the study. The literature review that was undertaken to serve as a backbone for the development of the questionnaire survey to Urologists is presented in Chapter 2. In Chapter 3 the researcher described the research design and the research methods that were used in this study, while Chapter 4 provided the results of the questionnaire survey and an in-depth discussion of the interpretation thereof. Chapter 5 discussed the different rounds of the Delphi process, the analysis thereof and is concluded by the final results of the 189 statements that were made in the Delphi process.

In this chapter, the researcher will proceed to present the proposed assessment model for postgraduate students in Urology. This will be done after careful consideration of the literature review, questionnaire to Urologists and the Delphi process among the experts on Urology and HE.

The proposed assessment model will be discussed in three parts as described hereunder:

1. The important aspects about Outcomes-based Education (OBE) and assessment in HSE that every assessor in postgraduate Urology should know and incorporate in their armamentarium.
2. The different aspects of assessment that are important to ensure a sound and reliable assessment policy. The proposed assessment policy will include information about the purpose of assessment of the postgraduate Urology student and the mechanisms employed in learner assessment that play a role to ensure good assessment practices. The role of quality assurance in the assessment of postgraduate students in Urology as well as proposed mechanisms of quality assurance that should be in place to ensure that the Urology fraternity complies with the quality assurance requirements of SAQA will be a part of the assessment policy. The levels of performance (taxonomies) that need to be assessed during formative and summative assessment of postgraduate students in Urology and the use of feedback as motivation during training of the postgraduate students in Urology is another aspect that will be included in the assessment policy. Lastly the researcher will propose strategies of assessment that should be included in the assessment model.
3. The appropriate assessment methods that should be used during both formative and summative assessment to ensure satisfactory assessment of the registrar's knowledge, clinical skills, writing and communication skills, attitudes, interpersonal relationships and ethical values.

The three aspects of assessment, namely, knowledge about OBE and assessment in HSE, the proposed assessment policy and the appropriate assessment methods will be discussed separately, but will then be incorporated in the final proposed "Assessment Model for the Training of Medical Postgraduate Students in Urology" (cf. Figure 6.4).

6.2 KNOWLEDGE ABOUT ASSESSMENT IN POSTGRADUATE HIGHER EDUCATION

The researcher came to the conclusion that knowledge about aspects of OBE and HE is crucial in the assessment of postgraduate students in Urology. Knowledge of the aspects that will be discussed in the following paragraphs will contribute towards the learning experience of the students and will make assessment a learning opportunity, not only for the students but also for the assessors. The different aspects will be discussed separately and the researcher will explain why the knowledge of the specific aspect is necessary for the assessors. However it is important that every aspect that will be discussed should not be seen in isolation but forms part of a bigger picture which is the assessment model proposed for postgraduate students in Urology.

6.2.1 Willingness to learn about changes in Higher Education (HE)

It is clear in the literature that alternative (constructive) assessment which can be described as learning “from” assessment (cf. Chapter 2, Section 2.4.1) should be included as part of the assessment in HE. Traditional assessment which can be described as learning “for” assessment (cf. Chapter 2, Section 2.4.1) has been the only form of assessment for many years in the past. In medical education, this statement is even more accurate because for many years the assessors were clinicians with limited knowledge of modern educational techniques. However, this is about to change and in future the ideal assessor should be a good clinician with extensive knowledge about the educational principles of assessment and how to apply it in the process of assessment. OBE is especially suitable to medical education and has been embraced by several medical schools all over the world (cf. Chapter 2, Section 2.4). The characteristics of OBE, as described in Chapter 2, Section 2.4, will be used as part of the proposed assessment model.

The respondents to the questionnaire survey (cf. Chapter 4) also felt strongly about the changes that are necessary in modern HE and almost 70% agreed that there should be a willingness among assessors to learn about the changes in HE (cf. Chapter 4, Table 4.11). About a third of the respondents in the questionnaire were younger than 40 years and almost two-thirds younger than 50 years of age (cf. Chapter 4, Table 4.2). This may play a role in that younger professionals usually have more energy and are keen to explore modern educational principles.

In the Delphi process, the experts agreed that there should be a willingness to learn about changes in HE and consensus was reached in Round Two of the Delphi process when 100% of the panel agreed on this statement (cf. Chapter 5, Table 5.2, Section A).

6.2.2 Positive attitude towards the changes in Higher Education

It is hard to believe, but there are still some assessors that prefer the so-called "butcher's" model of assessment (cf. Chapter 2, Section 2.4.4.3) where the assessor is the sole judge that decides on the sufficient acquisition of knowledge. Learners' performances are compared to each other (norm-referenced criteria) and these assessors do not believe in feedback. In modern education, the assessor is more flexible and uses a combination of formative and summative assessment methods to judge the performance of the students (cf. Chapter 2, Section 2.4.4.3). The final decision is made on the competence of a learner to reach a certain outcome (criterion referenced assessment) and feedback to the student and the teacher forms an integral part of the assessment process.

The opinion of the respondents in the questionnaire survey among academic Urologists was in favour of a positive attitude towards the changes in HE. Two-thirds of the respondents indicated that a positive attitude towards the changes in HE was necessary and important for assessors (cf. Chapter 4, Table 4.11). The opinion of the panelists in the Delphi process was that a positive attitude was useful but not essential for assessors. Consensus was reached in Round Two of the Delphi process where 90% of the panelists agreed on the aforementioned statement (cf. Chapter 5, Table 5.2, Section A).

The researcher is of the opinion that an assessor should be positive about the modern developments in HE. Internal formative assessment had always been part of the Urology curriculum. Registrars received formal assessment during their ward rounds and as part of the academic programme. However, there never was a formal policy on formative assessment and it was not officially assessed. The researcher believe that a formal formative assessment policy should be in place and the results of the candidates' formative assessment could be used at the final summative assessment especially if the candidate is a borderline candidate or a candidate for a distinction. In summative assessment, the assessor is the sole judge that ultimately decides if a

student has passed or failed (cf. Chapter 2, Section 2.4.4.3). There are still some Urologists that feel strongly that the principles of OBE are a waste of time and that the College of Urologists has to stick to traditional assessment methods. This, in the researcher's view, is due to a lack of knowledge about the several advantages of OBE, not only for the student but for the assessors as well. The more one learns about the changes in HE as the researcher did during the literature review, the more one becomes aware of the necessity to move away from traditional assessment methods as the sole method of assessment.

A positive attitude towards changes in HE is therefore extremely important, because that would be the first step towards the next proposal of the assessment model, namely training in the principles of assessment.

6.2.3 Training in the principles of assessment

It goes without saying that in modern times an assessor does need a certain amount of training in the different aspects of assessment. In the questionnaire survey, the researcher raised the question whether formal training in assessment principles should be undertaken before a person can qualify as an assessor. In the questionnaire survey, almost 40% of the respondents felt that an assessor needs formal training in assessment while 25% felt that no training is needed. The response indicated different views, however, currently formal training in generic assessment does not form a part of the assessment policy of the College of Urologists (cf. Chapter 4, table 4.11). The Delphi panel reached consensus about this statement in Round Two and 90% of the respondents felt that it was useful, but not essential for assessors to undergo formal training in the principles of assessment (cf. Chapter 5, Table 5.2, section A).

It is important that training in assessment can be divided into two types of training (cf. Chapter 5, Appendix D5, Section A):

1. Formal training in assessment can also be called "generic" training which means the type of training that is not specific to the study field and can be of value to assessors in different study fields.
2. "Specific" training that is unique to the field of study and can be gained by experience over a period of time. This type of training does happen in most of the

Colleges of the CMSA (including the College of Urologists), because assessors are required to be observers in one or more College examinations before they will be allowed to be part of the assessment team (cf. Chapter 2, Section 2.3.4).

The researcher is of the view that some formal generic training in the principles of assessment should be a prerequisite for any assessor in postgraduate Urology. Both the respondents to the questionnaire survey and the Delphi panel were divided in their opinion on formal training in assessment. The majority of the respondents in the questionnaire, felt that it plays a role and the Delphi panel indicated that a formal training in assessment was useful, although not essential. A formal qualification in HE is not necessary, but there are courses available in assessment techniques at the most Universities, which should be made compulsory for assessors. A good example of this type of course is the SPALHE course that is presented at the University of the Free State (UFS) (Van Tonder 2006:i-vii). Several lecturers at the UFS have completed this course and although it is currently not compulsory, there is a possibility that this course may become compulsory for all assessors at the UFS (cf. Chapter 2, Section 2.3.4).

A summary about the necessary knowledge in HE is given in Figure 6.1.

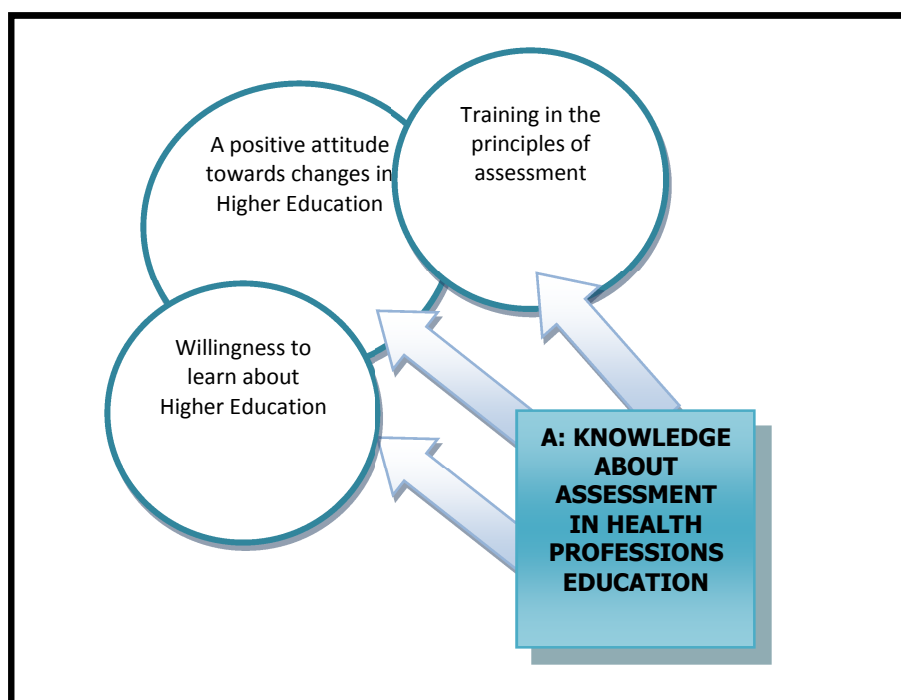


FIGURE 6.1 KNOWLEDGE ABOUT ASSESSMENT IN HIGHER EDUCATION
 [This diagrammatic presentation was compiled by the researcher, Wentzel (2012), as part of the Ph.D. research project]

6.3 THE UROLOGY ASSESSMENT POLICY

One of the important aims of the researcher is to formulate an assessment policy which will be acceptable not only to students and lecturers, but also to the Colleges of Medicine of South Africa (CMSA) which was indicated as the preferred examining body by the Health Professions Council of South Africa (HPCSA), although a contract was not formalised (cf. Chapter 2, Section 2.3.8). It is important to realise that an assessment policy is not a static piece of documentation, but should be re-evaluated after regular intervals to keep abreast of the changing environment of HE. In the following paragraphs the researcher will discuss different aspects of assessment that need to be included in the assessment policy.

6.3.1 Purpose of assessment

The three main purposes of assessment are to give the student a certification to proceed to the next stage of the curriculum (or graduation); to classify or rank the performance of students and to improve students' learning (cf. Chapter 2, Section 2.4.5.1). Assessment is more about learning than testing and should be to the benefit of both lecturer and student (cf. Chapter 2, Section 2.4.5.3). Both formative and summative assessment should form part of the assessment of the Urology registrar during their training. Several similarities exist between formative and summative assessment (cf. Chapter 2, Section 2.4.5.2). It is also true that there are differences between the two forms of assessment in that formative assessment helps the learners identify their strengths and weaknesses during the module, while summative assessment judges the learner's performance in terms of pass or fail. During formative assessment, feedback is informal and helps the learners to improve their performances while in summative assessment, feedback is formal and consists of marks and some comments (cf. Chapter 2, Section 2.4.5.2).

The researcher proposes that the following purposes of assessment should be included in the Urology assessment policy:

6.3.1.1 *The purpose of assessment is to decide if a student is ready to enter the next phase of a programme*

In the current assessment model, postgraduate Urology students must complete the FCU part 1 (Basic Medical Sciences) as well as the FCU part 2 (General Surgical

principles, Critical Care and Urological Pathology) before they can enter the FCU part 3, which is the final assessment opportunity (cf. Chapter 2, Section 2.3.8). It is important that this should be part of the Urology assessment policy and in fact this means that at the completion of both Part 1 and Part 2 of the FCU examination, a decision should be made if the student is ready to proceed to the next phase of the programme. There are certain rules regarding these two examinations that are available on the webpage of the CMSA (CMSA:Online) under the College of Urologists' documents. These regulations are updated regularly and should be included in the Urology assessment policy.

In the Delphi process, consensus was reached already in round one when 80% of the panelists indicated that the purpose of assessment is to decide on the readiness of a student to enter the next phase of a programme (cf. Chapter 5, Table 5.2, Section B).

6.3.1.2 The purpose of assessment is to certify that a specific level of performance has been achieved

There is no doubt that both formative and summative assessment are essential in student learning. In a sense they are similar because both match the performance of a student with the required performance. **However, at some point final judgment needs to be made.** According to Biggs (2003:142) the difference between the two types of assessment is "when the chef tastes the sauce it is formative, when the customer tastes it, it is summative" (cf. Chapter 2, Section 2.4.5.1).

In modern HE the use of criterion-referenced assessment is preferred to norm-referenced assessment, which is the preferred way of assessment in traditional assessment. In criterion-referenced assessment, the individual is measured against a pre-determined set of objectives that have been spelled out clearly to the student at the start of the programme. If the student meets these criteria, he/she has reached the necessary level of performance. These methods avoid the danger of matching one individual's performance against that of another (norm-referenced assessment) and not against the pre-determined objectives of the programme that were given to the student at the onset of their studies (cf. Chapter 2, Section 2.4.4.10).

In the questionnaire survey among Urologists, more than 80% of the respondents felt that assessment should be used to certify that the required level of performance has been reached by the student (cf. Chapter 4, Table 4.13). This was confirmed in the

Delphi process when consensus on this statement was reached among 90% of the panelists in Round One of the Delphi process among experts in Urology and Education (cf. Chapter 5; Table 5.2, Section C).

6.3.1.3 *Assessment can identify areas where adjustment in teaching and learning can be made before the final assessment opportunity*

To comply with the above-mentioned purpose of assessment, the teacher should use every possible opportunity for formative assessment and feedback during the whole study period of the student. The best way to describe formative assessment is to call it “day by day” assessment. As part of formative assessment, feedback is given to the learner to improve their knowledge and skills. Formative assessment is essential to support the teaching and learning process and assists the student in his/her further learning. Formative assessment helps the teacher to determine when the learner will be ready for summative assessment. Credits or certificates are not awarded during formative assessment because it is developmental (SAQA 2001:26).

Some of the advantages of formative assessment and feedback during the programme are that if the student achieves some of the outcomes, it will motivate them to work harder and this type of assessment will help both the teacher and the learner to identify areas where the learner has to work on and improve. It promotes deep learning and consolidates work done up to date, and the work done during formative assessment can be included in their portfolios and be used as part of their final (summative) assessment (cf. Chapter 2, Section 2.4.5.2). Students rated formative assessment and feedback as one of the top five purposes of assessment (cf. Chapter 2, Section 2.4.5.1).

The portfolio for Urology students was developed in 2009 and includes examples of how formative assessment in Urology registrars can be done (FCUrol(SA) portfolio:Online). Assignments given to the registrar during the training period, presentations at national or international congresses or Urology Registrar Forums and publications by registrars can also be used as formative assessment opportunities and feedback by the lecturers can assist the student in improving their performances. These documents should be included in their portfolio and can be used to decide if a student can be admitted to the final assessment opportunity at the end of their studies.

More than 90% of the respondents to the questionnaire survey felt that formative assessment can be used to identify areas where adjustments can be made in teaching and learning and might play a role or definitely should be a part of the assessment policy for registrars in Urology (cf. Chapter 2, Table 4.13). Consensus was reached in Round Three of the Delphi process when 80% of the panelists agreed that assessment during training can be used as a learning opportunity and to identify areas where students should concentrate to improve their performances (cf. Chapter 5, Table 5.2, Section B).

6.3.1.4 *The purpose of assessment is to select the best available students*

In modern HE, the trend is to judge candidates according to the outcomes that they have reached and not to compare individual learners' performances with each other. However, in the end it is important that recognition should be given to the best students in every field of Health Sciences Education. The College of Urologists do award a medal, the Lionel B. Goldschmidt medal to the student that performed the best during the final assessment.

One of the secondary purposes of assessment is grading, where student knowledge is translated into a point on an arbitrary scale. Another secondary purpose of assessment is selection: where the best available candidates are identified at the end of the assessment opportunity (cf. Chapter 2, Section 2.4.5.3).

In the Delphi process the panelists agreed in Round Two of the Delphi process that assessment should be used as an opportunity to select the best available candidates (Chapter 5, Table 5.2, Section B).

6.3.2 The mechanisms employed in learner assessment that plays a role to ensure good assessment practices

6.3.2.1 *Specified Outcomes and Assessment criteria must be available for the programme and it must be equivalent for all students*

It is vital that the outcomes and assessment criteria in the programme should be communicated to the students and should be a part of the documentation available about the specific programme (Boughey 2004 in Gravett & Geyser 2004:17). There should also be outcomes and assessment criteria available for the assessment process,

which means the student needs to know what is expected of them in the final assessment opportunity. The student must be able to demonstrate their competency in complex scenarios during the assessment. This differs from performance in day-to-day tasks like assignments (Spady 1998:128-129). Spady mentions that these outcomes must be clearly defined and learners need to know exactly what is expected of them if they are questioned about different clinical scenarios. The outcomes should also include learner responsibilities so that the students know exactly what is expected of them.

Opportunities are available where the students' knowledge about the outcomes and assessment criteria of the final assessment opportunity can be tested and where any misconceptions about the outcomes and assessment criteria can be erased. The College of Urologists has started a "mock" examination which mimics the environment of a final assessment opportunity. This "mock" examination takes place every second year during the Registrars' Forum. The format of the "mock" examination is exactly the same as the format that is used in the clinical part of the FCU (SA) final examination. The assessors in the "mock" examination are experienced assessors that have been involved in previous final examinations. However, it also is an opportunity where potential assessors can observe the experienced examiners and thus it could be a learning opportunity not only for the students but also for the would-be assessors. There are opportunities available for feedback to the students, but the researcher's opinion is that these feedback opportunities are not used to their full potential.

The researcher proposes that the "mock" examination should be included in the assessment policy of Urology and should adhere to the following principles:

- The "mock" examination should be available to ALL registrars before their final examination and therefore should take place at least once a year. That will give any registrar in their final year of training an opportunity to familiarise themselves with the environment surrounding the final examination.
- The format of the examination must be exactly the same as the format of the final examination, excluding the written part of the examination. The same methods of assessment that are used in the final examination must be used in the "mock" examination, although on a smaller scale (for instance, a paper with only 50 multiple-choice questions (MCQ) can be used in the mock examination instead of the usual 300 questions).

- Individual feedback must be given to every student. Currently, feedback is given collectively to the group of students participating in the examination, but if individual feedback can be given it will maximise the advantages of the “mock” examination.
- There should be an opportunity where students can give their feedback about the examination as well. Students can state their opinion about the outcomes of the examinations and they can explain to assessors why they did not understand questions from one or more of the assessors. Thus, it will be a learning opportunity not only for students but for the assessors as well.

In the questionnaire survey among Urologists, about half of the respondents felt that specified outcomes and assessment criteria for the assessment process are not useful in the assessment of registrars (cf. Chapter 4, Table 4.18). The researcher differs from this opinion and strongly that specified outcomes and assessment criteria are important. The experts in the Delphi process differ from the respondents in the questionnaire survey in that 80% of them reached consensus on the importance of specified outcomes in Round Two of the Delphi process (cf. Chapter 5, Table 5.2, section C). The Delphi panel felt very strongly that learner responsibilities must be available and clearly defined and 100% of the panelists reached consensus in Round Two of the Delphi process.

6.3.2.2 *The Assessment Committee (AC)*

The appointment of an Assessment Committee is a debatable proposal, but the opinion of the researcher is that such a committee is of vital importance. The role of the Assessment Committee as proposed by the researcher can be summarised as follows:

- The AC should consist of the most senior assessors in the examining panel of the College of Urologists and should consist of four members. These assessors should be the ones that are used as moderators in the final examinations and have years of experience in assessment. The AC can be appointed by the College of Urologists and they can serve a four-year period on the AC. A chairman of the AC can be appointed, from within the ranks of the AC. After four years, a new committee can be appointed but it is advisable that at least one member of the old committee should be re-elected to ensure continuity. A member of the AC should be allowed only two terms in the committee;

- The AC should play a major role in the assessment process and the methods of assessment that are used;
- The AC must be in charge of the quality assurance programme of the College of Urologists. They must be responsible for the formulation of a quality assurance policy and ensure that the moderator and assessors in every examination stick to the quality assurance policy;
- They have to develop an appeal procedure for candidates that are not satisfied with the results of their examination. The appeal procedure must have definite rules and regulations and the AC must oversee the procedure;
- The AC must appoint one of their members to be in charge of the appeal procedure during every final examination. This member must not be involved in that specific examination, neither as moderator nor as an assessor.

The respondents to the questionnaire survey were divided in their opinion about the necessity of an assessment committee. A third of the respondents felt that it definitely does play a role in fair and transparent assessment; a third felt that it might play a role and a third was not sure if it does play a role (cf. Chapter 4, Table 4.18). In the Delphi process, the panelists reached consensus in Round Two about the role of the assessment committee. Eighty percent (80%) of the panelists felt that it might be a useful, but not an essential component of the assessment policy (cf. Chapter 5, Table 5.2, Section C).

6.3.2.3 *Training of the assessors*

The researcher wants to re-iterate the previously expressed point of view that formal training in assessment should be a prerequisite for any assessor, but that a formal qualification in HE is not necessary. This point of view was discussed in more detail in Section 6.2.3 of this thesis and will not be discussed in detail again. The researcher agrees with the panelists of the Delphi process on that point; 80% of the Delphi panelists in Round Two of the Delphi process felt that a formal training in HE is useful but an extra qualification is not necessary (cf. Chapter 5, Table 5.2, Section C).

6.3.2.4 *Quality assurance of the assessment process*

In South Africa, the traditional external examination system comprises the appointment of a person external to the teaching institution to oversee the process. The functions of

the external examiner include the assurance that the questions are asked in a consistent and fair manner and reflect a certain standard to ensure that the grading of the papers is done in a consistent and fair manner.

In 2001, SAQA proposed new principles regarding moderation of examination papers when they stated that moderation should take place at two levels, namely by an internal and external moderator and that the moderation process is, in turn, verified by an internal and external verifier (cf. Chapter 2, Section 2.4.11.2).

The role of the moderator has therefore been extended and there are at least four components of moderation that are important and should be included in the assessment policy. These components are:

- The level of involvement of the moderator must be determined by the examining institution and communicated to the moderator;
- Moderators must have access to the study guide, outcomes, previous assessment opportunities and samples of assessment results;
- An appropriate documentation system should be in place which can include a database for moderators in a specific subject area; and
- Logistics like the delivery and return of the scripts to the moderator as well as financial arrangements should be in place. (cf. Chapter 2, Section 2.4.11.3).

There has to be a reporting system in place which will enable the moderator to give feedback to the assessors and the assessment authority. The moderator has to report back to the assessment authority that appointed him/her in a specific manner. The detail thereof has been spelled out clearly by the South African Qualifications Authority which requires that an appeal mechanism should be in place that will enable dissatisfied students to appeal to the assessment authority and that the moderation process should be reviewed from time to time (cf. Chapter 2, Section 2.4.11.3).

Another requirement of SAQA is that there should be a verification process in place which can verify the assessment process if necessary. Verification differs from moderation in that the person appointed as the verifier has to evaluate the whole assessment system and the processes that are in place for consistent assessment practices in the specific institution (cf. Chapter 2, Section 2.4.11.5).

In the questionnaire survey among Urologists moderation in assessment was not seen as an important part of learner assessment. About 40% of the respondents felt that it definitely plays a role to ensure appropriate assessment, while 30% felt that it might play an important role in ensuring appropriate assessment (cf. Chapter 4, Table 4.18). In the Delphi process, 100% of the panelists agreed in Round Two of the Delphi process that moderation is important to ensure that assessment is fair and that the required standard of assessment is reached while 80% of panelists felt that moderation must be done by trained moderators with specific expertise in the learning areas (cf. Chapter 5, Table 5.2, Section C).

The researcher proposes the following to ensure quality assurance in assessment:

- A moderator has to be appointed by the members of the College of Urologists for each College final examination;
- The moderator must have access to the questions included in the examination papers before commencement of the written part of the examination and must have the right to make changes in the examination papers to ensure their validity, fairness and trustworthiness;
- The moderator must have access to the answers of the questions in the examination papers of the students after assessment and should have the right to moderate the assessment results;
- An appeals policy should be in place that allows the student to appeal at the completion of the written part of the examination and before the clinical part of the examination takes place;
- The College of Urologists should also appoint a member of the AC that can act as an "appeals judge" in the event of an appeal by a dissatisfied candidate. The "appeals judge" should be a member of the AC that did not participate in that particular examination as assessor or moderator.
- The moderator must be present at the clinical and oral parts of the examination and must be able to moderate the marks if necessary;
- The moderator will have the deciding vote if a voting results in a tie;
- The moderation process has to be reviewed from time to time; and
- An external verification process must be in place to evaluate the complete assessment system from time to time, the intervals of when verification must take place have to be decided by the College of Urologists.

6.3.3 Quality assurance in assessment

6.3.3.1 *Procedures must be in place to ensure the reliability, validity and trustworthiness of the assessment process*

The above-mentioned statement almost goes without saying. Reliability is about consistency that means that the same judgements should be made in the same or different contexts while assessing the particular learning area. There are certain guidelines that assessors need to implement to ensure reliable assessment. These guidelines include that there should be no bias in terms of gender, ethnic origin and sexual orientation; if there are more than one assessor involved in the assessment process, they should be of the same standard and their marking should be consistent and because moderation of marking is an essential part of assessment, the moderation process should include double marking, sampling and cross-moderation (cf. Chapter 2, Section 2.4.6.1).

Assessment methods should assess what they set out to assess rather than what is easy to assess. SAQA has proposed certain guidelines that need to be followed to ensure the validity of an assessment process. These guidelines state that the assessors need to be clear on the specific outcomes that are assessed in the assessment process and use a reliable and appropriate source of evidence to base their assessment on. The appropriate methods of assessment for the described outcomes that are being assessed must be used at all times (cf. Chapter 2, Section 2.4.6.2).

The assessment process must also be trustworthy and therefore it is necessary to have a specific assessment policy in place. Assessors should be aware of the policy and should adhere to the rules thereof, thereby building a reputation as being a trustworthy assessment body.

All learners should be treated equally and fairly. Therefore, there should be no comparison between the work of different learners, especially if there are background differences (cf. Chapter 2, Section 2.4.6.4). It is essential that students be aware of the outcomes that are being assessed and there should be assessment criteria for every described outcome. To be fair towards learners, moderation of the assessment process is essential and appeal mechanisms should be in place if students are dissatisfied with their results (cf. Chapter 6, point 6.3.2.3). Lastly, a wide spectrum of

assessment methods should be used to broaden the field of assessment and to assess the knowledge, skills, attitudes and professional behaviour of the candidates.

In the questionnaire survey among Urologists, the reliability and trustworthiness of the assessment process were not seen as necessary for a sound assessment process, because only about a third of the respondents felt that it definitely plays a role in the quality assurance of assessment, while another 20% felt that it might play a role in the quality assurance of assessment (cf. Chapter 4, Table 4.11). The researcher is of the opinion that this should be a matter of concern in the College of Urologists and proposes that these principles of quality assurance should definitely be included in the assessment policy.

The researcher agrees with the experts in the Delphi process on this point. Consensus was reached as early as in Round One of the Delphi process when 100% of the panelists agreed that the assessment process should be reliable and valid and 90% agreed that the assessment process should be trustworthy (Chapter 5, Table 5.2, Section D). The opinion of the Delphi panelists strengthens the belief of the researcher that these quality assurance principles should be an integral part of the assessment policy.

6.3.3.2 The use of memoranda and/or scoring rubrics in the assessment process

Memoranda should serve as a standardised measure of student evaluation according to the answers on their marking sheets. A rubric consists of pre-defined performance criteria which are used to evaluate student's work during performance assessment (cf. Chapter 2, Section 2.4.7.3). The guidelines on how scoring rubrics should be used are summarised in Chapter 2 (cf. Chapter 2, Section 2.4.7.2).

This matter, regarding the use of memoranda and rubrics, has been a controversial and well-discussed one in the meetings of the College of Urologists. There are proponents for the use of memoranda and there are other members that are totally against the use thereof. It is a fact that it is more difficult to write a memorandum for an essay type of question than to compile the memorandum for multiple-choice questions (MCQ). An essay is a more subjective form of assessment and it is therefore extremely difficult to write a memorandum for an essay question that contains every

possible fact about the asked question. Because it tests the “depth” of learning and the writing skills of the student, it is almost impossible to compile a concise and fully inclusive memorandum for this form of assessment. On the contrary, it is quite easy to write a memorandum for MCQ’s because there is only one right answer. Other modern assessment methods like the Mini Clinical Evaluation Exercise (Mini-CEX) and the Direct Observation of Procedural Skills (DOPS) use a marking sheet which makes it easy to mark and serves as a memorandum as well.

To develop a scoring rubric for every domain that needs to be assessed in the assessment of a Urology registrar will be an exhaustive process. In the past, a similar form of assessment was used in the College of Urologists that entailed the use of symbols instead of marks that were awarded to a student during the assessment process. A candidate that passed the examination received, for example, an S when they passed and an F when they failed. An S- meant that the candidate just managed to pass and if more than one examiner gave an S- the symbol was changed to an F. However, this system was abandoned in favour of a system where marks are awarded as percentages and the candidate’s final mark is calculated as the average of the percentages given by the examiners.

In the questionnaire among Urologists, only 20% of respondents indicated that they would definitely use a memorandum while another almost 30% indicated that they would consider using it (cf. Chapter 4, Table 4.20). These figures are a good reflection of the current situation in the College of Urologists where the use of a memorandum is not compulsory. In the questionnaire, only 15% of the respondents were ardent supporters of the scoring rubric, but another almost 50% indicated that they will consider the use thereof (cf. Chapter 4, Table 4.20). These figures support the view of the researcher that the development of a scoring rubric requires time, work and organisation. However, the researcher proposes that the use of scoring rubrics should be investigated by the College of Urologists.

In the Delphi process panelists could not reach consensus on the matter if memoranda should be used in the assessment process. Stability was declared when 40% of the panelists felt it was an essential part of assessment and 60% felt that it was useful in assessment (cf. Chapter 5, Table 5.2, Section D). The panelists did agree that scoring rubrics should be used in assessment in Round Three of the Delphi process when 80%

of the panelists felt it was an essential part of assessment (cf. Chapter 5, Table 5.2, Section D).

The researcher proposes the following recommendations:

- A memorandum should be available for every question in the written part of the examination;
- The memorandum must be made available to the moderator during the moderation process;
- The memorandum must also be made available when an appeal process is requested by one or more dissatisfied students; and
- The use of a scoring rubric should be explored by the College of Urologists. To define all the levels of achievement for every aspect of the assessment process will take a lot of time and effort to compile. The researcher is of the opinion that the use thereof will not only be helpful in summative assessment, but even more so in formative assessment where specific feedback can be given to a student on what they should do to achieve the specific competency that they were assessed on. All these measures are put in place to ensure the quality of the assessment process.

6.3.4 Assessment of different levels of performance

In 1956 Bloom developed the "Hierarchy of Cognitive Demand" which is better known as Bloom's taxonomy. Until today, this pyramid plays an important role in the design and marking of different assessment methods. It is important that questions that test different cognitive levels of assessment should be included in the assessment process (cf. Chapter 2, Section 2.4.3).

The original Bloom's taxonomy was revised by a team of psychologists under the leadership of a former student of Bloom, Lorin Anderson. This leads to a number of improvements that simplified the assessment of the different cognitive levels of performance (cf. Chapter 2, Section 2.4.3). It is impossible to test the different cognitive levels of performance if a single method of assessment is used. For instance, if one uses only essay questions one will test understanding, synthesis and evaluation skills of the candidate, but his/her ability to analyse certain situations as well as his/her ability to apply knowledge is not tested (cf. Chapter 2, Section 2.4.9.2). On the other hand, if multiple-choice questions are used, a wide variety of skills including

understanding, analysis, problem-solving and evaluation are tested, but the application of their knowledge is not tested (cf. Chapter 2, Section 2.4.9.5). In MCQ's the practical skills, attitudes and values cannot be tested, these aspects of their knowledge can be tested during their long and/or short clinical cases and the oral examination. The methods of assessment that the researcher proposes will be discussed at a later stage in this chapter, but at this stage it is already clear that a combination of assessment methods is absolutely essential if all cognitive levels of performance as well as practical skills, attitudes and values are to be assessed.

An alternative form of taxonomy called the SOLO (Structure of the Observed Learning Outcomes) may be used to analyse student's learning tasks, to decide if objectives have been reached and to assess students' work. Biggs used terms like pre-structural; uni-structural and multi-structural to describe what percentage of the objectives have been reached by the student (cf. Chapter 2, Section 2.4.3).

In the questionnaire among Urologists more than 80% of the respondents felt that the assessment of the different cognitive levels of performance might play a role in assessment or definitely plays a role in assessment (cf. Chapter 4, Table 4.22 & 4.23). The respondents also felt that a wide range of assessment methods should be used to be able to test the different cognitive levels of performance. Seventy-five percent (75%) of the respondents agreed that a wide range of assessment methods is necessary to test the different levels of Bloom's taxonomy (cf. Chapter 4, Table 4.22 & 4.23).

The panelists in the Delphi process reached consensus as early as in Round One of the Delphi process that the different levels of knowledge and skills assessment need to be included in the assessment model (cf. Chapter 5, Table 5.2, Section F). The panelists did not feel as strongly as the researcher does about the use of a variety of assessment methods during the assessment process; however 80% of the panelists agreed in Round Two of the Delphi process that a variety of assessment methods is useful, although not essential as part of the assessment model (cf. Chapter 5, Table 5.2, Section F).

6.3.5 The role of feedback in assessment

Constructive feedback has many purposes, but perhaps the most important advantages of feedback are that students will know where they are in comparison to where they should be; it will serve as motivation and it will identify the areas where they can improve (cf. Chapter 2, Section 2.4.10.1).

According to the Higher Education Academy, certain principles can be followed by assessors to ensure effective feedback. Feedback facilitates the development of self-assessment in learning. Several authors argue that self-assessment is a prominent feature of feedback. Self-assessment can be used by students to identify the strengths and weaknesses in their work and could be included in their portfolio. Feedback promotes peer and tutor dialogue around learning. Feedback is a two-way process and should stimulate a response from the student and dialogue between students, teachers and peers. Feedback helps to clarify what good performance is, because by receiving feedback, students will understand what their tutor's concept of good outcomes is and whether they can adjust their concept accordingly. It provides the opportunity to close the gap between current and desired performance. Students and tutors need to write down some "action points" that would identify what they can do to improve their performance next time. Feedback delivers high quality information to students about their learning. Strategies that could increase the quality of feedback include that the feedback provided should be in line with pre-defined criteria, it must be given soon after the submission of a project; it must prioritise areas of possible improvement and supply advice on how to improve and should be limited and accessible to students at all times (cf. Chapter 2, Section 2.4.10.1).

In the postgraduate student in Urology, the role of feedback cannot be overestimated. The following types of feedback should DEFINITELY be included in the assessment model for registrars in Urology:

1. **Formative feedback:** Formative feedback always formed part of the training of the Urology registrar. This form of feedback takes place during academic ward rounds; radiology and pathology discussions and even in theatre during operations. This type of feedback provides guidance and motivation while the student is busy with the programme. Another huge advantage is that it does provide opportunities for dialogue between the student and his/her tutor. During

these opportunities the student can learn from their tutor about gaps in their knowledge and where they can improve their skills to reach the desired level of competence. On the other hand, the tutor gets an opportunity to obtain information from their students on aspects like where they can improve the programme or shape the learning of their students.

2. In the Portfolio for registrars in Urology, two formal opportunities have been created which can assist both the tutor and the student with the process of formative assessment. Firstly, the Portfolio requires 6 monthly interviews with the Head of the Urology department of the student's university where the progress of the training of the registrar is monitored and his/her level of competence in different domains of training is compared to the desired outcomes (CMSA 2009:Online). The aim of these interviews is to help the student to identify where his/her progress shows a deficiency. However, if they have reached the required outcome in a specific domain, the tutor needs to tell them that the required level of competence has been reached. This will help students monitor their own progress and motivate them to work harder at the areas where they need to improve. However, for this strategy to be successful, it will need dedication and cooperation from the Heads of all departments of Urology countrywide.
3. The registrar also has to include a progress report from the consultant in charge of a specific learning area at the completion of their rotation. In the department of Urology at the UFS, the registrars rotate through different disciplines in Urology, for instance urologic oncology, paediatric urology and female urology to mention but a few. These sub disciplines of Urology are headed by different consultants and these consultants have to complete a progress report on the performance of a registrar in their sub discipline after an interview with the registrar on completion of their rotation (CMSA 2009:Online). This provides brilliant opportunities for feedback, but the cooperation of every consultant in all the Urology departments is necessary to make this type of formative assessment successful.
4. Ipsative feedback: This type of feedback means that students are assessed against their own previous performance. This gives information to the student about their progression/improvement. In the Portfolio for Urology registrars, the registrars have to prepare a list of their goals for the specific rotation. At the end of that rotation, they need to honestly judge their own performance against the goal that they have set themselves at the start of the rotation (CMSA 2009:Online). This is a sort of self-assessment, but also provide an opportunity for the registrar to monitor their progress and to motivate them to work even harder in

future. Again, the success of ipsative feedback depends on the honesty and cooperation of the registrars.

5. **Summative feedback:** This type of feedback is given after the final evaluation and provides information about the outcomes of the examination. In the College of Urologists, as in most other Colleges in the CMSA, this type of feedback is most problematic. The final evaluation in the College of Urologists is an exhaustive and cumbersome process that includes an Objective Structured Clinical Examination (OSCE); several short clinical cases and at least three oral examinations. In a small College like Urology, there are never more than ten candidates for the final evaluation. Therefore, the whole examination can be completed in one day. In the bigger Colleges like General Surgery, the examination can last two or even more days. The problem that arises is when to schedule the summative feedback session. At the end of a long day, neither the assessors nor the students are willing to indulge in a feedback session, especially not the successful candidates who want to celebrate their success. The process can also not be postponed to the following day, because the students and the assessors come from different parts of the country for the examination and they all have to go back to work as soon as possible.

The researcher was unable to find a solution for this problem, even with the help of the questionnaire survey and the Delphi process. The researcher however acknowledges that this is a serious problem that needs to be addressed, especially for the unsuccessful candidates who want to know where they failed to reach the outcomes. The view of the researcher is that a meeting should be scheduled for summative feedback as soon as possible after the final assessment opportunity. This session can be scheduled for the morning after the examination. At least the moderator and the convener of the examination have to be present at this meeting. One-on-one feedback has to be given by the assessors to the candidates that were unsuccessful in the examination as well as the others that require more information about their performance. This will cause some logistical problems, but the researcher urges the College of Urologists to investigate this problem and try to reach an acceptable solution for both the students and the assessors.

In the questionnaire survey among Urologists there was extensive variation among the respondents on the value of feedback. Between 60% and 70% of the respondents felt that the assessment results should be analysed properly and interpreted in the correct

fashion (cf. Chapter 4, Table 4.26 and 4.27). The respondents did not feel that feedback should be given within a short period of time after the assessment; this might be because of the difficult situation to schedule a feedback session after the final summative assessment as described in the previous paragraph (cf. Chapter 4, Table 4.26 and 4.27). When asked about the use of a variety of feedback methods even during formative assessment, only 8% of the respondents felt that it was important to use a variety of feedback methods after assessment (cf. Chapter 4, Table 4.26 and 4.27).

In the Delphi process, panelists reached consensus about the interpretation and analysis of the assessment results in Round One and Round Two respectively (cf. Chapter 5, Table 5.2, Section G). The opinion of the panelists was that the feedback should be given in a timely matter (consensus of 90% of the respondents in Round One of the Delphi process) and they felt that of a variety of feedback methods is useful, but not essential for constructive feedback when consensus was reached by 80% of the respondents in Round One of the Delphi process (cf. Chapter 5, Table 5.2, Section G).

6.3.6 Types of assessment that should be used to assess Urology registrars

The different forms of assessment that could be used in modern Higher Education were discussed in detail in Chapter 2 of the thesis (cf. Chapter 2, Section 2.4.4). After thorough review of the different methods, it is clear that different types of assessment will be suitable to different study fields. The researcher investigated all the possible methods, with the help of a questionnaire survey among Urologists and a Four-Round Delphi process amongst experts in Education and Urology. The proposal of the researcher is that different types of assessment should be utilised in assessment of the postgraduate student in Urology. The different types of assessment as proposed by the researcher will be discussed in the next few paragraphs.

6.3.6.1 *Diagnostic assessment*

This type of assessment determines a learner's strengths and weaknesses as well as prior knowledge. By doing this the assessor is able to assess if a learner has the potential to be admitted to a particular programme. This assessment method can also assist in the development of modules and programmes.

This type of assessment is essential during the selection process when students are interviewed to be included into a Urology programme. The different Medical Schools all have different requirements for admission of a student as a registrar. The candidate with the most previous experience in the field of study will always have an advantage. It is important that the interviewers assess the potential of each and every candidate to make a success of the field of study they have chosen. This is important not only for the department that conducts the interviews, but also for the individual that is interviewed. If the panel members have strong reservations about a particular candidate's potential to make a success in that particular field of study, they should be honest with the candidate. This might persuade the candidate to change their plans and explore other fields of study, thereby not wasting their time in a field of study where they are bound to fail.

This form of assessment further serves as a baseline to compare their progress at a later stage in their studies as part of the formative assessment process. In the questionnaire survey among Urologists, about 50% of the respondents felt that diagnostic assessment is important or very important in the assessment of postgraduate students in Urology (cf. Chapter 2, Table 4.28 & 4.29). This seems like a very low figure, but only about 40% of the respondents were involved in the selection process of new registrars where the use of diagnostic assessment is most important (cf. Chapter 2, Table 4.9). In the Delphi process the panelists reached consensus in Round One of the Delphi process when 80% of the panelists agreed that diagnostic assessment is essential in the assessment of registrars in Urology (cf. Chapter 5, Table 5.2, Section H).

6.3.6.2 *Formative assessment*

Again, the definition of formative assessment is assessment done in order to intervene with the intent to improve. Students' attitudes, skills and knowledge should be monitored throughout the training period. Feedback should be given and this type of assessment is used as a tool to improve the performance of the learner during their final assessment (cf. Chapter 2, Section 2.4.4.1). The advantages of this type of assessment for students and lecturers, have been summarised in Chapter 2 (cf. Chapter 2, Section 2.4.4.1).

The best way to describe this type of assessment is the "day by day" assessment. As part of the assessment, feedback is given to the learner to improve their knowledge

and skills. Formative assessment is essential to support the teaching and learning process and assists the student in his/her further learning. Formative assessment helps the teacher to determine when the learner will be ready for summative assessment (cf. Chapter 2, Section 2.4.5.2).

The CMSA has identified the importance of formative assessment and therefore has ordered all the Colleges associated with the CMSA to implement the use of the portfolio, which will be a compulsory element of the final assessment opportunity for all students that complete their studies in 2013 and thereafter. The portfolio of the College of Urologists provide an opportunity for the implementation of formative assessment through the inclusion of information such as the reports by the Head of every unit where the registrar has done a rotation as well as a biannual progress report by the Head of the Department (CMSA 2009:Online).

There are different possible methods that can be used as part of formative assessment. The forms of formative assessment that the researcher proposes will be discussed in the next few paragraphs.

Portfolio

A portfolio contains a collection of assignments as well as reflection on critical incidents. Other information, like peer-assessment questionnaires, reports by co-workers (test attitudes and ability to work in a team), as well as reports of different supervisors, can be included. It requires a high level of trust between assessor and student (cf. Chapter 2, Section 2.4.9.8). The portfolio can include documents like job reports, articles written on scientific subjects important in the field of study, certificates awarded to the student, proof of seminars and congresses attended and letters of review from peers (cf. Chapter 2, Section 2.4.9.8). The characteristics, advantages and disadvantages of portfolios are discussed in detail in Chapter 2 of the thesis (cf. Chapter 2, Section 2.4.9.8).

The College of Urologists has decided at the meeting of the academic committee in May 2010 in Bloemfontein that the portfolio should be submitted to the convener of the examination as from the first FCU (SA) examination in 2013 (College of Urologists 2010: 6-8). The portfolios of the candidates that want to participate must be submitted at least three (3) months before the date of the final assessment opportunity and it will be evaluated by the appointed convener for the specific examination. The appointed

moderator also has to see a sample of the submitted portfolios. The candidate(s) with inadequate portfolios will not be admitted into the final examination.

Logbooks/diaries

This method needs to be structured formally and requires a high level of trust between assessors and students and is time consuming for students (cf. Chapter 2, Section 2.4.9.3). Logbooks give a student the chance to record, express and examine their experience in their field of medical education (cf. Chapter 2, Section 2.4.9.3). Another advantage of the logbook is that it gives the teacher the opportunity to monitor the progress of their student and to give feedback in an organised manner. It can also be used as part of summative assessment to enable assessors to judge the experience and skills that the student has obtained through their training (cf. Chapter 2, Section 2.4.9.3).

The logbook is an integral part of the portfolio for registrars in Urology. The registrars are required to log all the operations which they observe, assist at or perform themselves. The Head of the unit where they do their rotations must countersign the logged procedures to ensure the reliability and validity of the process. There are also a prescribed list of the different operations that the registrar needs to be able to perform and a minimum number which they need to do during their training (CMSA 2009: Online). These logbooks must be reviewed by the Head of the Department in the bi-annual interview with the registrars. This is an excellent method of formative assessment because the Head of the Department can use the opportunity to monitor the progress of the student and highlight the areas on which the student should concentrate.

Assignments/Presentations

Assignments are used very frequently as part of the academic program of most departments. Registrars are asked to prepare and present an assignment about a controversial subject at an academic meeting attended by all consultants and registrars in the department. The consultants are asked to assess the assignment according to certain pre-defined criteria prepared by the department. An average mark for the assignment is worked out and the assignment with the mark can be included in the registrar's portfolio. After the presentation, the consultants will give feedback on the

quality of the assessment, the students' knowledge about the discussed subjects and their writing and communication skills.

Presentations that are presented at conferences, symposia and registrar forums can also be used as formative assessment. This method is valuable to test communication skills and the ability to perform in front of an audience. The student's ability to respond to questions and manage discussion can be tested as well (cf. Chapter 2, Section 2.4.9.9). The discussion that takes place after the presentation will include feedback about some of the aspects of the presentation. This is an excellent form of formative assessment and the student gets a chance to measure himself/herself against consultants and registrars from other academic departments of Urology.

"Mock" Examinations

These examinations, which include all the methods of assessment used in the FCU (SA) final examination excluding the written part, are currently held every two years as part of the Registrars' Forum. The "mock" examination and the proposals of the researcher regarding the "mock" examination have been discussed earlier in this chapter (cf. Chapter 6, Section 6.3.2.1). The "mock" examination provides another excellent opportunity for formative assessment, but it is not utilised to its full potential at the moment. The researcher proposes a formal feedback session at the completion of the "mock" examination where all the assessors involved in the "mock" examination must be present. The marks of every participating registrar are given to the Heads of Department of the participating registrars but an analysis of each individual student's marks and an indication of the student's strong and weak points will be much more valuable.

Publications

Students are encouraged to publish their research during their training. All publications are peer-reviewed and provide an excellent opportunity to measure themselves against national (and sometimes international) standards.

Other forms of formative assessment

There are many other informal ways of formative assessment where the consultants responsible for training of the registrar can form an idea about the competencies and

weaknesses of their registrars. These include ward rounds, x-ray discussions and interdepartmental discussions. The teacher can also use the opportunity to give some feedback on the performance of their students and highlight the areas that the student should concentrate on. In certain departments of Urology, for example the department at Tygerberg, University of Stellenbosch, senior students receive dedicated training in the technique of the final examination by senior consultants during their final year of training. This is an excellent way of formative assessment and helps the student identify the problem areas in their armamentarium. It helps to “acclimatise” the student to the scenario of a real examination and these students give the impression that they are more relaxed than others during the examination.

Conclusive remarks on formative assessment

In summary, the researcher is of the opinion that formative assessment should be an integral part of registrar assessment. The process should be formalised by the College of Urologists and included in the assessment policy. This opinion was shared by the urologists participating in the questionnaire survey because almost 90% of them felt that formative assessment is important and should be included in the assessment model (cf. Chapter 2, Table 4.28 & 4.29). In the Delphi process the feeling was slightly different because the panelists reached consensus in Round Two of the Delphi process when 80% of the panelists agreed that formative assessment is useful but not essential for the assessment of postgraduate students in Urology (cf. Chapter 5, Table 5.2, Section H).

The researcher’s opinion is that formative assessment is absolutely essential in HSE. Continuous assessment and feedback will help the registrar in the identification of their problem areas and motivate them if improvement is shown according to their assessors. This form of assessment can be done very frequently in HSE and especially in the surgical disciplines because every operation performed by the registrar can be seen as a formative assessment opportunity and feedback can be given immediately. In the researcher’s view formative assessment is ideally suited to HSE.

6.3.6.3 *Summative assessment*

As was pointed out earlier, this type of assessment takes place at the end of a training period. It gives an indication if the learners have acquired the predetermined minimum outcomes that are necessary to achieve the qualification (cf. Chapter 2,

Section 2.4.4.2). According to SAQA, "Summative assessment is assessment for making a judgment about achievement. This is carried out when a learner is ready to be assessed at the end of a programme of learning" (SAQA 2001:26).

The three main purposes of assessment are to give a license to proceed to the next stage (or graduation), to classify or rank the performance of students and to improve students' learning (cf. Chapter 2, Section 2.4.5.1).

The researcher is of the opinion that the three purposes of assessment as defined by Brown (2001:Online) actually summarise summative assessment. Summative assessment is an integral part of the final hurdle that needs to be cleared before a registrar can receive their qualification. The format of the summative assessment for postgraduate students in Urology as proposed by the researcher will be discussed in detail later in this chapter.

In the questionnaire survey among Urologists, 100% of the respondents' were of the opinion that summative assessment plays a role in the assessment model for registrars in Urology, but only 75% felt that it should be included in the assessment model (cf. Chapter 2, Table 4.28 & 4.29). In the Delphi process, consensus was reached in Round One when 80% of the panelists agreed that summative assessment is an essential part of the assessment model (cf. Chapter 5, Table 5.2., section H).

The researcher agrees with the panelists of the Delphi panel and feels strongly that summative assessment should be an important part of the assessment process. However, it is also important to realise that the statement: "The final exam is THE BIG assessment opportunity" (Le Roux 2004:58-62) is a misconception and the summative assessment is just one of the assessment opportunities during the training of the postgraduate student in Urology.

6.3.6.4 *Authentic assessment*

Authentic assessment is about the assessment of complex performances in real life situations. In this type of assessment, not only foundational competence, but also practical knowledge is assessed (cf. Chapter 2, Section 2.4.4.5).

It is not difficult to include authentic assessment methods during both the formative and summative assessment of postgraduate students in Urology. Clinical cases are part

of the final assessment of postgraduate students in Urology. This is a “real life” scenario and contextualised assessment including diagnosis of the condition and proposals to solve the clinical problem of the patient is expected of the student. Both the respondents to the questionnaire survey and the Delphi panel felt that clinical cases should be included in the assessment model. This will be discussed in more detail in the section on clinical cases, Section 6.4.3.2. Authentic assessment is, therefore, included as part of the assessment model for registrars in Urology.

Authentic assessment during the clinical case examinations currently forms part of the assessment of postgraduate students in Urology. The response of the Urologists in the questionnaire survey was quite remarkable because only 50% of the respondents felt that authentic assessment should be included in the assessment model. The question arises: did the other 50% of the respondents feel that clinical cases (which IS authentic assessment) should be excluded from the assessment model or did the respondents not understand what was meant by authentic assessment (cf. Chapter 2, Table 4.28, 4.29)? No comments were added by the respondents in the space provided and the question therefore remains unanswered. It is, however, of consequence that the older Urologists (according to the demographic data, cf. Chapter 4, Section 4.2.1) were more in favour of authentic assessment than the younger respondents. If we assume that the older Urologists can be regarded as the ones with more experience, it is fair to say that with experience comes the realisation of the importance of authentic assessment.

In the Delphi process, the panelists reached consensus in Round Two when 80% agreed that authentic assessment should form part of the assessment process (cf. Chapter 5, Table 5.2, Section H). The researcher has a strong belief in the value of clinical cases as an assessment method and therefore includes authentic assessment as a part of the proposed assessment model.

6.3.6.5 *Performance assessment*

The easiest way to explain performance assessment is to define it as an assessment method where the teacher must make a judgment about a student’s demonstration of skill or competency to perform a certain task (cf. Chapter 2, Section 2.4.4.9). The term performance assessment is a synonym for *performance-based assessment* or *performance and product*. Performance assessment can sometimes be confused with

terms like authentic assessment or alternative assessment but in actual fact performance assessment may or may not be authentic (cf. Chapter 2, Section 2.4.4.9).

During performance assessment, different levels of clinical skills can be assessed and it is therefore an excellent assessment strategy in Health Sciences Education (cf. Chapter 2, Section 2.4.4.9). The Objective Structured Clinical Examination (OSCE), is an example of a performance assessment method that can assess several clinical and other skills in a performance-based scenario (cf. Chapter 2, Section 2.4.4.9).

The research project or otherwise called the dissertation makes out an important part of the final assessment of the Urology registrar and the successful completion of the research project is compulsory before the FCU (SA) degree is awarded to the student, irrespective of whether the student passed the final examination or not (College of Urologists 2010:8). The research project is currently included as part of the assessment in the MMed (Urology) final examination. The criteria for the research project (as part of the MMed degree) are pre-defined and may differ from one University to the other, but may be some of the following (cf. Chapter 2, Section 2.3.8):

- A standard research protocol with primary and secondary research objectives, materials and methods, the results and the statistical analysis thereof and a discussion of the results in context of the available literature;
- Publication of an approved research article(s) in an accredited national or international publication (certain pre-defined criteria are laid down and the research article must comply with this);
- The student can identify a certain controversial subject in their field of study (for example "The role of Active Surveillance in the Treatment of Low Risk Prostate Cancer") and write a meta-analysis about the subject after in depth study of the available literature; or
- A case report accompanied by a review of the literature about the condition that was described in the case report.

At the moment there are no criteria available for the format of the dissertation in the FCU (SA) examination. The researcher will make some proposals regarding the format of the dissertation later in this chapter.

The research project or dissertation is an invaluable part of the final assessment of any student that completes a Magister degree and therefore should not be neglected. The dissertation is the student's opportunity to prove the depth of their knowledge about their field of study, and even more importantly, their chance to contribute towards the available literature in their field of study. The opinion of the researcher is that the dissertation is very important for the postgraduate student in Urology, not only for his/her academic development, but also to improve the academic stature of their university and Urology as a surgical discipline.

Performance assessment is the type of assessment that is ideally suited for the assessment of a dissertation and should therefore be included in the assessment policy. Performance assessment is about the creation, production or construction of something by the students and it involves sustained work which can last for days or weeks (cf. Chapter 2, Section 2.4.4.9). The advantages and disadvantages of performance assessment are summarised in Chapter 2 (cf. Chapter 2, Section 2.4.4.9).

In the questionnaire survey, the respondents agreed that performance-based assessment is important in Urology; moreover, almost 90% of the respondents felt that this form of assessment should be included in the assessment model (cf. Chapter 4, Table 4.28 & 4.29). The members of the Delphi panel reached consensus in Round One about the extreme importance of performance assessment as part of the assessment model when 80% agreed that it was an essential part of the assessment model (cf. Chapter 5, Table 5.2, section H).

The dissertation is one of the aspects that should be completed before any Magister degree can be awarded and the way to assess a dissertation is to make use of performance-based assessment. This form of assessment is therefore included by the researcher as part of the assessment model for registrars in Urology.

6.3.7 Summative discussion on the assessment policy

In Section 6.3 the researcher discussed the proposed assessment policy for registrars in Urology. The characteristics that the researcher believes should be included as part of the assessment policy has been discussed and the researcher have provided the reasons for their inclusion in the assessment policy. In the next section, Section 6.4, the researcher will discuss the proposed methods of assessment that should be used in the assessment model to make the model fair, reliable and trustworthy.

The proposed assessment policy for Urology is summarised in Figure 6.2

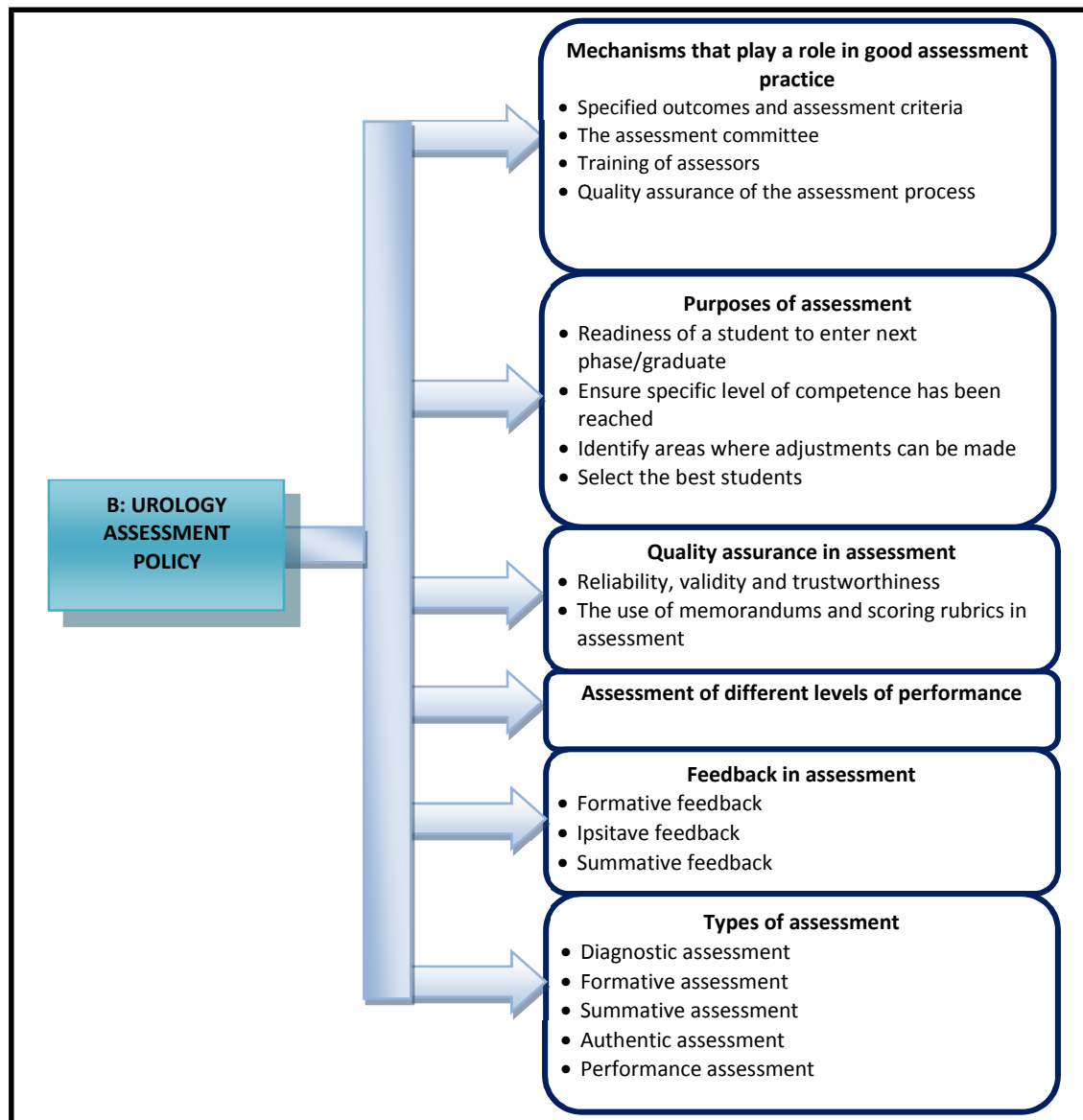


FIGURE 6.2 UROLOGY ASSESSMENT POLICY

[This diagrammatic presentation was compiled by the researcher, Wentzel (2012), as part of the Ph.D. research project].

6.4 THE ASSESSMENT METHODS

The proposed methods for assessment will be discussed in four parts as follows:

- 6.4.1 Assessment methods in formative assessment
- 6.4.2 Assessment methods in the written part of the final (summative) assessment
- 6.4.3 Assessment methods in the clinical part of the final (summative) assessment
- 6.4.4 The assessment of the dissertation.

The final summative assessment of the postgraduate student in Urology takes place at the end of their formal rotation. According to the regulations of the College of Urologists, the final examination can be taken after 3½ years in a registrar post of which 2½ years should be in Urology. The HPCSA requires that the student can register as Urologist after 4 years in a registrar post provided that he/she has obtained a specialist qualification. The assessment consists of a written part which takes place twice a year during the months of March and August. After the different assessors have completed the marking of the written papers, the marks are sent to the convener of the specific examination. The convener works out the average mark of all the candidates and decides in conjunction with the moderator of the specific examination which students will be invited to participate in the clinical part of the examination.

The invited candidates will take part in the clinical part of the examination, which takes place twice a year during the months of May and October. The clinical part of the examination currently consists out of an Objective Structured Clinical Evaluation (OSCE), short clinical cases and an oral examination. There are six assessors involved in the examination which includes the convener. The moderator oversees the whole assessment process and has to sit in with all the assessors at different times during the examination. Every part of the assessment contributes a certain percentage towards the final assessment mark.

6.4.1 Assessment methods in formative assessment

The researcher's opinion about the importance of formative assessment has been discussed in detail in the previous section (cf. Chapter 6, section 6.3.6.2). It is essential to realise that formative and summative assessment are part of a continuum and should be used simultaneously during the assessment of postgraduate students in Urology. The two forms of assessment are similar in many respects; for instance, both forms of assessment collect evidence of learner competence; enhance deep learning; require feedback (although the type of feedback differs from one assessment to the other) and both can assist in the improvement of learning and the development of programmes (cf. Chapter 2, section 2.4.5.2).

The two forms of assessment differ from each other in many respects as well. Formative assessment helps the learner identify strengths and weaknesses during the module, while summative assessment judges the learner's performance in terms of

pass or fail. In formative assessment, feedback is informal and helps learners to improve their performances, while in summative assessment feedback is formal and provides their marks and some feedback regarding the summative assessment (cf. Chapter 2, section 2.4.5.2). The moral of the story is that there is a place for both types of assessment, and both forms of assessment should be used in the assessment of the postgraduate student in Urology.

In the following paragraphs the proposals of the researcher regarding the instruments that should be used in formative assessment will be discussed. The value of some of the instruments has been discussed in Chapter 6, Section 6.3.5.2 and will not be discussed in detail in this section again.

6.4.1.1 *Portfolio*

One of the advantages of the portfolio is that it provides evidence of competence in a written format, which also demonstrates competence over an extended period of time (Chapter 2, Section 2.4.9.8). This summarises the value of the portfolio as an assessment instrument in HSE. The training of a postgraduate student in Urology, as in most other surgical disciplines, extends over a minimum period of four years. The value of the portfolio is that it gives an overview of the progress of the candidate over the whole four year period and ensures that the candidate is not only judged on his/her performance in the final summative assessment opportunity. The portfolio includes the results of the primary and intermediate examination that the student has to pass before he/she can sit for the final examination.

The content of the portfolio differs from one discipline to another, which makes it a unique piece of documentation. The quality of the portfolio also differs according to the amount of work a specific registrar has put into the compilation of the portfolio. The assessor can get a good idea of the organisational skills and work ethics of the registrar while assessing the portfolio. An important and essential part of the portfolio is the reflection on critical incidents. An example of a critical incident is an operation during which complications develop.

Critical reflection on what could have been done to prevent the complication as well as an analysis on the management of the complication and whether the complication was managed correctly is an important method of formative assessment. Evaluation of

these reflections on critical incidents gives a good indication of the development of the registrar.

The portfolio has to be submitted to the convener of the examination which the candidate wants to enter well in advance of the date of the examination. In the College of Urologists the candidate has to submit their portfolio three months before the date on which the examination takes place (College of Urologists 2010:8). The review of the portfolio by the convener of the examination that the candidate wants to enter is critical and the last hurdle that the candidate has to cross before admission into the final examination. The convener with the help of the moderator must have the power to stop a candidate from entering the examination if they feel that the candidate needs more training and/or surgical experience.

The portfolio of the College of Urologists was developed in 2008 because the CMSA required that all their member colleges had to submit a portfolio (Appendix A). Different forms of formative assessment and feedback on formative assessment have been included in the portfolio (cf. Chapter 6, Section 6.3.5). The portfolio has been accepted as an integral part of the final assessment opportunity by the College of Urologists. However the dedication and cooperation of the Heads of all the Departments of Urology are critical in the success of the portfolio in the postgraduate students in Urology. The development of the portfolio for the College of Urologists forms part of this research project and is therefore one of the formative assessment methods that the researcher wants to include in the assessment model.

6.4.1.2 *Logbook*

The value of the logbook as an instrument to use during formative assessment has been discussed in detail in Section 6.3.5.2. The logbook forms an integral part of the portfolio for registrars in Urology and gives an indication of the surgical skills that the registrar has accumulated during their training. As mentioned before, the portfolio also includes a prescribed list of the type of surgical experience that is required before a candidate can sit for the final examination. The Head of the department where the student did his/her training has to sign off the logbook, thereby indicating that he/she is satisfied with the amount of surgical experience the registrar has gained during the four years of training.

The logbook, as part of the portfolio of the Urology registrar, is reviewed by the convener of the examination to which the registrar has entered. The convener with the help of the moderator appointed for the specific examination must have the right to decide if the candidate can be allowed to participate in the final examination. This will depend on whether the convener and/or the moderator are satisfied that the registrar has gained enough experience (including surgical experience) to be allowed to participate in the final examination.

The problem with the logbook is that the dedication and cooperation of the consultants in the different Urology departments are needed to make the logbook a successful formative assessment tool. The convener and moderator of every final examination also need to abide by the rules applicable to the logbook, including the rule that a postgraduate student in Urology can be excluded from the examination if they did not acquire enough surgical experience during their four-year training period. The researcher therefore proposes that the logbook must be included in the assessment model as a formative assessment tool and that the rules applicable to the logbook must be followed by the conveners and moderators in the examination.

6.4.1.3 *Presentations*

As part of their academic training, registrars do have to prepare presentations or assignments and present these during the academic programme of the department. As mentioned before, the researcher wants to propose that these assignments should be assessed by the consultants and/or other registrars in their department. An average mark can be given and the assignment can be included in the registrar's portfolio. This is an example of the so called "day by day" assessment (Chapter 2, Section 2.4.5.2) and can be used by the convener to decide if the registrar is ready for the final assessment.

6.4.1.4 *Presentations at Forums and Congresses*

The South African Urological Association (SAUA) organises a Urology congress every second year. In the years between congresses, the SAUA organises a Registrars' forum where registrars get the opportunity to present their assignments and research projects. At both these meetings, adjudication panels are appointed that assess the registrars' presentations in order to identify the best projects and assignments. These

panels consist of consultants of the different academic Urology departments countrywide.

The researcher proposes the following regarding registrars' participation in the Urology congress and Registrars' forum:

- Registrars have to present at least one research project at the biennial Urology congress and one presentation at the Registrars' Forum during their four year training period;
- The adjudication panel must give a mark to every one of the presentations/projects presented by a registrar even if the presentation/project will not be considered as one of the top presentations/projects at the congress/forum. The mark earned by the registrar can be included with a copy of their presentation/project in the registrar's portfolio.

The work of the registrar at the forums and congresses can thus be used during the assessment of their portfolios and add value to their academic profile. Registrars should obviously not be restricted to only one presentation and can present as many times as they like. Registrars that deliver more than one presentation and also registrars that present at international congresses should be able to earn credit for the hard work they did.

6.4.1.5 *Summative discussion on assessment methods during formative assessment*

The researcher believes that formative assessment results must play a role during the final examination committee meeting at the completion of summative assessment. The marks the student earned on account of the quality of their portfolio cannot be neglected, but must be included in the discussion before a final mark is awarded to the specific candidate. The portfolio can be valuable - especially in the case of borderline candidates to decide between a pass and a fail or between an ordinary pass mark and a distinction.

6.4.2 Assessment methods in the written part of the final (summative) assessment

In 2004, Le Roux published an article in which he criticised the traditional way of the summative assessment and mentioned a few false concepts about summative assessment. He criticised the fact that the final exam is seen as “THE BIG” assessment opportunity and that students do not have to know which assessment methods the assessor is going to use because it is the assessor’s prerogative. The aim of the assessment should not be to catch students out on a what they do not know but to assess the student over an extensive part of the curriculum (cf. Chapter 2, Section 2.4.4.2).

In HSE, assessors need to adapt to the principles of HE and therefore need to work hard to make sure that students are examined fairly, that the questions and the marking thereof are valid and that the assessment methods used are trustworthy and cover a big enough part of the curriculum. At the moment, the written part of the final examination consists of essay type questions and short questions. Six examiners are appointed by the College of Urologists and they are required to send their questions to the convener of the examination (the convener is one of the six examiners). The convener then compiles the two papers where the one consists entirely out of essay questions and the other out of short questions. The moderator can oversee the whole process if necessary.

After the literature review, the questionnaire survey and the four round Delphi process, the researcher has come to the conclusion that the format of the written part of the examination needs to change. In the following few paragraphs the researcher will discuss the assessment methods that should be used in the written part of the examination and discuss the reasons for the choices.

6.4.2.1 *Multiple-choice questions (MCQ)*

Multiple-choice questions are the current “buzz” word and many experts in HE feel that the use of MCQ’s is essential in modern assessment. The CMSA held a workshop on MCQ in Cape Town and Johannesburg in February 2012, which is an indication that they have taken notice of the value of MCQ and that it might soon become an integral part of modern HSE as well. The researcher is convinced that MCQ should be a part of

the written examination and should replace the essay type questions in one of the papers of the final assessment opportunity. The researcher will discuss his reasons for the inclusion of MCQ in the final examination in the following paragraphs.

MCQ is able to test the following cognitive levels according to Bloom's taxonomy: Knowledge, comprehension (understanding), analysis, application (problem solving) and evaluation skills (cf. Chapter 2, Section 2.4.9.5). It does not assess the students' clinical skills and attitudes including their professional behavior. The compilation of a good MCQ paper is time consuming, but it marks and analyses easily. It should not be too complex, because that can confuse students. It can have a wide variety like true/false or case reports with questions deriving from the case report. Several examination bodies have "banks" of MCQ's and they can be accessed via the Internet (for example iMeducate.com). There are also several books available with thousands of examples of questions. (For example: Leslie, S. 2006. Urology Board Review). The question arises if the available "banks" of MCQ can be entice the students to "learn the questions" rather than to study the whole curriculum. This is a definite possibility and it is therefore essential that the questions should be revised before every examination. The view of the researcher is that the College of Urologists should appoint a MCQ task team who has to sit down and compile their own bank of MCQ's. The task team can consist of academic Urologists as well as Urologists in private practice with an interest in education and assessment. The researcher realizes that this will be a daunting and time-consuming task, but would be invaluable for assessment in Urology. There are several problem areas that the College of Urologists will have to address if MCQ's will be included in the written part of the examination. The most important of these is that the questions will have to be revised for every examination in order to make them unique for the specific examination. Subtle changes in the stem and/or the distracters of the MCQ will discourage the student to study only the questions and not the prescribed curriculum.

There are several templates available on the construction of good MCQ's and also several rules that assessors need to adhere to when compiling a MCQ paper. Every question should address a single objective and the problem should be formulated in the stem of the statement. Alternatives given thereafter must be as short as possible because if it is too complex it might make it difficult for the student to remember and compare them. There must be at least four alternatives to minimise guessing and the position of the correct statement must be varied. The tone of the stem must be

positive rather than negative, for example: "Choose the correct statement..." rather than "Choose the statement that DOES NOT". The standard of the "distracters" must be of a high quality so that it can be an attractive option for the "guessing student" and all the alternatives must be grammatically consistent. If the alternatives are not grammatically consistent, the correct answer might be too obvious. The assessor should avoid terms like "all of the above:" and "none of the above" at all times if possible (cf. Chapter 2, Section 2.4.9.5).

There are several advantages linked to the use of MCQ's. By using MCQ's a large part of the syllabus is covered while one tests the candidate's thinking rather than their writing skills. As mentioned before, it is easy to mark the papers and test several cognitive levels of performance. Guessing can be a problem if the questions are not compiled carefully. The biggest disadvantage of this type of questions, is that it is time consuming to compile and structure it in such a way that guessing is minimised (cf. Chapter 2, Section 2.4.9.5).

There are different opinions among Urologists about the use of MCQ as an assessment method for registrars in Urology. In the questionnaire survey the difference in opinion could be seen in the comments added on the questionnaire answer sheet. Some of the comments will be added here to illustrate the different opinions (cf. Chapter 4, Section 4.2.10.8):

- "This is a good method of assessment when high numbers of students are assessed and is quick to mark.
- It is a *puzzle for monkeys* and is only useful in *student factories* where thousands of students are assessed simultaneously.
- It is a useless method to assess knowledge, except in that it assesses educated guessing".

The statistical analysis of the questionnaire survey found that about 69% of the respondents felt that MCQ was a somewhat appropriate assessment method, while 31% felt that it was a very appropriate assessment method (cf. Chapter 4, Table 4.34).

In the Delphi process, the panelists agreed in Round One that the compilation of a MCQ paper was cumbersome and took a long time to set up and that MCQ's were quick and easy to mark. Consensus was reached in Round One on both these

statements with a 100% agreement between the panelists (cf. Chapter 5, Table 5.2, Section I). They also agreed that MCQ's are an excellent way to assess a student's knowledge but are unable to test their clinical skills and professional behaviour (cf. Chapter 5, Table 5.2, Section I). The comments made by the panelists showed less disagreement than that in the questionnaire survey. Some of the comments will be included here to illustrate that MCQ is able to assess the knowledge and judgement over a wide field of the curriculum and offers excellent reliability and validity.

Examples of the positive comments made by the Delphi panelists include:

- "Good for testing knowledge and judgement.
- Test knowledge over a wide field and is easy to mark.
- An essential component to assess the student's theoretical knowledge and grasp of the fundamentals of his/her chosen course and also of advances in approach in all the areas covered by the curriculum" (cf. Appendix D5).

However there were also a few negative comments about MCQ as an assessment method including:

- "Ambiguity is a problem and intelligent guessing is possible.
- It is difficult to find new questions" (cf. Appendix D5).

In conclusion, there is NO DOUBT that MCQ's should be a part of the written assessment of the registrars in Urology. The researcher proposes in his model that the first of the two papers of the written assessment should consist exclusively out of MCQ questions. Some assessors in Urology might criticise this viewpoint, but the researcher thinks the College of Urologists should urgently consider the inclusion of the MCQ in the written part of the final examination.

6.4.2.2 *Short questions*

This is the standard method to assess knowledge, problem solving and interpretation skills. It is easier to design than multiple choice questions but not able to test as much knowledge as MCQ (cf. Chapter 2, Section 2.4.9.12). When the researcher had to make the decision on which assessment method to use in addition to the MCQ for the

written part of the final examination, the choice was between short questions and essay-type questions.

In the questionnaire survey among Urologists, 54% of the respondents were of the opinion that short answer questions were very appropriate as an assessment method in the final examination while 40% of the respondents felt that it was somewhat appropriate (cf. Chapter 4, Table 4.33). More than half of the respondents felt that the short-question paper was relatively easy to set up and took a shorter time to mark than the essay-type question (cf. Chapter 4, Table 4.31 & 4.32).

In the Delphi process, the panelists agreed that short questions were able to test a wide range of knowledge but not as wide as MCQ questions (cf. Chapter 5, Table 5.2, Section I). It is, however, easier to set up than MCQ and not as time-consuming to mark as essay-type questions. Some of the comments added by the Delphi panel include:

- "Time constraint of assessment allows short, well-constructed questions to cover a much wider spectrum of the ability of the individual being assessed.
- It is easy to administer and mark, objective and tests a wide field of knowledge.
- Useful for the assessment of factual knowledge (cf. Appendix D5).

The Delphi panel agreed in Round One that the short questions are a good test of the knowledge of students and do cover a wider spectrum of the curriculum than the essay-type question (cf. Chapter 5, Table 5.2, Section I). It should be noted that this assessment method is not suitable for the assessment of clinical skills, professional behaviour and attitudes and also tests fewer cognitive levels of performance than the MCQ.

Essay-type questions measure understanding, synthesis and knowledge if the questions are asked correctly (cf. Chapter 2, Section 2.4.9.2). It has been (and still is) the mainstay of the written part of the final examination in most Colleges of the CMSA. It is a traditional way of assessment and its advantages include the fact that it allows for student individuality and expression and can reflect the depth of student learning (cf. Chapter 2, Section 2.4.9.2). There are also several disadvantages associated with essay-type questions. The assessors have to realise that essay writing is an art in itself and students with good writing skills may have an advantage in this regard. On the

contrary, students from a previously disadvantaged background may have an unfair disadvantage (cf. Chapter 2, Section 2.4.9.2). To write a good essay is time-consuming and students that do not have good organisational skills may struggle to complete the paper of essay questions in time. The researcher feels that the big disadvantage of the essay question is the fact that variations between assessors about the same questions decrease the validity of this type of assessment (cf. Chapter 2, Section 2.4.9.2).

The fact that the essay-type question was still highly regarded among Urologists was proven in the questionnaire survey, where 69% of the respondents indicated that it was a very appropriate way of assessment of postgraduate students in Urology (cf. Chapter 4, Table 4.34). The essay question is very valuable because the method is a good indicator of academic knowledge and also assesses the learners' structured thought processes and their ability to organise and communicate information. Essay-type questions can expose deficits in a candidate's knowledge although it does not cover a big part of the curriculum. It also tests the ability of a student to manage time because they have to allocate a certain amount of time to every question in order to answer all fair questions.

Essay-type questions are easy to set up but take a long time to mark. The researcher agreed with the opinion of the respondents to the questionnaire survey in this regard (cf. Chapter 4, Table 4.31 & 4.32). If the marking of the essay-type question is based on the impressions of the assessor, the marking is quick, but if feedback has to be given to the student, the marking is more difficult and takes up more time (cf. Chapter 2, Section 2.4.9.2).

In the Delphi process, consensus could not be reached about the essay-type questions. The panel did agree that this type of assessment was easy to mark (Consensus Round Two of the Delphi process with 100% of the panelists in agreement). Consensus could not be reached about the value of this assessment method to test the knowledge or clinical skills of the students and most panelists felt that it was only of moderate value (cf. Chapter 5, table 5.2, Section I). To illustrate the point mentioned above, a few of the comments of the panelists will be shown here (cf. Appendix D5):

- "Hopelessly unreliable and problematic in many respects, should be avoided at all costs
- By scanning previous papers, candidates might spot questions correctly

- There may be *coaching* involved which may disadvantage *non-coached* candidates
- The question covers a restricted field
- Good for assessment but often biased”.

The opinion of the researcher after the study of the literature, the questionnaire survey and the Delphi process is that short questions rather than essay-type questions should be used in the second paper of the written part of the final examination. Both types of assessment test the knowledge of the student, but the short questions cover a bigger part of the curriculum and the situation is avoided where a deficit in one part of the curriculum can dent the student's chances to pass the examination. The short questions are also easier to mark and “impressionistic” marking and assessor bias can be avoided.

6.4.2.3 *The appeal process*

On completion of the written part of the examination, the papers are returned to the assessors whose questions were used in the examination. The assessors are given a deadline by which time the assessment of the papers has to be completed and the final marks have to be returned to the convener of the examination. After the convener has studied the marks of the students, the convener, in consultation with the moderator of the examination, decides which of the candidates will be invited to the clinical part of the examination. The usual cut-off point is an average of more than 45% for the two papers combined, but it is the prerogative of the convener and the moderator to make the final decision on the candidates that will be invited.

At the moment there is no appeal procedure in place and the researcher feels that this should be rectified. In Section 6.3.2.2 the researcher made a proposal that an appeal policy should be in place that allows the student to appeal at the completion of the written part of the examination and before the clinical part of the examination takes place. SAQA requires that an appeal mechanism should be in place that will enable dissatisfied students to appeal to the assessment authority and that the moderation process should be reviewed from time to time (cf. Chapter 2, Section 2.4.11.3).

The researcher therefore wants to make a few proposals regarding the appeal process that should take place at the completion of the written part of the examination:

- Dissatisfied students should be allowed to appeal to the College of Urologists to re-evaluate or re-mark their papers;
- The deadline given to the assessors to return their papers to the convener must be moved forward so that enough time will be available for the appeal process and before the final invitation to the successful students;
- A fee should be payable to dissuade students to appeal “just for the sake of appealing”. This fee should be decided by the appeals committee of the Council of Urology in conjunction with the other Colleges of the CMSA;
- A member of the Assessment Committee of the College of Urologists, should be appointed to act as “verifier” in the event of an appeals by dissatisfied students;
- This person should not be involved in the specific examination as moderator, convener or examiner and should be a senior assessor that has been used as a moderator in previous examinations;
- The task of the “verifier” will be to re-evaluate the paper(s) of the student(s) with the aid of the memorandums of the questions and to give his/her opinion about the marks the student deserves;
- Thereafter the “verifier” has to consult the convener and moderator of the specific examination and tell them if and why the marks of the student have been changed;
- The “verifier” must be someone that is trusted by the College of Urologists in such a way that his/her opinion should be seen as the final one and no debate should take place after his/her decision on the marks of the student;
- Only then the student will be notified about the final decision, but the whole process should be completed before the final invitation of the successful candidates; and
- The whole process should be reviewed from time to time by an external verification committee appointed by the College of Urologists.

6.4.3 Assessment methods in the clinical part of the final (summative) assessment

In the following paragraphs the researcher will propose the assessment methods that should be included in the clinical part of the examination and the reasons why these

assessment methods should be used. The clinical part of the examination takes place twice a year in May and October and the venues are rotated between the seven Medical Schools in South Africa. The clinical part only lasts for one day in the College of Urologists (probably because of the limited amount of candidates the College of Urologists has) although in other Colleges the process may last for two or three days. The convener is responsible for the logistical arrangement of the examination and is assisted by five other examiners. The whole process is moderated by the moderator.

6.4.3.1 Objective Structured Clinical Examination (OSCE)

The OSCE was originally developed by Harden in 1975 and since then it has been rated as the gold standard to evaluate clinical skills. In 1988 Harden said the following about the OSCE: "*The **OSCE** is an approach to the assessment of clinical competence in which the components of competence are assessed in a planned or structured way with attention being paid to the objectivity of the examination*" (Harden 1998:19). Since the introduction of the first OSCE examination, thousands of articles have been written about the OSCE and it is used extensively to assess students in the surgical disciplines (cf. Chapter 2, Section 2.4.9.7).

This method is useful to assess theoretical, practical and communication skills. OSCE's are fair, reliable and of high validity. It is time consuming to organize and needs a lot of assessors at the same time (cf. Chapter 2, Section 2.4.9.7). It is very useful in Urology because certain skills can be assessed during the OSCE that cannot be assessed in the clinical cases because of the time constraints. It also covers a large part of the curriculum and tests students' communication and organizational skills and their ability to think and make decisions under pressure. There are many advantages of the OSCE examination (cf. Chapter 2, Section 2.4.8.7), but one of the most important ones according to the researcher is that the student gets exposed to a range of examiners and that leads to a decrease in stress if compared to a "one-on-one" confrontation between a student and only one assessor. This is true in Urology in the current assessment model because in every station there are two examiners present and although the questions are asked by only one of the two examiners, both are required to give a mark relating to the student's performance. By using this method during assessment, moderation takes place at the same time as examination because the two examiners can moderate each other's performance.

The OSCE examination can be individualized to suit the needs of the assessment authority but there are certain rules that should be followed. Some of the rules are discussed in the literature review (cf. Chapter 2, Section 2.4.8.7). The length of the OSCE stations in the current model used in Urology is ten minutes and a minimum of ten stations is utilized.

In the questionnaire survey among Urologists there was agreement that the organization of a good OSCE examination is time consuming but it does not take a long time to mark (cf. Chapter 4, Table 4.31 & 4.32). About 70% of the respondents felt that it was an appropriate way to assess a student's knowledge, but only 55% felt that it was good method to assess their clinical skills and even fewer felt that it was appropriate to assess their personal behavior (cf. Chapter 4, Table 4.34-4.36). The respondents felt that an OSCE can test areas of clinical importance that cannot be tested in a clinical case scenario or in an oral examination and that it can deal with a clinical scenario in the absence of a patient. Certain practical skills like the interpretation of X-rays and urodynamic studies can also be effectively assessed during an OSCE examination according to the respondents.

The panelists of the Delphi process agree that the compilation of a good and valid OSCE is time consuming (Consensus Round Two with 80% of the panelists in agreement). The panelists agree that the OSCE is a good method to test the knowledge of the student but not a good indicator of the extent of their clinical competence or skills (cf. Chapter 5, Table 5.2, Section I). The panelists felt that the OSCE is useful to test recognition of clinical signs and that it allows the assessors to use many different stations thereby covering a great deal of the curriculum. The OSCE also is an excellent way of authentic assessment according to the panelists. The panelists did warn that a good OSCE is time-consuming and difficult to arrange; one of the panelists pointed out that the depth of an OSCE is limited unless longer stations are used and a minimum of 10 stations, which the student visits over the course of 3-4 hours, is necessary to achieve a reliability of 85-90%.

The researcher reached the conclusion that the OSCE should not be used in isolation, but should be combined with other assessment methods to avoid the shortcomings thereof as pointed out by the Delphi panelists.

The researcher wants to propose that the OSCE should be retained as one of the assessment methods to be used in the final assessment opportunity and should comply with the following rules:

- The OSCE should consist of at least ten stations and time duration at an OSCE station should be at least ten minutes but could be longer if enough time is available.
- There should be two examiners at every OSCE station; one of the examiners should ask the questions, but both should give a mark according to the student's performance. This also serves as a way of moderation.
- The moderator should rotate between the stations in such a way that all three groups of examiners (six examiners, two examiners assessing one station at a time) could be moderated more than once during the OSCE.
- The skills that cannot be tested in the clinical examination should be assessed during the OSCE. These include the interpretation of X-rays and urodynamic studies, evaluation of spermiograms and discussions about the diagnosis and treatment of a condition diagnosed on account of a pathological sample. This is a flexible process and it should remain the prerogative of the convener to decide on the format of the OSCE.
- The examiner should not only concentrate on the knowledge of the student but other cognitive levels of assessment according to Bloom's taxonomy should also be assessed including comprehension (understanding), application (problem solving), analysis and synthesis (the ability of the student to combine different elements of a problem and provide a solution).

6.4.3.2 *Clinical Cases*

The ability of a registrar to examine a patient and in doing so to prove his/her clinical competence is and should remain the mainstay of the assessment of the clinical skills of a registrar as part of his/her final assessment. One of the panelists in the Delphi process summarised the importance of the use of clinical cases as part of the assessment process as follows: "There is nothing to replace *real life* situations; this method is the closest to clinical practice". Using this assessment method the assessor can measure registrars' application of knowledge, analysis and problem solving skills, evaluative skills and attitudes towards their patients. More complex cases may be

challenging to design and develop, but short cases are usually easy to design and mark (cf. Chapter 2, Section 2.4.9.1).

It is a daunting task to prepare an examination where the clinical cases that are used cover a sufficient part of the curriculum, moreover, much time and organisation are necessary to prepare a good clinical examination. It is, however, easy to score and is a good assessment method to assess the knowledge and clinical skills of the candidates (cf. Chapter 4, Table 4.30-4.34). This form of assessment can test the student's attitudes and professional behaviour towards the patients (cf. Chapter 4, Table 4.35) and the assessment thereof should be incorporated in the final mark given to the candidate. The respondents to the questionnaire agreed that this method of assessment is the best way to assess the clinical competence of the student because they are placed in "real-life" situations with real patients. More than 90% of the respondents in the questionnaire survey agreed that clinical cases were an appropriate way of assessment of students' clinical competence (cf. Chapter 4, Table 4.36).

In the Delphi process the panelists reached consensus in Round One that the clinical case examination does not take a long time to mark, but is difficult to arrange (cf. Chapter 5, Table 5.2, Section I). The panelists also agreed that the use of clinical cases is an appropriate method of assessment to evaluate the knowledge, clinical skills, professional behaviour towards patients and clinical competence of a student, although in the case of the knowledge and clinical skills of the student consensus was only reached in the third round of the Delphi process (cf. Chapter 5, Table 5.2, Section I).

It was shown in the later rounds of the Delphi process that the panelists did differ in their opinion about the value of clinical cases as an appropriate assessment method in the final examination. Two of the statements will be shown here to illustrate the different opinions among the Delphi panelists (cf. Appendix E5):

- "Best method of testing clinical competence including clinical reasoning and ability to synthesise information in the clinical setting and it provides the ultimate test of clinical proficiency".

In contrast to the opinion stated above the opinion of one of the other panelists was (cf. Appendix E5):

- "Lack of sampling makes clinical cases unreliable and hence mostly invalid. One cannot extrapolate a candidate's knowledge to the entire domain of ability from 3 cases. All research has shown that. You need about 8 at least".

An exciting new modality that can be used to assess the clinical skills of the students is the Mini Clinical Evaluation Exercise (Mini-CEX). This method of assessment was suggested by a member of the Delphi panel as another assessment method of clinical skills. This method of assessment was included in Round Two of the Delphi panel (cf. Appendix D5). The technique of the mini-CEX was developed by the American Board of Internal Medicine and they make use of a specific form to assess the clinical skills of the candidate. (ABIM:Online). The Mini-CEX facilitates formative assessment of core clinical skills. It is a 10-20 minute direct observation of a trainee-patient interaction. It is good for the evaluation of the different clinical skills including medical interviewing, physical examination, informed decision making, counselling and clinical judgement reasoning.

The assessors use a scoring rubric to judge the performance of the student. As mentioned before, the Mini-CEX is a good assessment method to use during formative assessment, but could certainly be adapted to be used in summative assessment as well. The Mini-CEX is currently used for assessment in Internal Medicine, but is rather generic and could easily be adapted to be used in a surgical discipline like Urology. Another new assessment tool suggested by the Delphi panel in Round One (cf. Appendix D5) is the Direct Observation of Procedural Skills (DOPS). This technique has been developed by the Royal College of General Practitioners and is therefore more suitable for the assessment of undergraduates and general practitioners.

In the Delphi process, consensus could not be reached on the value of the Mini-CEX as an appropriate assessment method to assess the clinical skills and clinical competence of the candidates. Some of the panelists considered it an exciting new method of workplace based assessment ("on the job"). The panelists felt that it is a promising new method of assessment and is a good method to include in the spectrum of assessments. Another held the opinion that the clinical behaviour, ethics, skills and knowledge of the student can be assessed by the Mini- CEX. On the contrary, another of the panelists' opinion was that the Mini-CEX decreases the personal contact between the assessor and the student, which could decrease the value of the clinical case assessment. The opinion of the researcher is that it can add to the value of clinical

case assessment and that the College of Urologists has to develop a similar assessment method that will be suitable in the assessment of Urology registrars.

After careful consideration of the literature, the questionnaire survey and the different opinions expressed in the Delphi process, the researcher wants to propose the following:

- The inclusion of clinical cases is ESSENTIAL as part of the assessment methods that should be used in the final summative examination. The researcher agrees with the one Delphi panellist that the entire domain of a student's ability cannot be judged by the assessment on three clinical cases alone, but that is why the researcher proposes a combination of assessment methods INCLUDING the formative assessment methods. Assessment of clinical cases is included in the current assessment model of registrars.
- The candidate should examine at least three clinical cases, but provision should be made for a fourth case in the candidates where a final decision cannot be reached after three cases.
- It should be the task of the convener and his/her supporting staff to assemble a wide range of clinical conditions so that the candidates can be judged on their clinical competence in a range of patients.
- Two examiners must be present at the assessment of a student in the clinical case examinations. One of the examiners should be in charge of conducting the assessment but both examiners can be allowed to ask questions. Both examiners should give a mark according to the student's performance.
- The clinical cases should be used exclusively to judge the candidate's professional behaviour, ability to examine a patient, make a diagnosis and to apply knowledge to solve the problem. The candidate should not be examined on the theoretical aspects of the specific condition; these aspects can be assessed during other parts of the assessment like the oral examination.
- The moderator has to inform the assessors about the format of the clinical case assessment and what they need to assess during this method of assessment. The moderator must rotate between the different combinations of assessors during the assessment of clinical cases to moderate their way of assessment.
- A scoring rubric like the Mini-CEX may be an additional and valuable tool during assessment of clinical cases. The researcher therefore proposes that the College of

Urologists has to develop a similar assessment tool that will be applicable for the assessment of registrars in Urology.

6.4.3.3 *Oral examination*

The oral examination has traditionally been one of the mainstays of the final assessment of postgraduate students in Urology. The ability to “think on your feet” is very important for medical doctors and in particular for the doctors in the surgical disciplines. Surgeons often find themselves in situations where the right decision is crucial and the wrong decision may be life-threatening. The oral examination is THE examination where this skill can be tested, although this method also tests communication skills, understanding and knowledge of procedures. If this method is used, it is possible to give feedback during the assessment process (cf. Chapter 2, Section 2.4.9.6).

In Urology this method is often used to test the candidate’s depth of knowledge and his/her ability to describe the management of complications during surgical procedures. The oral is also helpful to make a decision on borderline cases (fail or distinction) and can be regarded as fair because all the students are asked the same questions (cf. Chapter 2, Section 2.4.9.6). In Urology the oral examination is the final part of the assessment process before the meeting of the examination committee. The assessors should convene before the oral examination to decide on the questions that should be asked by the different examiners. This is done to avoid duplication of questions and to decide on the areas of the curriculum that have not been covered by the other assessment methods so that these areas can be included in the oral examination. The use of a checklist or pro-forma to keep a record of a student’s performance and the questions that were asked to him/her in the previous rounds of the oral examination is essential to avoid duplication. It is better to have more than one assessor sharing the questions but different “stations” with a different set of assessors to ensure a fair and valid assessment (cf. Chapter 2, Section 2.4.9.6).

Cultural and individual differences can be a cause of the underperformance of students in this type of examination and there always is the possibility that some questions can be “leaked” if all the students are asked the same questions. The convener and his/her supporting staff must be aware of this phenomenon and take precautions to prevent it from happening. It is important to put students at ease at the start of the oral

examination because they experience a lot of tension and feel disadvantaged because of the “two-to-one” situation. The oral can be a good feedback opportunity and therefore the two examiners can confer about the performance of the student at the end of the examination and make some notes that can be given as feedback to the student at a later stage.

In the questionnaire survey among Urologists, 75% of the respondents agreed that the oral examination takes a long time to set up but is easy to mark (cf. Chapter 4, Table 4.31 & 4.32). Two thirds of the respondents felt that the oral examination was appropriate for the testing of a student’s knowledge but only one-third felt that it could also be used for the assessment of clinical skills and professional behaviour (cf. Chapter 4, Table 4.34-4.36). The respondents also felt that the oral examination is a test of the candidate’s communication skills and structured thought processes under pressure and could test in-depth knowledge over a wide range of subjects in a rapid manner (cf. Chapter 4, Section 4.2.10.8).

In the Delphi process the panelists was of the opinion that it is difficult to set up an oral examination, but that marking is easy because the marks are awarded at the end of the oral examination. Consensus was reached in Round Two of the Delphi process on these two statements (cf. Chapter 5, Table 5. 2, Section I). The opinion of the Delphi panelists was that the oral examination is a good assessment method for both the knowledge and the clinical competence of the student. Eighty percent (80%) of the panelists agreed on those statements in Round Two of the Delphi process and consensus was declared (cf. Chapter 5, Table 5. 2, section I).

In Round One of the Delphi process there was some disagreement among the panelists on the value of the oral examination as an appropriate assessment method. Some of their remarks will be included here to illustrate the different views of the Delphi panelists (cf. Chapter 5, Appendix D5):

- “The oral examination should be used as support for other types of assessment and one must accept some students are strong in this regard while others need time to think things through before responding and will respond in a better way if they can write it down.
- A good method to test knowledge and competence and can cover huge areas of the curriculum.

- An experienced examiner can judge a candidate accurately if the examiner remains neutral”.

There were also comments that suggested that there could be examiner bias in an oral examination and that it could be associated with many problems, including reliability and intimidation of the candidate by the assessor. The comment that summarises the opinion of the researcher about the value of the oral examination stated that “The combination of direct observation of the candidate (long case) and “mini-clinical exercise” (short cases) followed by an oral remains the backbone of summative assessment”. The researcher agrees that the oral examination should not be used in isolation to be successful, but if it is used in combination with other methods of assessment as part of an assessment plan, it could be a valuable assessment method that contributes substantially towards a fair and reliable assessment process.

The researcher thus proposes:

- The oral examination should be a part of the final assessment process for registrars in Urology. The oral examination can be used to assess knowledge, understanding and problem solving, but also the higher cognitive skills of synthesis and evaluation.
- It is the last of the assessment methods before the end of the assessment process and can therefore be used to make a decision in “borderline” candidates.
- There should be different oral “stations” and every station must have two examiners. In doing this the two examiners can moderate each other and both of the examiners can give independent marks.
- The oral examination can be used to assess the candidate’s knowledge of aspects that cannot be assessed anywhere else including medical ethics.
- The moderator should be involved in the oral examination and rotate between the different oral stations as part of the quality assurance process of the oral examination.

6.4.3.4 *The appeal process*

In the clinical part of the examination, quality assurance is much easier to apply than in the written part of the examination. The fact that two examiners will be used at each point during the assessment ensures that they can continually moderate each

other. The moderator's presence during the whole assessment process also simplifies his/her task to ensure the quality of the assessment process. At the end of the assessment process there is a meeting of the examination committee, which includes all the examiners and the moderator of the examination. During this meeting the marks of all the students are discussed individually and can be adapted if necessary. This is another way to guarantee the quality of the assessment process and ensures that candidates are judged in a fair, reliable and transparent manner.

The problem with the clinical examination is that there is not an opportunity to give feedback to the students. This problem has been mentioned by the researcher in this chapter in Section 6.3.5 under the heading "summative feedback". The researcher acknowledged that he could not find a solution for this problem, but that it should be pursued by the College of Urologists. There are always students that are not satisfied with the marks they received during the clinical part of the examination and the obvious ones are the candidates that did not pass. These students should be able to get some feedback about the examination and also should receive support from the moderator, the convener and other members of the examination panel.

The researcher suggests the following regarding the appeal process at the conclusion of the clinical examination:

- The final mark awarded by the examination committee is final and cannot be changed;
- The candidate(s) that are not satisfied with the examination results can appeal to the convener and/or the moderator of the examination in which they participated; and
- The convener and/or moderator can give feedback about the assessment process to the student(s). However, the feedback should be anonymous and the individual scores of the different examiners cannot be revealed. By doing this, both the examiner and the student are protected and the development of a "dog fight" between the student and individual examiners is prevented.

The researcher realises that the few proposals made above might not be enough to satisfy the students. The College of Urologists in conjunction with the other Colleges that are a part of the CMSA, will have to look into this problem and pursue a solution.

It will not be an easy process and all the role players will have to be consulted before a final decision can be made.

6.4.4 The assessment of the dissertation

The researcher has mentioned before that the dissertation or research project is the candidate's opportunity to become acquainted with research methodology and to contribute towards the available literature in their field of study (cf. Section 6.3.5). The dissertation tests the all-round ability of the student including analytical, interpretative and practical skills. This type of assessment is time consuming, but has high learning gains for the student. Formative assessment and feedback can be given to the students as they get along and peer- and self-assessment can provide additional feedback (cf. Chapter 2, Section 2.4.9.10).

In 1991 the United States Graduate School described the dissertation as a highly professional training experience during which the student demonstrates the ability to address an intellectual problem and to arrive at a successful conclusion (cf. Chapter 2, Section 2.4.9.10). In this publication, the author stated that, by completing a dissertation the student adds an original contribution to the available literature in their field of study (cf. Chapter 2, Section 2.4.9.10).

In the questionnaire among Urologists the dissertation was not regarded as a good method to assess knowledge, skills or professional behaviour (cf. Chapter 4, Table 4.33-4.35). Several respondents commented on the value of the dissertation as an assessment tool. Their opinion was that the dissertation is a highly professional training experience and at the completion thereof the student demonstrates his/her ability to address an intellectual problem and arrives at a successful conclusion. Furthermore, the dissertation helps the student to learn about the principles of research methodology and how to critically evaluate the available literature about any given subject.

In the Delphi process the panelists agreed that research should be an integral part of any Magister study and that the dissertation is the most appropriate method to teach students about research methodology and help them to contribute towards the available literature in their field of study (cf. Chapter 5, table 5.2, Section I). The

comments added by the panelists confirmed the importance of the dissertation as a research tool.

The researcher agrees with the respondents to the questionnaire survey and the panelists of the Delphi process that the dissertation is an ESSENTIAL for postgraduate students in Urology. Although the dissertation has been part of the final assessment of the MMed examination at the UFS since 2010, the CMSA only made the completion of a dissertation compulsory for students that started their studies in 2010; so the first candidates under the new rules will only be assessed on their dissertation as part of the final assessment process at the end of 2013.

The format of the dissertation that is used in the MMed examination differs from one university to another. This has been discussed in section 6.3.5. The researcher proposes that the format of the dissertation in the FCU (SA) examination could be one of two options:

1. A standard research protocol with primary and secondary research objectives, materials and methods used in the study, the results and the statistical analysis thereof and a discussion of the results with referral to the achievement of the research objectives.
2. Publication of at least one approved research article in an accredited national or international publication (certain pre-defined criteria must be adhered to and the research article must comply with this). The research article must be approved by the Head of the Department where the student studies as well as by the Ethics Committee of the University.

The method of assessment of the dissertation has not been decided on by the College of Urologists, but the researcher proposes that:

- Every student should have a promoter to assist with the dissertation. The promoter could be the head of the department or a senior consultant in the department.
- The assessment committee that was discussed in Section 6.3.1.2 must be responsible for the assessment of the dissertations.
- At least two qualified assessors must be appointed by the assessment committee to assess every one of the dissertations.

- The assessors must write a report about the dissertation at the end of their assessment. The report can be a standard one, such as the ones used by the different Universities or a new one that can be developed by the College of Urologists.
- The assessors must provide a mark at the end of their assessment. The average of the marks given by the two assessors will decide if the student pass or fail.
- The candidate cannot register as a fellow of the FCU(SA) before the student has passed his/ her dissertation even if they have passed the formal examination.

The proposals of the researcher regarding the assessment methods that should be used for the assessment of registrars in Urology is summarised in figure 6.3.

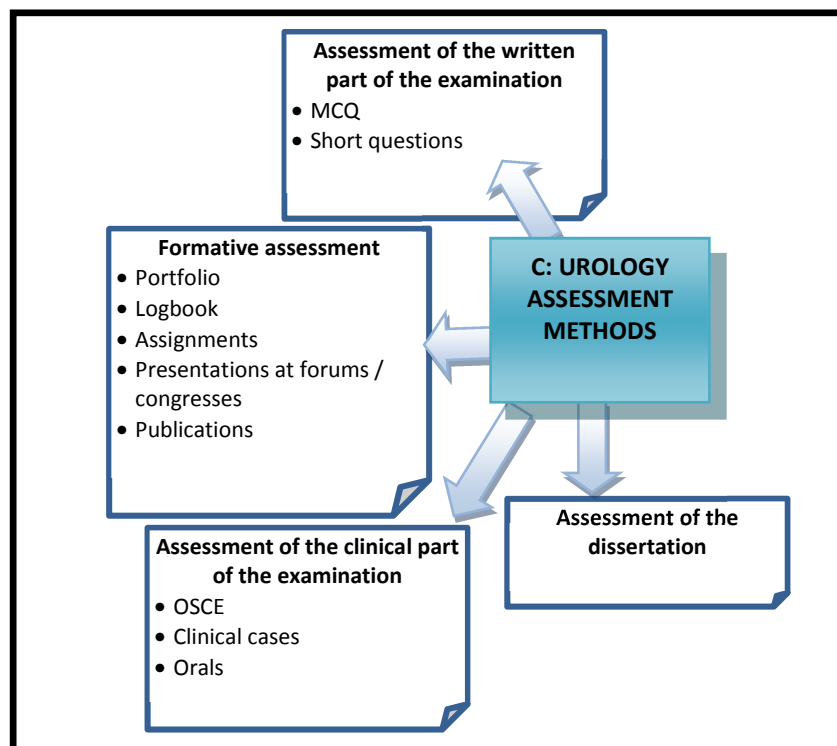


FIGURE 6.3 UROLOGY ASSESSMENT METHODS

[This diagrammatic presentation was compiled by the researcher, Wentzel (2012), as part of the Ph.D. research project].

6.5 CONCLUSION

In this chapter, components of an assessment model for the training of medical postgraduate students in Urology were discussed. Figure 6.4 illustrates how the different components of the assessment model as described in this chapter interact with one another.

The researcher started by explaining why the assessors involved in the assessment of Urology must be willing to learn about the changes in Higher Education. This knowledge is essential and will increase the value of assessment not only for the student but also for the assessors. The researcher indicates that training in assessment should be incorporated in the assessment model and gave the example of the SPALHE course for assessors as presented by the UFS.

Knowledge of the changes in HE and training in assessment principles will enable assessors to develop an official assessment policy for the assessment of postgraduate students in Urology. A feasible and efficient assessment policy can only be developed if assessors are able to apply the principles of assessment that they learned during their training in assessment. The different aspects of the assessment policy and the proposals that the researcher made will contribute to the development of a fair, valid and transparent assessment process. Quality of the assessment of postgraduate students in Urology can only be assured if the assessment policy as proposed by the researcher is in place and fully effective.

The final part of the assessment model was the proposals of the researcher regarding the assessment methods that should be used to assess the registrars in Urology. The use of the best possible assessment methods is only possible if the assessors that choose these methods have knowledge and training in assessment. The chosen methods can only be effective if they cover an extensive part of the curriculum, assess the different cognitive levels of performance and are fair, valid, transparent and trustworthy. The chosen methods and the dissertation must include formative assessment, the written and clinical examination and the dissertation.

In summary, knowledge of changes in HE and training in the principles of assessment will enable the assessors to develop an efficient and feasible assessment policy. If the assessment policy is in place, the best possible assessment methods can be chosen to test a full range of the abilities of the candidate, cover the largest possible part of the curriculum and provide the candidate with a fair opportunity to prove his/her abilities. The interaction of the components of the assessment model for postgraduate Urology students is illustrated in Figure 6.4.

6.6 SUMMARY

In Chapter 6, the researcher discussed the different components of the assessment model that should be included in the assessment model for postgraduate students in Urology. This included the fact that knowledge of and training in assessment is necessary for the modern assessor in HSE. The researcher proposed an assessment model, as part of his scholarly contribution to assessment of postgraduate students in Urology, that will ensure that the correct purposes of assessment should be pursued, that feedback should be provided to students, that quality assurance should be guaranteed and that different assessment strategies should be used in the assessment of the postgraduate student in Urology. Lastly, the researcher proposed the assessment methods that should be used in a complete and thorough assessment process.

In the next chapter, with the title **CONCLUSION, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY**, the researcher will make some final conclusions regarding the assessment model for the training of medical postgraduate students in Urology. There will be some comments about the limitations of the study and finally the recommendations of the researcher will be discussed.

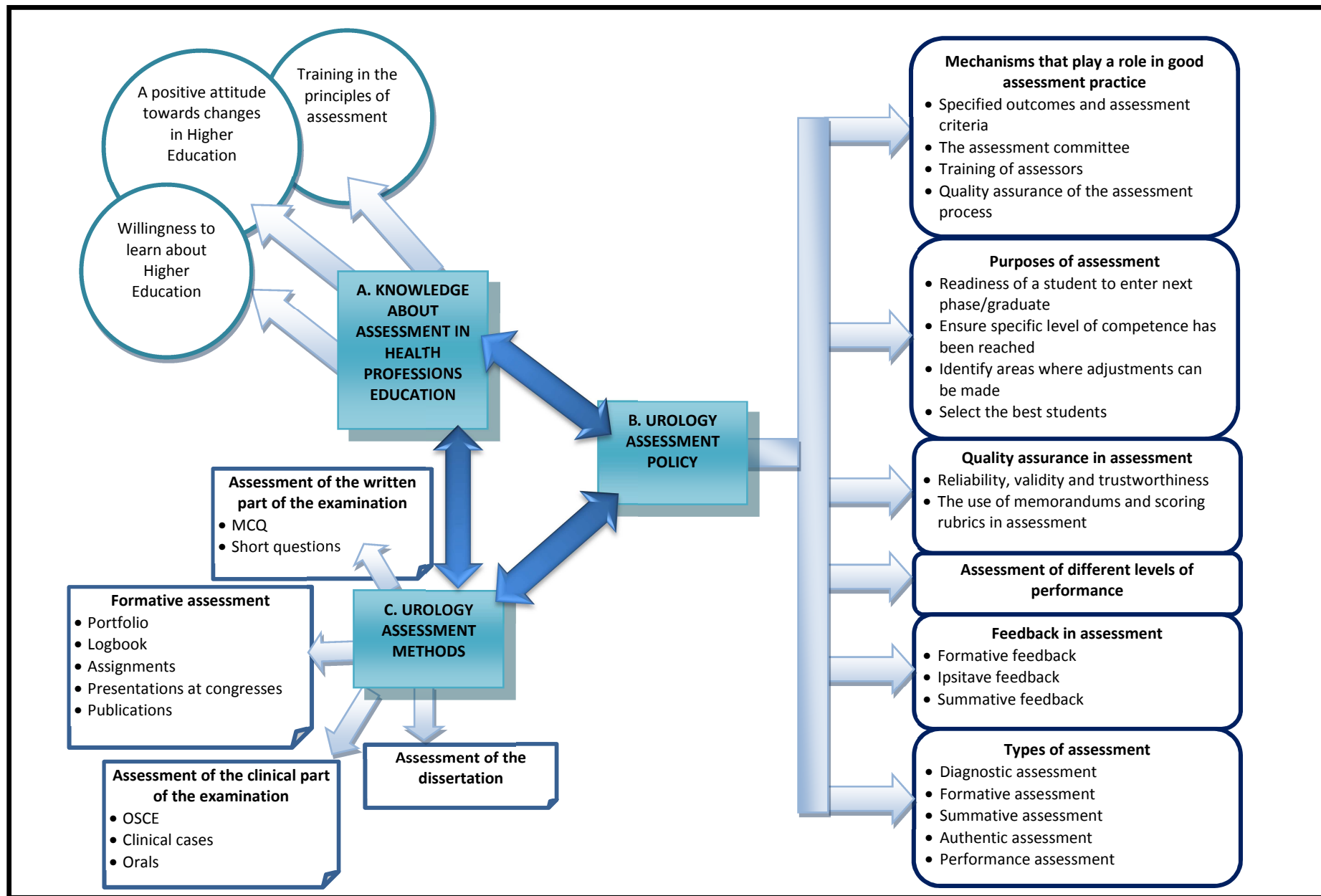


FIGURE 6.4 ASSESSMENT MODEL FOR POSTGRADUATE MEDICAL STUDENTS IN UROLOGY

[This diagrammatic presentation was compiled by the researcher, Wentzel (2012), as part of the Ph.D. research project].

CHAPTER 5

RESULTS AND DISCUSSION OF FINDINGS OF THE DELPHI PROCESS

5.1 INTRODUCTION

The aim of this study was to compile an assessment model for registrars in Urology. The literature review that was done initially identified new developments in Health Sciences Education (HSE) that could contribute towards the compilation of the assessment model. During the literature review the researcher identified certain characteristics of assessment that could contribute towards the final, proposed model. This included different forms of assessment and the definition thereof, the purposes and principles of assessment as well as the compilation and drafting of different assessment models. Quality control mechanisms that should be an integral part of assessment including the use of memoranda and rubrics were noted. The different forms of assessment that could be used to form part of a valid, fair and transparent assessment were investigated. A more thorough discussion of the literature can be found in Chapter 2 of this thesis.

With the help of the literature review a questionnaire survey was distributed amongst Urologists in full-time academic practice as well as Urologists in private practice with a part-time appointment at a Urology department in one of the Schools of Health Sciences in South Africa. In this questionnaire, the respondents were asked in the first place if certain factors associated with modern Health Sciences Education (HSE) do play a role in assessment and should be included in the assessment model for registrars in Urology. In the second place, the respondents were asked to rate the importance of the factor in assessment and if they thought it should be included in the assessment model. Some open-ended questions were added where the respondents were asked to add their comments in the space provided. The results of the questionnaire survey were discussed in depth in Chapter 4 of the thesis.

The aim of the Delphi process was to use a panel of experts, also known as the Delphi panel, to rate and edit the statements that were identified as controversial during the questionnaire survey. Comments and recommendations that were proposed by the respondents to the questionnaire survey were included in the Delphi questionnaire to judge their opinion on certain aspects of the assessment model that was seen as

important aspects of an assessment model by the respondents to the survey. The Delphi panel consisted of experts in the field of Urology as well as experts in the field of HSE. The results of the different rounds of the Delphi process will be presented and discussed in Chapter 5.

5.2 LITERATURE REVIEW AS BACKGROUND FOR THE DELPHI PROCESS

The characteristics of the Delphi process as well as the advantages and disadvantages thereof were presented in Chapter 3 (cf. Chapter 3, Section 3.3.3.1). In Chapter 3 where research methodology was described, the detail about the Delphi process was discussed at length. In essence the Delphi process is a method to refine the opinions of a group of experts (the Delphi panel) in a certain area of interest (Williams & Berry 1999:223). This method was found to be suitable to be employed in health care research (Williams & Berry 1999:223).

5.3 METHODOLOGY AND PROCEDURES

In this study a Delphi process was used to validate and modify the findings of the questionnaire survey that was distributed among Urologists. The findings of the questionnaire survey were formulated in statements which were presented to a panel of experts (the Delphi panel). This was done to help the researcher in his aim to develop an assessment model for registrars in Urology. In this section, the selection of the Delphi panel and the design of the Delphi process will be described. Thereafter the different rounds of the Delphi process will be described individually and the results will be analysed. In conclusion to this chapter, a summative discussion of the results will be presented.

5.3.1 The selection of the Delphi panel

The Delphi panel that was selected for this study consisted of ten (10) members. Half of these members were experts in the field of the Urology and were actively involved in the training of registrars or retired Urologists that were involved in the training of registrars before their retirement. The other five (5) members were experts in the field of HSE.

Before the panel was selected, the researcher and his promoters identified certain criteria which were employed in the selection of the Delphi panel. They decided that half of the panel would consist of Urologists and the other half of Educationalists with experience in HE. Certain criteria were developed to select the Urologists that would form a part of the Delphi panel. These criteria were:

- They had to be Urologists in full-time academic practice or Urologists in private practice with an appointment at a department of Urology at one of the Schools of Medicine in South Africa;
- It was decided that retired Urologists that were in full-time academic practice before their retirement could be included as well;
- All of the selected Urologists needed to have extensive experience in the assessment of postgraduate students on magister or doctoral level; and
- They were excluded from the questionnaire survey among Urologists presented in Chapter 3; and
- They had to sign the informed consent form thereby acknowledging their willingness to participate in the Delphi process.

The criteria that were developed to select the Educationalists in the Delphi panel were:

- They had to be experts in Higher Education (HE)
- They had to have experience in HSE
- They had to have experience in the assessment of postgraduate students on magister or doctoral level and
- They had to sign the informed consent form, thereby acknowledging their willingness to participate in the Delphi process.

Twelve people that answered to the criteria mentioned above were identified by the researcher and his promoters. After careful consideration the decision was made to select ten members who answered to the criteria mentioned above.

According to the literature, consensus is reached when 80% of the participants award the same value to a certain statement that was included in the questionnaire (Larson & Wissman 2000:46). It, therefore, made sense to select ten members for the Delphi panel, it made it easy to calculate the required percentages where consensus was reached.

The first step was to send a letter of invitation to the participants (Appendix C1). In this letter the aim, purposes and objectives of the study were described in detail. The respondents were asked to sign a consent form (Appendix C2) if they were willing to participate in the Delphi process. None of the selected panel declined the invitation and all signed the included informed consent form.

5.3.2 Design of the Delphi process

The Delphi process in this study consisted of different rounds which will be presented and discussed individually. On the completion of each round, the results of the Delphi process were analysed by the researcher. These results will be presented as an Excel spread sheet. The researcher provided feedback to the Delphi panel after each individual round of the Delphi process. In this feedback letter the statements where consensus was reached were presented to the panel and their enquiries and comments were addressed by the researcher. A statistical breakdown of the results of all the statements was presented to the Delphi panel as well. This will be addressed in more detail during the discussion of the different rounds of the Delphi process. At the completion of round four, stability was declared for the statements where convergence of opinion from the experts in the panel took place; the results of those statements remained stable and consensus could not be reached. Figure 5.1 illustrates the four-round Delphi process.

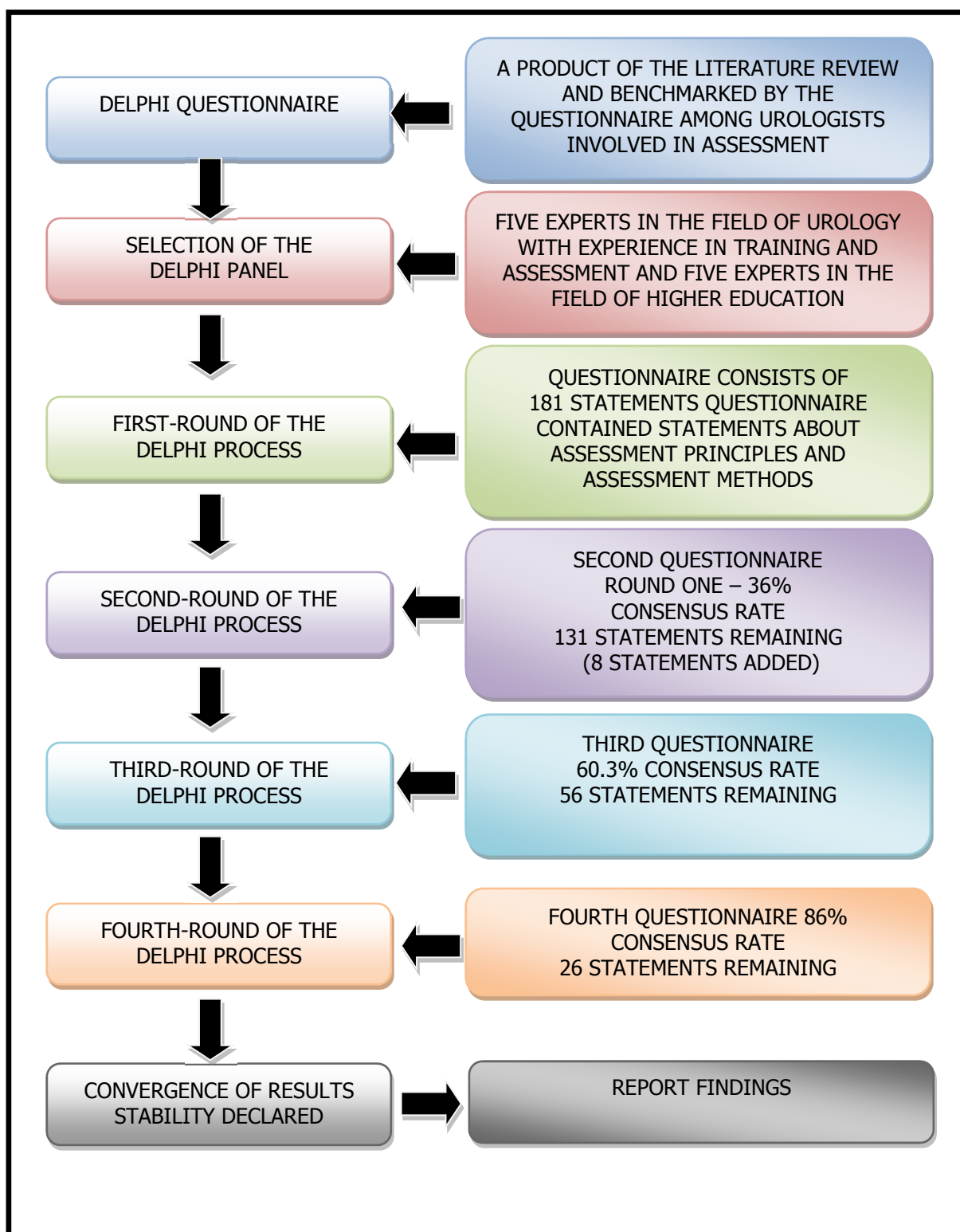


FIGURE 5.1 FLOWCHART OF THE FOUR-ROUND DELPHI PROCESS APPLIED IN THIS STUDY [This diagrammatic presentation was compiled by the researcher, Wentzel (2012), as part of the Ph.D. research project].

5.4 DESCRIPTION AND DISCUSSION OF THE DIFFERENT ROUNDS OF THE DELPHI PROCESS

5.4.1 First round of the Delphi process

In the first round of the Delphi process the statements of the proposed assessment model were used as a template for the Delphi questionnaire. The different subdivisions that were used in the Delphi questionnaire will be discussed briefly. Thereafter an analysis of the responses will be done, followed by a discussion of the outcomes of Round One of the Delphi process.

5.4.1.1 *The measuring instrument*

A letter of introduction (Appendix D1) accompanied the first round of the Delphi process. In this letter information about the structure of the Delphi process was given to the participants and the procedure of the Delphi process was explained to them. Specific instructions about how the questionnaire should be completed were given to the members of the panel.

The first round of the Delphi questionnaire (Appendix D2) consisted of nine sections (Sections A-I). In sections A-H the researcher made some statements about important aspects of Higher Education that the researcher considered for inclusion in the assessment model. This included purposes and principles of assessment, quality assurance in assessment, planning and construction of assessment and feedback on assessment. This part of the questionnaire consisted of 84 statements and the panelists were asked to consider each statement individually and indicate the importance according to the three-point Likert scale (Likert 1932:1-55) as follows:

- 1 = Essential (This criterion must **DEFINITELY BE INCLUDED** in the model)
- 2 = Useful (This criterion **CAN BE INCLUDED** in the model)
- 3 = Unnecessary (This criterion must **DEFINITELY BE EXCLUDED** from the model)

Section I deals with different methods that are currently used in the assessment of registrars in Urology. In the first part, the panelists were asked to judge factors associated with the compilation of a specific type of assessment. The panelists were asked to rate the time necessary to compile, mark and give feedback on a specific

assessment method by comparing the different assessment methods currently used in the assessment of Urology registrars with each other. In the literature concerning assessment techniques, there is not a specific time span attached to the compilation of, marking of and feedback on the different assessment techniques. Authors merely state that, for example, a multiple-choice question (MCQ) paper takes a long time to compile but a short time to mark. On the other hand, it is quite easy to formulate and compile essay questions but it takes a long time to mark them. Therefore, members of the Delphi panel were asked to compare the different assessment methods mentioned in Section I with each other as far as the time that is necessary to compile, mark and give feedback on is concerned. They were asked to use the following scale:

- 1 = Short
- 2 = Average
- 3 = Long.

In the second part the panelists were asked to rate the value of each of the assessment techniques in the assessment of the knowledge, skills, professional behaviour and clinical competence of the learners. They were asked to use the following scale:

- 1 = Good value
- 2 = Moderate value
- 3 = Little value.

In all sections, space was available where the panelists could make comments about the statement. These comments were included in the feedback questionnaire that was sent to all the members of the Delphi panel before the commencement of the next round. The researcher also indicated that the comments made by the Delphi panelists will be discussed in Chapter 6 of this study.

In the following paragraphs the layout of the Delphi process will be discussed section by section. This layout remained the same throughout the four rounds, although two new assessment methods were added in Round Two.

Section A was entitled **OUTCOMES-BASED EDUCATION AND ASSESSMENT IN HIGHER EDUCATION** and dealt with the assessors' knowledge of and attitude

towards outcomes-based education. It also tested the panelists' opinion about assessor education and training as part of Higher Education (HE). This section consisted of five statements (cf. Appendix D2 Section A).

Section B was entitled **PURPOSES OF ASSESSMENT** and dealt with the panelists' opinion about the most important purposes of assessment. This section consisted of 11 statements and included a question about different forms of assessment namely diagnostic, formative and summative assessment (cf. Appendix D2, Section B).

Section C was entitled **LEARNER ASSESSMENT** and dealt with certain important characteristics of assessment, including statement of learner outcomes and responsibilities at the start of every module, the role of moderation of both the learner and the assessor and the importance of assessment criteria and a responsible assessment committee. This section also contained several statements about the moderation process and the role of the moderator in both the moderation of the examination paper before assessment and of a sample of students' papers at the completion part of moderation. This section consisted of 12 statements (cf. Appendix D2, Section C).

Section D was entitled **QUALITY ASSURANCE IN ASSESSMENT**. There were 14 statements in this section and it dealt with the importance of communication with students about different aspects of the assessment process as well as the information about assessment that should be given to students in advance. Statements about the importance of the use of a memorandum and/or a scoring rubric and the value of an assessment committee were made in this section and the members of the Delphi panel were asked to judge the importance of these statements (cf. Appendix D2, Section D).

Section E was about **PRINCIPLES OF ASSESSMENT** and 13 different statements were made about the principles of assessment. This included statements about the validity, reliability, fairness and trustworthiness of assessment. The opinion of the panel members about integration and the use of different assessment techniques in assessment was evaluated in this section (cf. Appendix D2, Section E).

In Section F, **PLANNING AND CONSTRUCTING OF ASSESSMENT**, statements were made about the importance of pre-defined outcomes concerning the assessment process, the testing of different cognitive levels during assessment and the assessment

of not only knowledge but also skills, attitudes and ethical values. The value of formative and summative assessment and the role of feedback during both formative and summative assessment were questioned in this section (cf. Appendix D2, Section F).

The title of Section G was **FEEDBACK ON ASSESSMENT AND THE USE OF ASSESSMENT RESULTS** and in this section statements about the methods of feedback, timing of feedback as well as the importance of feedback were made. Some statements about the analysis and interpretation of the assessment results were also mentioned here.

In Section H, **TYPES / STRATEGIES OF ASSESSMENT** the opinion of the panelists was asked about the importance of 10 different strategies of assessment and which of the types of assessment should be included in the assessment model.

The last section, Section I with the title **ASSESSMENT METHODS AND THEIR APPROPRIATENESS** dealt with different methods that are currently used in the assessment of registrars. Each method of assessment was discussed separately. In the first part, the panelists were asked to give their opinion on the time necessary to compile the questions, mark the questions and give feedback on the specific type of assessment. In the second part, the panelists were asked to rate the value of each type of assessment regarding different outcomes including the knowledge, skills, professional behaviour and clinical competence of the student. The panelists were asked to list the reason(s) why they would/would not choose each one of the assessment methods as part of their assessment strategy. There was also a general section where questions were asked that were raised as part of the analysis of the questionnaire survey (cf. Chapter 4). These questions were specifically connected to a specific assessment method and therefore differ from one assessment method to the other.

5.4.1.2 Analysis of the responses of Round One of the Delphi process

After receiving the responses from the Delphi participants, the responses were analysed by the researcher. The frequency of the responses to all the statements that were given according to the 3-point Likert scale (Likert 1932:1-55) were calculated and

transferred to an Excel spread sheet. (Appendix D3). A colour scheme was used to indicate the results of the Delphi process Round One as follows:

Purple - Consensus was reached on that statement

Green - Consensus was almost reached

Yellow - Consensus was not reached

Red - Comments were made by a panelist(s).

Consensus was reached when 80% of the panelists agreed on a statement (Larson & Wissman 2000:46). All the statements where consensus was reached were excluded from the second round of the Delphi process.

5.4.1.3 Discussion of the results of Round One of the Delphi process

All the panelists returned the Delphi questionnaire, so the response rate in Round One was 100%. In Round One of the Delphi process consensus was reached on 59 out of a possible 181 statements (32, 6%). These statements were excluded from the Delphi questionnaire in Round Two.

On completion of the analyses, a letter of feedback was sent to all the panelists (Appendix D4). This letter was for their information only and they were told that they did not need to do anything with it. A week after the letter of feedback, the researcher sent the feedback questionnaire of the Delphi process Round One to all the panelists (Appendix D5). In the feedback questionnaire, all the statements where consensus had been reached were shaded (cf. Appendix D5). Comments that were made by the panelists were included in the feedback questionnaire for the information of other panelists. The researcher indicated to the panelists that all the comments that were made would be addressed in the final chapter of the research project and therefore the researcher had not included a response to their comments in the feedback letter or feedback questionnaire. The enquiries and questions raised by the participants in Round One were addressed by the researcher in the feedback questionnaire. The researcher's comments were indicated below the participants' enquiry/question in bold as follows: **Answer SWW**. This was done to help the panelists clarify their uncertainties about these statements in the following rounds. In the statements where consensus was not reached, the numerical values that were awarded to the different options for that specific statement were included. These values were shown in red.

Certain participants in the Delphi process did not answer all the questions; this explained why some statements had fewer than ten responses.

There were some comments that indicated that more methods of assessment needed to be included in the questionnaire; therefore, two extra methods of assessment were added in Section I, namely Section I, Questions 11 and 12 (Appendix E2).

5.4.2 Second round of the Delphi process

In the following sections Round Two of the Delphi process will be discussed. The first section will deal with the measuring instrument that was used in the second round. Thereafter, an analysis of the results will be presented followed by a discussion of the results of Round Two of the Delphi process.

5.4.2.1 *The measuring instrument*

A letter of explanation (Appendix E1) preceded the questionnaire on the Delphi Process Round Two that was sent to the panelists. In this letter an explanation was given to the panelists about the procedure that should be followed to complete the questionnaire. This did not differ from the procedure that was followed in Round One of the Delphi process. The questionnaire for the Delphi process Round Two accompanied the letter of introduction (Appendix E2). The panelists were asked to complete ALL the questions if possible and were encouraged to add their comments in the blank spaces or to add additional comment on an A4 folio page if necessary.

The individual responses of the panelists in Round One were added to the questionnaire for the Delphi process Round Two (cf. Appendix E2). This was indicated in red just above the space that was provided to indicate their preferred option for that particular statement. It was done as follows:

		1	2	3	Comments
1.	An assessor has to have knowledge of current changes in higher education	7	3	0	

In Round Two, statements about two new assessment methods were added in Section I of the Delphi questionnaire. This was done after the researcher had studied the comments that were added in Round One of the questionnaire. The two new

assessment methods were included in Section I; assessment methods and the appropriateness thereof. Two new methods of assessment were included, namely:

- Mini- CEX (Mini Clinical Evaluation Exercise) and
- Direct Observation of Procedural Skills (DOPS).

The panelists were provided with a short description of the assessment method and a website where more information could be obtained (cf. Appendix D2). The opinion of the panelists was asked about the value of these two assessment methods regarding the knowledge, skill, attitudes and clinical competency of students during the assessment process.

5.4.2.2 *Analysis of the responses of Round Two of the Delphi process*

The same process was followed by the researcher in that he analysed the responses from the panelists and transferred the results to an Excel spread sheet (Appendix E3). The frequency of the responses that was received according to the 3-point Likert scale (Likert 1932:1-55) was calculated and transferred to the Excel spread sheet (cf. Appendix E3). The following colour scheme was used to indicate the results of the Delphi process Round Two:

- Purple - Consensus was reached on that statement
- Green - Consensus was almost reached
- Yellow - Consensus was not reached
- Red - Comments were made by a panelist(s).

Consensus was reached when 80% of the panelists agreed on a statement (Larson & Wissman 2000:46). All the statements where consensus was reached were excluded from the third round of the Delphi process.

5.4.2.3 *Discussion of the results of Round Two of the Delphi process*

In Round Two of the Delphi process, nine out of the ten panelists returned their questionnaires before the deadline; therefore the response rate was 90%. In Round Two of the Delphi process consensus was reached on another 75 out of a possible 131 of the remaining statements (57%). In total consensus was reached on 114 out of a

possible 189 statements after the completion of Round Two (60,3%). There were more statements in Round Two than in Round One because of the addition of eight extra statements in Round Two.

On completion of the analysis, a letter of feedback was sent to all the panelists (Appendix E4). This letter was for their information only and they were told that they did not need to do anything with it. One week after the letter of feedback, the feedback questionnaire of the Delphi process Round Two was sent to all the panelists (Appendix E5). In the feedback questionnaire the statements where consensus had been reached were shaded (cf. Appendix E5). The researcher included comments that were made by the panelists for the information of the other members of the panel. It was indicated to the panelists that all the comments that were made would be addressed in Chapter 6 of the research project and therefore the researcher did not include responses to their comments in the feedback letter or feedback questionnaire. The enquiries and questions raised by the participants in Round Two were addressed by the researcher in the feedback questionnaire. The researcher's comments were indicated below the participants' enquiry/question in bold as follows: **Answer SWW**. This was done to help the panelists clarify their uncertainties about these statements in the following rounds. In the statements where consensus was not reached, the numerical values that were awarded by the participants to the different options for that specific statement were included. These values were shown in red. Certain participants in the Delphi process did not answer all the questions; this explained why some statements had fewer than nine responses.

5.4.3 Third round of the Delphi process

In the following sections, the third-round of the Delphi process will be discussed. In the first section, the measuring instrument that was used will be explained. Thereafter, an analysis of the results of Round Three of the Delphi process will be done and the section will be concluded by a discussion of the results of the Delphi process Round Three.

5.4.3.1 *The measuring instrument*

A letter of explanation (Appendix F1) preceded the questionnaire on the Delphi Process Round Three that was sent to the panelists. In this letter an explanation was given to the panelists about the procedure that should be followed to complete the questionnaire. This did not differ from the procedure that was followed in Round Two of the Delphi process. One week later, the questionnaire for the Delphi process Round Three was sent to the panelists (Appendix F2). The panelists were asked to complete ALL the questions if possible and were encouraged to add their comments in the blank spaces or to add additional comments on an A4 folio page if necessary.

The panelists were told that they were given another opportunity to reconsider their opinion on the remaining statements taking into account the anonymous feedback provided by the other panelists as well as some clarifications that were made by the researcher. All sections and statements were numbered exactly in the same way as in Round Two, except that the statements on which consensus was reached were omitted from Round Three.

The panelists were told that they were allowed to change their opinion after consideration of the anonymous input provided by their fellow participants. They were also allowed to make new comments in the space provided.

They were asked to use the following scale again:

1 = Essential (This criterion must **DEFINITELY BE INCLUDED** in the model)

2 = Useful (This criterion **CAN BE INCLUDED** in the model)

3 = Unnecessary (This criterion must **DEFINITELY BE EXCLUDED** from the model)

The statements on which consensus was not reached were included again. The numerical values of the responses of all the panelists were indicated underneath the scale in red (i.e. the number of participants who indicated a particular value of the scale).

For example:

		1	2	3	Comments
1.	An assessor has to have knowledge of current changes in higher education	7	3	0	

5.4.3.2 *Analysis of the responses of Round Three of the Delphi process*

The results of the completed Delphi questionnaire Round Three were analysed by the researcher and the results were transferred to an Excel spread sheet (Appendix F3). The frequency of the responses that were received according to the 3-point Likert scale (Likert 1932:1-55), were calculated and transferred to the Excel spread sheet (cf. Appendix F3). A colour scheme was used to indicate the results of the Delphi process Round Two as follows:

Purple - Consensus was reached on that statement

Yellow - Consensus was not reached

Red – Comments were made by panelist(s).

In Round Three the green statements were not included because the researcher felt that the panelists were approaching stability, which is reached when the responses of the panelists showed no movement over successive rounds (Linstone & Turoff 2002:18).

5.4.3.3 *Discussion of the results of Round Three of the Delphi process*

In Round Three of the Delphi process, the response rate of the panelists was 100% - which means that all the panelists returned the Delphi questionnaire in time for analysis. In Round Three, consensus was reached on another 29 out of a possible 56 statements (51,8%). After Round Three of the process, consensus had been reached on 163 out of a possible 189 statements which meant that consensus had now been reached on a total of 86% of the statements. In the remaining 26 statements there was very little change in the numerical values of the different statements compared to the previous rounds and the researcher felt that the process was approaching stability. According to Linstone and Turoff "A point of diminishing returns is reached after a few rounds. Most commonly, three rounds proved sufficient to attain stability in the responses; further rounds tended to show very little change and excessive repetition was unacceptable to participants" (Linstone & Turoff 1975:229). Another opinion is that "stability is where the similarity or central tendency of the participants is measured over the different rounds of the process" (Buck 1993:275).

On completion of Round Three of the Delphi process, a letter of feedback was sent to the participants (Appendix F4). This letter was for their information only and they were told that they did not need to do anything with it. In this letter, feedback was given about the consensus that was reached on a total of 86% of the statements after Round Three of the Delphi process. One week after the feedback letter, feedback on the Delphi questionnaire Round Three was sent to the panelists (Appendix F5).

In the feedback on the Delphi Round Three questionnaire, the researcher shaded all the statements where consensus had been reached. Comments that were made by the participants were included for the information of the other panelists. The researcher mentioned that he would respond to the comments made by the panelists in the final chapter of the thesis and therefore the researcher did not include his own response to their comments in the feedback questionnaire. The researcher addressed the enquiries and questions raised by the panelists in Round Three to the best of his abilities. His response to their question/enquiry was indicated in bold underneath the specific statement as follows: **Clarification SWW**.

For example:

		1	2	3	Comments
5.	The purpose of assessment is to classify or rank the performance of students. Clarification SWW: This is applicable to summative assessment	2	7	1	Aim more at the student's ability than ranking in a group

5.4.4 Fourth round of the Delphi process

In the following few sections the researcher will discuss the results of Round Four of the Delphi process. The researcher will start with a few words on the measuring instrument that was used in Round Four, followed by an analysis of the results of Round Four and will conclude this section with a discussion of the results of Round Four of the Delphi process.

5.4.4.1 *The measuring instrument*

A letter of feedback was sent to the panelists after the completion of Round Three of the Delphi process (cf. Appendix G1). In this letter the panelists were told that consensus was reached on another 29 out of a possible 56 statements (51,8%). At the

completion of Round Three, consensus had been reached on 163 out of a possible 189 of the statements made in Round Two of the Delphi process (86%).

The panelists were asked to reconsider their answers given in Round Three of the Delphi process and to decide if they wanted to abide by their answers. They were asked to indicate whether they wanted to change any answer given in the previous round by placing an X in the space provided underneath the given statement.

The researcher mentioned in the letter of feedback to the panelists that if he did not receive their responses by the deadline, he would assume that they did not want to change their responses of Round Three of the Delphi process (cf. Appendix G1).

The questionnaire for the Delphi process Round Four accompanied the letter of introduction (Appendix G2). The panelists were asked to complete ALL the questions if possible and were encouraged to add their comments in the blank spaces where necessary. In the statements where consensus had not been reached, the researcher included the numerical values that were awarded by the participants to the different options for that specific statement in Round Three of the Delphi process. These values were shown in red. An extra row was added where the panelist could indicate their choice on the statement provided.

For example:

		1	2	3
4.D.2	This method tests the candidate's attitude, insight and thought processes	3	6	1
			X	

5.4.4.2 Analysis of the responses of Round Four of the Delphi process

Responses from only two panelists were received before the deadline (Response rate 20%). Therefore, according to the information that was given to the panelists in the introduction letter to Round Four (cf. Appendix G1) the researcher accepted that the panelists did not want to change their response that was made in Round Three.

5.4.4.3 Discussion of the results of Round Four of the Delphi process

After analysis of the two responses and comparison thereof with the results that were received in Round Three, consensus could not be reached on the outstanding 26 statements in the questionnaire. With consensus on 86% of the statements in the questionnaire and convergence of the results in the last two rounds and according to the literature, the researcher declared stability on the remaining statements (Buck, Gross, Hakim & Weinblatt 1993:275; Linstone & Turoff 2002:18).

Table 5.1 provides a complete report on the statements where stability was reached. According to Linstone & Turoff stability is reached when: "A point of diminishing returns is reached after a few rounds. Most commonly, three rounds proved sufficient to attain stability in the responses; further rounds tended to show very little change and excessive repetition was unacceptable to participants" (Linstone & Turoff 1975:229). Another opinion on stability is that there is a move of the opinions of the researchers to a subjective level of central tendency (Dajani, Sincoff & Talley 1979:85). According to Buck *et al.* (1993:275) stability is where the similarity or central tendency of the participants is measured over the different rounds of the process.

The percentage of the panelists that had indicated a specific point on the Likert scale will be indicated in the table. Some of the questions were not answered by all the panelists, therefore, in some of the statements the percentages given to a specific option do not add up to a total of 100%.

TABLE 5.1 ROUND FOUR (FINAL ROUND) STABILITY STATEMENTS

**SECTION B:
THE PURPOSE OF ASSESSMENT**

Part 1: In this section certain statements are made about the purpose of assessment.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Stability statement
3.	The purpose of assessment is to give learners the opportunity to monitor their progress.	60%	40%	0%	Stability

5.	The purpose of assessment is to classify or rank the performance of students.	20%	70%	10%	Stability

SECTION D: QUALITY ASSURANCE IN ASSESSMENT

This section deals with issues related to quality assurance in assessment.

Look at the following statements regarding quality assurance in assessment.

Please indicate how important each of the following quality assurance mechanisms in assessment is according to the scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Stability statement
2.	Dates of assessment must be communicated to learners in advance	70%	30%	0%	Stability
5.	The learning content that will be covered in the assessment must be explained to the learners	60%	40%	0%	Stability
6.	The type of questions that will be asked must be discussed with learners	10%	60%	30%	Stability
12.	Memorandums must be an integral part of all assessments	40%	60%	0%	Stability

SECTION E: PRINCIPLES OF ASSESSMENT

This section deals with the principles of assessment.

Look at the following statements regarding certain principles of assessment.

Please indicate how important each of the principles of assessment is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Stability statement
2.	Assessment must focus on deep, active learning processes	50%	50%	0%	Stability
11.	The assessment methods should include a wide range of approaches	60%	40%	0%	Stability

SECTION I: ASSESSMENT METHODS AND THEIR APPROPRIATENESS

This section deals with assessment methods and appropriateness.

This section deals with different methods that are currently used in the assessment of registrars. Each method of assessment will be discussed separately. In the first part you will be

asked to judge factors associated with the compilation of the specific type of assessment. In the second part you will be asked to rate the value of each type of assessment as an important part of the assessment process.

General comments about the specific assessment method will be added in some cases. Please give your opinion about the statement made and add appropriate comments where necessary. Extra comments can be added on a loose piece of folio paper.

Question 1: Short questions

1B: Value of short questions

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Stability statement
1.B.3	The professional behaviour (including attitudes and values) of the learner	0%	70%	30%	Stability

Question 2: MCQ's (Multiple Choice Questions)

2B: Value of multiple choice questions

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Stability statement
2.B.2	The skills of the learner	0%	60%	30%	Stability

Question 3: Essay-type questions

3A: Compilation and marking of essay-type questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3	Stability statement
3.A.1	To compile the questions for this assessment method	10%	70%	10%	Stability

3B: Value of essay-type questions

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Stability statement
3.B.2	The skills of the learner	0%	60%	30%	Stability
3.B.3	The professional behaviour (including attitudes and values) of the learner	0%	60%	40%	Stability

3D: General Comments

Take a look at the following statements about essay-type questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Stability statement
3.D.2	This method test knowledge as well as comprehension, insight, logic, judgement and the ability to organise and communicate information	60%	40%	0%	Stability
3.D.5	This method exposes deficits in a candidate's knowledge	50%	50%	0%	Stability

Question 4: Case studies (paper)

4B: Value of paper case study questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Stability statement
4.B.2	The skills of the learner	40%	50%	0%	Stability

4D: General Comments

Take a look at the following statements about paper case study questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Stability statement
4.D.2	This method tests the candidate's attitude, insight and thought processes	30%	60%	10%	Stability

Question 5: Orals (Vivas)

5B: Value of questions for oral examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Stability statement
5.B.2	The skills of the learner	30%	60%	0%	Stability

Question 6: Clinical cases

6A: Compilation and questions for "real life" clinical cases

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3	Stability statement
6.A.1	To compile the questions for this assessment method	20%	50%	20%	Stability

Question 7: OSCE's (Objectively structured clinical examinations)

7A: Compilation of questions for OSCE examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3	Stability statement
7.A.2	To mark this assessment	30%	60%	0%	Stability

7B: Value of questions for OSCE examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Stability statement
7.B.2	The skills of the learner	30%	40%	20%	Stability
7.B.3	The professional behaviour (including attitudes and values) of the learner	10%	60%	30%	Stability

Question 9: Assignments

9A: Value of assignments

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Stability statement
9.A.4	The clinical competence of the learner	0%	50%	50%	Stability

Question 10: Scripts- / Mini-dissertations

10A: Value of scripts/mini-dissertations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Stability statement
10.A.2	The skills of the learner	0%	30%	60%	Stability

Question 11: Mini- CEX (Mini Clinical Evaluation Exercise)

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Stability statement
11.A.2	The clinical skills of the learner	60%	40%	0%	Stability
11.A.3	The professional behaviour (including attitudes and values) of the learner	60%	10%	30%	Stability
11.A.4	The clinical competence of the learner	60%	30%	10%	Stability

5.4.5 Summary of the results of the four round Delphi process

The Delphi process ran for four rounds after which stability was declared on the remaining 26 (14%) statements. In Round One consensus was reached on 36,2% of the statements and in Round Two consensus was reached on another 57,2% of the remaining 131 statements. In total consensus was reached on 60,3% of the 189 statements at the completion of Round Two. In Round Three consensus was reached on another 51,3% of statements that remained undecided after Round Two. That meant that after the completion of Round Three consensus had been reached on 163 out of a possible 189 statements (86%). In Round Four the panelists were asked to reconsider the statements they made in Round Three after they had studied the feedback on Round Three of the Delphi process. They were asked to return the Round Four Delphi questionnaire only if they wanted to change their opinion on the choice they had made in Round Three of the Delphi process. Only two panelists returned the questionnaire which indicated that the other eight panelists choose to abide by the response that they have given in Round Three of the Delphi process. After analysing the returned questionnaires of Round Four, the researcher realised that it would not change the results of the remaining questions where consensus was not reached upon in the previous rounds. Because of the convergence of the results, stability was declared by the researcher (cf. Table 5.1).

TABLE 5.2: THE OUTCOME OF THE DELPHI STUDY

SECTION A: OUTCOMES-BASED EDUCATION AND ASSESSMENT IN HIGHER EDUCATION

In this section certain statements are made about the knowledge, attitude and role of the assessor in outcomes-based education.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Outcome of Delphi process
1.	An assessor has to have knowledge of current changes in higher education	100	0	0	Consensus R2
2.	An assessor needs a positive attitude towards the changes in higher education	10	90	0	Consensus R3
3.	An assessor must be willing to learn about changes in higher education	100	0	0	Consensus R2

4.	An assessor must understand the differences between assessment and evaluation	100	0	0	Consensus R2
5.	Assessors must be formally trained in the principles of assessment	10	90	0	Consensus R2

SECTION B: THE PURPOSE OF ASSESSMENT

Part 1: In this section certain statements are made about the purpose of assessment.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Outcome of Delphi process
1.	The goal of assessment is to certify that a specific level of performance has been achieved	90	10	0	Consensus R1
2.	Assessment should be a learning experience for both learners and assessors	80	20	0	Consensus R3
3.	The purpose of assessment is to give learners the opportunity to monitor their progress	60	40	0	Stability R4
4.	Assessment can identify areas where adjustments in teaching and learning could be made	80	20	0	Consensus R3
5.	The purpose of assessment is to classify or rank the performance of students	20	70	10	Stability R4
6.	The purpose of assessment is to grade students' knowledge into a point on an arbitrary scale	90	0	10	Consensus R2
7.	The purpose of assessment is to select the best available students	100	0	0	Consensus R2
8.	The purpose of assessment is to judge the readiness of students to enter the next phase of a programme	80	20	0	Consensus R1

Part 2: Different forms of assessment are used as part of outcomes-based education.

Please indicate how important each of the following types of assessment is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Outcome of Delphi process
1.	Diagnostic Assessment	85	15	0	Consensus R1
2.	Formative Assessment	85	15	0	Consensus R1
3.	Summative Assessment	85	15	0	Consensus R1

SECTION C: LEARNER ASSESSMENT

This section deals with issues related to mechanisms for learner assessment in order to ensure good assessment practices.

Take a look at the following statements regarding mechanisms for learner assessment.
Please indicate how important each of the statements is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Outcome of Delphi process
1.	The outcome for every student in a programme should be equivalent and clearly stated	80	20	0	Consensus R2
2.	The assessment process must be objective	100	0	0	Consensus R2
3.	Learner responsibilities must be defined	100	0	0	Consensus R2
4.	Assessment criteria must be available for every one of the abilities/skills that will be assessed	90	10	0	Consensus R2
5.	An assessment task force/committee that includes experts must be appointed	20	80	0	Consensus R2
6.	Assessment must be integrated and must cover all aspects of the learning programme	20	80	0	Consensus R3
7.	Assessment must be uniform across all subjects/modules	20	80	0	Consensus R3
8.	Assessors must receive formal training in assessment methodology in terms of Higher Education Quality Control requirements for assessors	20	80	0	Consensus R2
9.	Assessment must be moderated by appropriately trained moderators with specific expertise in the learning area	80	20	0	Consensus R2
10.	Learner assessments must be moderated to ensure that the required standards of assessment are reached	100	0	0	Consensus R2
11.	Learner assessments must be moderated to ensure that the assessment is appropriate	100	0	0	Consensus R2
12.	Learner assessments must be moderated to ensure that the assessment is fair	80	20	0	Consensus R1

SECTION D: QUALITY ASSURANCE IN ASSESSMENT

This section deals with issues related to quality assurance in assessment.

Look at the following statements regarding quality assurance in assessment.

Please indicate how important each of the following quality assurance mechanisms in assessment is according to the scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Outcome of Delphi process
1.	Learners must be assessed more than once per module (various assessments)	80	20	0	Consensus R3
2.	Dates of assessment must be communicated to learners in advance	70	30	0	Stability R4
3.	Learners must have enough opportunity to prepare for assessment	80	20	0	Consensus R3
4.	Learners must know how the weight of the individual parts of the assessment is determined	90	10	0	Consensus R2
5.	The learning content that will be covered in the assessment must be explained to the learners	60	40	0	Stability R4
6.	The type of questions that will be asked must be discussed with learners	10	60	30	Stability R4
7.	Colleagues must be consulted with regards to judgement on the outcomes that are covered	0	100	0	Consensus R3
8.	Colleagues must be consulted with regards to judgement on the assessment process	10	80	10	Consensus R2
9.	Procedures must be in place to ensure reliability in assessment	100	0	0	Consensus R1
10.	Procedures must be in place to ensure validity of assessment	100	0	0	Consensus R1
11.	Procedures must be in place to ensure trustworthiness in assessment	90	10	0	Consensus R1
12.	Memorandums must be an integral part of all assessments	40	60	10	Stability R4
13.	A scoring rubric (with predefined criteria) should be used to ensure objectivity and consistency	80	20	0	Consensus R3
14.	A policy on assessment must be available and must be followed closely as part of all assessments	100	0	0	Consensus R2

SECTION E: PRINCIPLES OF ASSESSMENT

This section deals with the principles of assessment.

Look at the following statements regarding certain principles of assessment.

Please indicate how important each of the principles of assessment is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Outcome of Delphi process
1.	Assessment must be an integral part of learning	100	0	0	Consensus R1
2.	Assessment must focus on deep, active learning processes	50	50	0	Stability R4

3.	Higher order cognitive skills must be assessed as part of the assessment process	90	10	0	Consensus R2
4.	The pre-defined assessment purposes should determine the assessment methods that will be used	90	10	0	Consensus R2
5.	Relevant assessment criteria should be applied and must be available to learners	80	20	0	Consensus R2
6.	The assessment process should be reliable	90	10	0	Consensus R1
7.	The assessment process should be transparent	80	20	0	Consensus R1
8.	The assessment process should be fair	100	0	0	Consensus R1
9.	Procedures must be in place that ensures validity of assessment	80	20	0	Consensus R1
10.	The assessment workload of examiners should be realistic	80	20	0	Consensus R1
11.	The assessment methods should include a wide range of approaches	60	40	0	Stability R4
12.	Feedback must be given to learners after assessment to support the learning process	100	0	0	Consensus R2
13.	Quality assurance procedures must be in place and must be strictly adhered to	100	0	0	Consensus R2

SECTION F: PLANNING AND CONSTRUCTING OF ASSESSMENT

This section deals with issues related to the planning and constructing of assessment.

Look at the following statements about the planning and constructing of the assessment process.

Please indicate the importance of each factor in the planning and construction of assessment according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Outcome of Delphi process
1.	Clear stated outcomes must be formulated as part of the construction of assessment	90	10	0	Consensus R2
2.	The capabilities that must be assessed must be identified	100	0	0	Consensus R2
3.	The skills that must be assessed must be identified	80	20	0	Consensus R1
4.	The assessment methods must be in agreement with the knowledge, skills and attitudes outcomes that was defined	90	10	0	Consensus R2
5.	Different levels of knowledge and skills must be assessed (e.g. according to Bloom's taxonomy)	90	10	0	Consensus R1
6.	A variety of assessment methods must be used	20	80	0	Consensus R3
7.	Both formative and summative assessment must be included in the assessment	100	0	0	Consensus R1

8.	Self-assessment must be part of the assessment process	20	80	0	Consensus R3
9.	Assessment criteria must be developed and used during assessment	20	80	0	Consensus R1
10.	Criteria-referenced assessment methods should be used during assessment	10	90	0	Consensus R2
11.	Norm-referenced assessment methods should be used during assessment	0	90	10	Consensus R1
12.	Students' results must be analysed and interpreted by both the assessor and the moderator	80	20	0	Consensus R3
13.	Feedback must be planned beforehand and must be given shortly after conclusion of assessment (within a pre-arranged timeframe)	90	10	0	Consensus R2
14.	The feedback method must be planned before commencement of the assessment process	90	10	0	Consensus R3

SECTION G: FEEDBACK ON ASSESSMENT AND THE USE OF ASSESSMENT RESULTS

This section deals with issues related to feedback on assessment and the use of assessment results.

The following statements deal with the process of feedback and the use of the assessment results.

Please indicate how important each of the statements is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Outcome of Delphi process
1.	The assessment results must be analysed comprehensively	100	0	0	Consensus R2
2.	The assessment results must be interpreted correctly	90	10	0	Consensus R1
3.	Feedback must be given in a timely fashion after an assessment	90	10	0	Consensus R1
4.	Various methods must be used to give feedback	10	80	10	Consensus R1
5.	Learners must be informed about the goal and importance of feedback	85	15	0	Consensus R2

SECTION H: TYPES / STRATEGIES OF ASSESSMENT

This section deals with different types / strategies of assessment.

Look at the following types and strategies of assessment.

Please indicate how important each of the following types and strategies of assessment are according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.
Please add your comments where you feel that it is necessary.
Extra comments can be added on a loose piece of folio paper.

		1	2	3	Outcome of Delphi process
1.	Alternative assessment	0	100	0	Consensus R2
2.	Authentic assessment	80	20	0	Consensus R2
3.	Traditional assessment	0	80	20	Consensus R2
4.	Criterion-referenced assessment	80	20	0	Consensus R2
5.	Norm-referenced assessment	80	20	0	Consensus R2
6.	Diagnostic assessment	80	10	10	Consensus R1
7.	Formative assessment	20	80	0	Consensus R2
8.	Summative assessment	80	20	0	Consensus R1
9.	Performance-based assessment	80	20	0	Consensus R1
10.	Self-assessment	0	80	20	Consensus R2

SECTION I: ASSESSMENT METHODS AND THEIR APPROPRIATENESS

This section deals with assessment methods and appropriateness.

This section deals with different methods that are currently used in the assessment of registrars. Each method of assessment will be discussed separately. In the first part you will be asked to judge factors associated with the compilation of the specific type of assessment. In the second part you will be asked to rate the value of each type of assessment as an important part of the assessment process. General comments about the specific assessment method will be added in some cases. Please give your opinion about the statement made and add appropriate comments where necessary. Extra comments can be added on a loose piece of folio paper

Question 1: Short questions

1A: Compilation and marking of short questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3	Outcome of Delphi process
1.A.1	To compile the questions for this assessment method	10	80	10	Consensus R1
1.A.2	To mark this assessment	20	80	0	Consensus R2
1.A.3	To give feedback on this assessment method	0	90	0	Consensus R3

1B: Value of short questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
1.B.1	The knowledge of the learner	80	20	0	Consensus R1
1.B.2	The skills of the learner	10	80	10	Consensus R2
1.B.3	The professional behaviour (including attitudes and values) of the learner	0	70	30	Stability R4
1.B.4	The clinical competence of the learner	10	80	10	Consensus R2

1C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

1D: General Comments

Take a look at the following statements about short questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Outcome of Delphi process
1.D.1	This method of assessment tests knowledge over a wide area of the subject	90	10	0	Consensus R1
1.D.2	This method is a good test of factual knowledge	100	0	0	Consensus R1
1.D.3	This method of assessment is time consuming to compile and therefore not used by many assessors	10	0	90	Consensus R2

Question 2: MCQ's (Multiple Choice Questions)

2A: Compilation and marking of multiple choice questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3	Outcome of Delphi process
2.A.1	To compile the questions for this assessment method	0	0	100	Consensus R1
2.A.2	To mark this assessment	100	0	0	Consensus R1
2.A.3	To give feedback on this assessment method	10	90	0	Consensus R1

2B: Value of multiple choice questions

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
2.B.1	The knowledge of the learner	90	10	0	Consensus R1
2.B.2	The skills of the learner	0	75	25	Stability R4
2.B.3	The professional behaviour (including attitudes and values) of the learner	0	20	80	Consensus R1
2.B.4	The clinical competence of the learner	0	90	10	Consensus R2

2C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

2D: General Comments

Take a look at the following statements about MCQ's. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Outcome of Delphi process
2.D.1	This is a good method when large numbers of students are assessed because it is quick to mark	100	0	0	Consensus R1
2.D.2	It is a "puzzle for monkeys" and only useful in student factories where thousands of students are assessed at the same time	0	10	90	Consensus R2
2.D.3	This method is a good indicator of the extent of the student's knowledge	10	90	0	Consensus R2
2.D.4	It is a useless method except for educated guessing	0	0	100	Consensus R2

Question 3: Essay-type questions

3A: Compilation and marking of essay-type questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3	Outcome of Delphi process
3.A.1	To compile the questions for this assessment method	15	70	15	Stability R4
3.A.2	To mark this assessment	0	0	100	Consensus R2
3.A.3	To give feedback on this assessment method	0	100	0	Consensus R2

3B: Value of essay-type questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
3.B.1	The knowledge of the learner	0	100	0	Consensus R3
3.B.2	The skills of the learner	0	65	35	Stability R4
3.B.3	The professional behaviour (including attitudes and values) of the learner	0	60	40	Stability R4
3.B.4	The clinical competence of the learner	0	90	10	Consensus R1

3C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

3D: General Comments

Take a look at the following statements about essay-type questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Outcome of Delphi process
3.D.1	This assessment method is a good indicator of academic knowledge and a structured thought process	80	20	0	Consensus R3
3.D.2	This method tests knowledge as well as comprehension, insight, logic, judgement and the ability to organise and communicate information	60	40	0	Stability R4
3.D.3	This method tests a candidate's ability to organise his/her knowledge	80	20	0	Consensus R2
3.D.4	This method is quick to mark	0	20	80	Consensus R1
3.D.5	This method exposes deficits in a candidate's knowledge	50	50	0	Stability R4

Question 4: Case studies (paper)

4A: Compilation of paper case study questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3	Outcome of Delphi process
4.A.1	To compile the questions for this assessment method	0	0	100	Consensus R2
4.A.2	To mark this assessment	0	90	10	Consensus R2
4.A.3	To give feedback on this assessment method	0	100	0	Consensus R2

4B: Value of paper case study questions

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
4.B.1	The knowledge of the learner	20	80	0	Consensus R3
4.B.2	The skills of the learner	45	55	0	Stability R4
4.B.3	The professional behaviour (including attitudes and values) of the learner	0	90	10	Consensus R2
4.B.4	The clinical competence of the learner	10	80	10	Consensus R2

4C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

4D: General Comments

Take a look at the following statements about paper case study questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Outcome of Delphi process
4.D.1	This method tests integration of facts and gives the candidate a good working knowledge	10	80	10	Consensus R2
4.D.2	This method tests the candidate's attitude, insight and thought processes	30	60	10	Stability R4
4.D.3	This method tests the candidate's ability to manage "real-life" situations	90	10	0	Consensus R2
4.D.4	This method is a good indicator of a structured thought process and the candidate's approach to clinical problems	80	20	0	Consensus R1

Question 5: Orals (Vivas)

5A: Compilation of questions for oral examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3	Outcome of Delphi process
5.A.1	To compile the questions for this assessment method	90	10	0	Consensus R2
5.A.2	To mark this assessment	80	20	0	Consensus R1
5.A.3	To give feedback on this assessment method	20	80	0	Consensus R2

5B: Value of questions for oral examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
5.B.1	The knowledge of the learner	80	20	0	Consensus R1
5.B.2	The skills of the learner	35	65	0	Stability R4
5.B.3	The professional behaviour (including attitudes and values) of the learner	20	80	10	Consensus R2
5.B.4	The clinical competence of the learner	80	0	20	Consensus R2

5C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

5D: General Comments

Take a look at the following statements about questions for oral examinations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Outcome of Delphi process
5.D.1	This method is a test of the candidate's communication skills and structured thought process under pressure	80	20	0	Consensus R1
5.D.2	This method can test in-depth knowledge over a wide range of subjects in rapid manner	80	20	0	Consensus R2
5.D.3	This method tests the candidate's ability to "argue" their case with the assessor	80	20	0	Consensus R1

Question 6: Clinical cases

6A: Compilation and questions for "real life" clinical cases

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3	Outcome of Delphi process
6.A.1	To compile the questions for this assessment method	25	50	25	Stability R4
6.A.2	To mark this assessment	90	10	0	Consensus R1
6.A.3	To give feedback on this assessment method	15	85	0	Consensus R3

6B: Value of "real life" clinical cases

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
6.B.1	The knowledge of the learner	90	10	0	Consensus R3
6.B.2	The skills of the learner	85	15	0	Consensus R3
6.B.3	The professional behaviour (including attitudes and values) of the learner	90	10	0	Consensus R2
6.B.4	The clinical competence of the learner	90	10	0	Consensus R1

6C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

6D: General Comments

Take a look at the following statements about questions for "real life" clinical situations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Outcome of Delphi process
6.D.1	This method tests integration of knowledge	90	10	0	Consensus R1
6.D.2	By using this method examiners can objectively observe a candidate's ability to completely examine a patient	90	10	0	Consensus R1
6.D.3	This method is the best way to test ability to apply knowledge necessary for problem-solving in "real life" situations	90	10	0	Consensus R1
6.D.4	This method is critical for the evaluation of a candidate's clinical skills	80	20	0	Consensus R2

Question 7: OSCE's (Objectively structured clinical examinations)

7A: Compilation of questions for OSCE examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3	Outcome of Delphi process
7.A.1	To compile the questions for this assessment method	0	20	80	Consensus R2
7.A.2	To mark this assessment	35	65	0	Stability R4
7.A.3	To give feedback on this assessment method	0	100	0	Consensus R2

7B: Value of questions for OSCE examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
7.B.1	The knowledge of the learner	80	20	0	Consensus R1
7.B.2	The skills of the learner	35	45	20	Stability R4
7.B.3	The professional behaviour (including attitudes and values) of the learner	15	70	15	Stability R4
7.B.4	The clinical competence of the learner	20	80	0	Consensus R2

7C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

7D: General Comments

Take a look at the following statements about OSCE questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Outcome of Delphi process
7.D.1	This method is useful to cover large areas of the study field in a short time	90	10	0	Consensus R1

7.D.2	This method can test areas of clinical importance that cannot be tested in a clinical case scenario or in an oral examination	90	10	0	Consensus R2
7.D.3	This method can test a candidate's ability to deal with a clinical scenario in the absence of a patient	80	10	10	Consensus R2
7.D.4	This method can test a candidate's ability to apply their knowledge in practical situations	80	10	10	Consensus R2

Question 8: Portfolios

8A: Value of portfolios

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
8.A.1	The knowledge of the learner	0	90	10	Consensus R1
8.A.2	The skills of the learner	0	90	10	Consensus R2
8.A.3	The professional behaviour (including attitudes and values) of the learner	0	80	20	Consensus R1
8.A.4	The clinical competence of the learner	0	80	20	Consensus R1

8B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

8C: General Comments

Take a look at the following statements about portfolios. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Outcome of Delphi process
8.C.1	This method may be useful to determine if a candidate has sufficient experience to be admitted to the final formative examination	80	20	0	Consensus R3
8.C.2	Essential for formative assessment of candidates	20	80	0	Consensus R2
8.C.3	This method is currently very fashionable but of doubtful value	0	80	20	Consensus R3

Question 9: Assignments

9A: Value of assignments

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
9.A.1	The knowledge of the learner	10	80	10	Consensus R1
9.A.2	The skills of the learner	0	20	80	Consensus R2
9.A.3	The professional behaviour (including attitudes	0	20	80	Consensus R3

	and values) of the learner				
9.A.4	The clinical competence of the learner	0	50	50	Stability R4

9B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

9C: General Comments

Take a look at the following statements about assignments. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Outcome of Delphi process
9.C.1	This method is of no use in assessment	10	10	80	Consensus R1
9.C.2	This method may be a useful learning exercise if used in the correct scenario (like as part of the academic programme of the department)	90	0	10	Consensus R1

Question 10: Scripts- / Mini-dissertations

10A: Value of scripts/mini-dissertations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
10.A.1	The knowledge of the learner	15	85	10	Consensus R2
10.A.2	The skills of the learner	0	35	65	Stability R4
10.A.3	The professional behaviour (including attitudes and values) of the learner	0	15	85	Consensus R2
10.A.4	The clinical competence of the learner	0	80	20	Consensus R4

10B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

10C: General Comments

Take a look at the following statements about scripts / mini-dissertations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3	Outcome of Delphi process
10.C.1	Research is an integral part of post-graduate education	100	0	0	Consensus R1
10.C.2	It is essential for a candidate to learn about and apply the principles of research	90	10	0	Consensus R1

10.C.3	A dissertation helps the student to learn about the principles of research methodology	100	0	0	Consensus R2
10.C.4	This method teaches the student how to critically evaluate the available literature about any given subject	80	20	0	Consensus R2
10.C.5	This method gives the student the opportunity to contribute to the solution of problems and the expansion of knowledge in their field of research	80	10	10	Consensus R3

Question 11: Mini- CEX (Mini Clinical Evaluation Exercise)

11A: Value of Mini-CEX

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
11.A.1	The knowledge of the learner	20	80	0	Consensus R2
11.A.2	The clinical skills of the learner	60	40	0	Stability R4
11.A.3	The professional behaviour (including attitudes and values) of the learner	60	10	30	Stability R4
11.A.4	The clinical competence of the learner	60	30	10	Stability R4

11B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 12: Direct Observation of Procedural Skills (DOPS)

12A: Value of DOPS

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3	Outcome of Delphi process
12.A.1	The knowledge of the learner	15	85	0	Consensus R2
12.A.2	The clinical skills of the learner	85	15	0	Consensus R2
12.A.3	The professional behaviour (including attitudes and values) of the learner	80	10	10	Consensus R3
12.A.4	The clinical competence of the learner	85	0	15	Consensus R2

5.4.6 Discussion on the outcome of the Delphi process

In the first eight sections (Sections A-H) questions were asked about certain aspects of Outcomes-Based Education (OBE) and the role thereof in Health Sciences Education (HSE). In this section, the panelists were presented with certain statements and were asked to rate these statements as essential, useful or unnecessary as part of the planned assessment model. In Table 5.2 the percentages of the panelists that

indicated the specific statement as essential, useful or unnecessary as part of the assessment model were given. The researcher also indicated if consensus was reached on that specific statement or if stability was declared on the statement.

Column 1= This column indicates the percentage of panelists who felt that the statement is essential and should definitely be included in the assessment model.

Column 2= This column indicates the percentage of panelists who felt that the statement is useful and could be included in the assessment model.

Column 3= This column indicates the percentage of panelists who felt that the statement is unnecessary and could be excluded from the assessment model.

In this section, consensus was reached on 76 out of a possible 84 statements (90,4%). Consensus was reached on 58 statements for option 1 on the Likert scale (69%) and on 18 statements for option 2 (21.4%). In this section, in none of the statements consensus was reached on option 3, which indicated that consensus could not be reached that any of the statements in this section were deemed totally unnecessary for the assessment model.

In section I, certain statements were made about different methods of assessment and the opinion of the panelists was asked about these statements. Twelve different methods available for the assessment of postgraduate students were investigated in this section. There were two or three different subsections where the specific statements were made and investigated.

The first subsection made statements about the time that was needed for the compilation, marking and feedback of the specific assessment method. This subsection was only investigated for the first seven methods of assessment. Column 1 indicated the percentage of panelists that felt that a short time was needed to compile questions, mark questions or give feedback on the questions of that specific assessment method. Column 2 indicate the percentage of panelists that felt that an average amount of time and Column 3 the percentage that indicated that a long time was necessary to compile, mark or give feedback on the questions.

A total of 21 statements were made in this section. Consensus was reached on 18 out of a possible 21 statements in this subsection (85,7%). Consensus was reached on 4 out of 21 statements for Option 1 (19%) which meant that the panelists felt that a short time was needed to compile, mark or give feedback on the questions. Consensus was reached on 10 out of 21 statements for Option 2 (47,6%), which meant that the

panelists felt that an average time was needed to compile, mark or give feedback on the questions. Consensus was reached on 4 out of 21 statements for Option 3 (19%) which meant that the panelists felt that a long time was needed to compile, mark or give feedback on the questions.

In the second subsection of Section I, statements were made about the value of the specific assessment methods to rate the knowledge, skills, professional behaviour and clinical competence of the student. In this subsection, Column 1 indicated that the assessment method was of good value, Column 2 that it was of moderate value and Column 3 that it was of little value to judge the performance of the student on that particular aspect.

This subsection consists of a total of 48 statements. In total consensus was reached in 34 out of a possible 48 statements (70,8%). Consensus was reached on 11 out of 48 statements for Option 1 (22,9%), which meant that the panelists felt that the specific assessment method was of good value to use as an indicator of the student's knowledge, skills, professional behaviour or clinical competency. Consensus was reached on 19 of 48 statements for Option 2 (39,6%) which meant that the panelists felt that the specific assessment method was of moderate value to use as an indicator of the student's knowledge, skills, professional behaviour or clinical competency. Consensus was reached on 4 of 48 statements for Option 3 (8,3%) which meant that the panelists felt that the specific assessment method was of little value to use as an indicator of the student's knowledge, skills, professional behaviour or clinical competency.

In the last subsection, statements were made that were unique to the specific statement. Most of these statements were included because of comments and/or proposals made by the respondents to the questionnaire survey. In this subsection, Column 1 indicated the percentage of panelists that agreed with the statement made by the researcher, Column 2 indicated the percentage of panelists that were uncertain about the statements and Column 3 indicated the percentage of panelists that disagree with the statement made by the researcher.

A total of 37 statements were included in this section. Consensus was reached on 34 of a possible 37 statements (91,9%). Consensus was reached on 25 out of 37 statements for Option 1 (67,6%), which meant that the panelists agreed with the statement made by the researcher. Consensus was reached on 4 out of 37 statements for Option 2

(10,8%) which meant that the panelists were uncertain about the statement made by the researcher. Consensus was reached on 5 out of 37 statements for Option 3 (13,5%), which meant that the panelists disagreed with the statement made by the researcher.

The value of the Delphi process in the drafting of the assessment model for registrars will become clear in the next chapter when the assessment model as proposed by the researcher will be discussed.

5.4.7 Discussion on the stability statements in the Delphi process

In total, consensus could not be reached in 26 of a possible 189 statements in the Delphi questionnaire (13,75%). Stability was declared on these statements when there was no change in the percentages of the panelists between the third and the fourth rounds of the Delphi process.

In the first eight sections where statements were made about aspects of OBE and the role thereof in HSE, stability was declared on 8 of a possible 84 statements (9,5%). Of these 8 statements, 4 of the 8 favoured Option 1; this indicated that the statement was essential to be included in the assessment model. None of the statements where stability was declared favoured Option 3; this indicated that the statement was unnecessary to be included in the assessment model.

In the first subsection of Section I, which was about the time necessary for the compilation of questions, marking of questions and feedback on questions for the different assessment methods, stability was declared on 3 of a possible 21 statements. Of these statements, 2 out of 3 favoured Option 2, which meant that the panelists felt that an average amount of time was needed for the compilation of questions, marking of questions and feedback on questions for the specific assessment methods.

In the second subsection of Section I, where statements about the value of the different assessment methods were made, stability was declared on 14 of a possible 48 statements. Of these statements, 7 of 14 (50%) favoured Option 2, which meant that the panelists felt that the assessment method was of moderate value to judge the different aspects of a student's performance. In 3 of the 14 statements (21,4%), Option 1 was favoured which meant that the panelists favoured the option that the specific assessment method was of good value.

In the last subsection of Section I where statements unique to the different assessment methods were made, stability was declared on 3 out of a possible 37 statements. No specific trend could be found in these stability statements and in 2 of the 3 statements the percentages between options 1, 2 and 3 were 50:50:0.

5.5 CONCLUSION

In Chapter 5, the results of the four-round Delphi process were presented and discussed. The response rate of the panelists was quite good and in first and third rounds a response rate of 100% was achieved. In the second round, a response rate of 90% was achieved. In the fourth round, the researcher asked the panelists to respond if they wanted to change their opinion about the choice they had made about the statements in the previous round (cf. Appendix G1). As a result, the response rate was only 20% which can be ascribed to the fact that the other panelists were satisfied with their choices in the previous round.

Consensus was reached on 163 of a possible 189 statements (86%) at the completion of the analysis of Round Four of the Delphi process. Given the views of Linstone & Turoff (1979:85) Dajani *et al.* and Buck *et al.* (1993:275) stability was declared on the remaining 26 statements because convergences of the results were seen.

After the discussion of the Delphi process, the researcher is now ready to proceed to the next phase of the research project which is the development of an assessment model for registrars in Urology. Several interesting points came out during the analysis of the different rounds of the Delphi Process, which will assist the researcher in his pledge to develop the assessment model.

In the next chapter with the title ***An Assessment Model for the Training of Medical Postgraduate Students in Urology***, the researcher will discuss the proposed assessment model for registrars in Urology.

CHAPTER 7

CONCLUSION, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

7.1 INTRODUCTION

Readers of this thesis might be interested to know why the researcher has chosen to do research about assessment in Health Sciences Education (HSE). There is an urgent need to improve the ability of health professionals to ensure the quality and safety of healthcare to their patients. In this regard the predominant use of traditional assessment methods has a number of counterproductive consequences, for example, the use of experts in clinical medicine as teachers imposes a significant constraint because the cadre of health and safety experts is currently quite small (Cooke, Ironside & Ogrinc 2011:i79-i82). The previous statement describes the picture of healthcare in the United States of America. The question the researcher was interested in was the condition of assessment in HSE in our own country and more specifically in the researcher's field of expertise, Urology.

The quality of the specialists in Urology very much depends on the quality of training AND the quality of assessment these students receive during their training years. To train Urologists that are able to maintain and/or improve the quality and safety of healthcare in South Africa, the assessment of their training must be of a high quality and the assessors must ensure that it will be so. The assessments also need to be fair, reliable and transparent and all the candidates must have an equal chance to prove that they are good enough regardless of their gender, race, ethnic or cultural background.

There are worldwide shifts away from traditional assessment methods as the only way of assessment, towards the use of a combination of traditional and alternative assessment methods in order to enhance student learning (cf. Chapter 2, Section 2.4.4). This was discussed in detail in Chapter 2 of the thesis, but is repeated here because this statement was one of the main reasons this research project was undertaken by the researcher. The researcher felt that the use of a wider spectrum of assessment methods combined with knowledge and application of Higher Education principles in the assessment of the Urology registrar could benefit both the student and the teacher.

In this chapter, a summary of the previous chapters, which reflects the different phases of the study, will be provided. In addition, the value and implications as well as the limitations of the study will be discussed. The researcher will provide some recommendations and will conclude the chapter with final summative remarks on the research project. Please note that in this chapter, references that were provided in the other chapters earlier in the study will not be repeated, except for some exceptional cases.

7.2 PERSPECTIVES ON THE DIFFERENT CHAPTERS OF THE STUDY

7.2.1 Perspectives on Chapter 1

The title of Chapter 1, "Orientation to the Study" provided the reader with some background on the problem that was to be addressed in the study. The move towards the assessment of the student's level of understanding in a certain content area as well as the organization of a student's cognitive structures was mentioned.

The reader was introduced to some of the principles of Higher Education (HE) that can improve student learning, if used effectively. This included the value of different methods of assessment (both formative and summative assessment techniques) and the absolute necessity of provision of feedback to learners during their training. The researcher indicated that he would investigate different assessment methods in his quest to find the best possible assessment methods for the registrar in Urology.

With this short overview of the literature the researcher then expressed his concern about the lack of a universal assessment policy for registrars in Urology. The researcher explained the differences between the assessment methods and techniques in the two exit examinations, including the different assessment methods used and the difference in the implementation of the dissertation as an integral part of the final assessment opportunity. The researcher also pointed out the lack of formal training in HE for assessors and the fact that no qualification in HSE was necessary to become an assessor of registrars in Urology. The final concern was the flaws in quality assurance during the assessment and the fact that no official assessment policy or appeal procedure was in use by the College of Urologists.

The study was planned around three research questions that the researcher endeavoured to answer during the study. The first part of the study comprises a literature study with the aim to conceptualise and contextualise the problem. The questionnaire survey among Urologists would be used to identify the factors that play a role in the assessment of postgraduate students in Urology. The final part of the study was a Delphi process which helped the researcher to identify the criteria that were important to compile an assessment model for postgraduate training in Urology after validation by a panel of experts.

This was a quantitative and descriptive study with qualitative elements. The qualitative elements consisted of open-ended questions where the participants were encouraged to add their personal comments. A schematic overview of the study was provided in Figure 1.1. The researcher explained that the final assessment model would be made available to the Department of Urology (UFS), the School of Medicine (UFS) and the Academic Committee of the College of Urologists for discussion and possible implementation. Chapter 1 concluded with an arrangement of the report that outlined the content of each chapter.

7.2.2 Perspectives on Chapter 2

The title of Chapter 2 was "Postgraduate Assessment in Urology - The lack of a uniform model". The aim of the researcher with the review of the available literature was to give perspective on the current assessment model in Urology and to identify the important statements about assessment in HE that could be tested with the questionnaire survey among Urologists. The chapter started with an introduction which outlined the change in HE since the introduction of Outcomes-based Education (OBE) and mentioned that the assessment model for registrars in Urology needed to adapt to include modern assessment techniques and methods.

The researcher discussed the currently used assessment model for registrars in Urology by explaining the lack of coordinated formative assessment methods and feedback on these formative assessments. Assessors that are used during the assessment of postgraduate students in Urology do have vast experience in Urology and also some informal experience in assessment but no formal qualification in assessment is needed to become an assessor. The SPALHE course that provides training in assessment at the UFS may be one of the solutions that can be employed in

this regard (cf. Chapter 6, Section 6.2.3). The quality assurance process during the final assessment of registrars was another concern of the researcher and the role of the moderator as well as the use of memoranda and scoring rubrics were some of the issues that were to be investigated as part of the study. A final remark about the current assessment model was the fact that two exit examinations are available for qualification as an Urologist and the differences between the exit examinations were explained.

The shift in the assessment strategy and the reflection thereof in the changing perceptions of the nature of assessment and its main purposes were mentioned. The need to assess different levels of cognitive demand according to Bloom's taxonomy was highlighted. It is important that the assessor test cognitive demands other than the student's knowledge, including their problem-solving skills, application of their knowledge and the ability to break a problem into its constituent parts and establish the relationships between the different parts of the problem (cf. Chapter 2, Section 2.4.3.1). Although a much more difficult process, it is also important to test their performance at different levels of clinical skills, values and attitudes.

Different forms of assessment that can form part of the assessment of final-year students were discussed and the advantages and disadvantages of the different assessment methods were mentioned and compared with one another. The value of a combination of traditional and alternative assessment as part of an assessment model was outlined. The purposes of assessment seen from a student's and a teacher's viewpoint as well as the secondary purposes of assessment were analysed. The credibility of assessment methods are measured against certain principles of assessment including the fairness, reliability, validity and transparency of the assessment process.

The different methods that are currently used in the assessment of postgraduate students in Urology as well as other available assessment methods, including new developments in assessment like the Mini-Clinical Examination (Mini-CEX) and the Direct Observation of Procedural Skills (DOPS) were investigated by the researcher. The advantages and disadvantages of all the available assessment methods were analysed and the different levels of cognitive demand that could be tested by every assessment method observed. The methods that the researcher found to be most

applicable to use in the assessment of registrars in Urology were identified for inclusion in the questionnaire survey, the next phase of the study.

The role of feedback, was another aspect of the assessment process that was tested in the questionnaire survey amongst Urologists. The purpose of feedback is to motivate students and to inform them how well they have done and where and how they can improve their knowledge and practical and communication skills. Another advantage of feedback is that it promotes the dialogue between the student and his/her lecturer and assists the learner in bridging the gap between their current level of performance and the actual desired level of performance.

Quality assurance was another aspect of assessment that was explored in order to meet the requirements of the South African Qualification Authority (SAQA). SAQA requires both internal and external moderation to ensure that assessments are valid, fair and reliable. The functions of the external moderator and the role that he/she plays in the assessment process were discussed in detail in Chapter 2 (cf. Chapter 2, Section 2.4.11). The appeal process and the role of internal and external verification of the assessment process were other important aspects that should be in place as part of the assessment policy.

7.2.3 Perspectives on Chapter 3

In Chapter 3 with the title "Research design and methodology" the researcher explained the research methods that were used and how the different phases of the study interacted with each other to assist the researcher in developing the assessment model for postgraduate students in Urology. The most basic aim of research is to find a solution to a problem that leads to the development of theories that may predict future occurrence. The characteristics of research were investigated in order to allow the researcher to incorporate most of these characteristics in the research project (cf. Chapter 3, Section 3.1).

The research design in this study was mostly a quantitative approach but it did contain some elements of a qualitative approach with the use of some open-ended questions where the participant was encouraged to express their own views. Although there are several differences between qualitative and quantitative research, the researcher

believes that in this study the qualitative approach (open-ended questions) complemented the quantitative research to reach a better conclusion.

The research methods that were used in this study were a literature review which was described in the previous section, perspectives on Chapter 2. The aim of the literature review was to identify some variables around assessment of the postgraduate student in Urology that could be rephrased in a questionnaire survey among Urologists in South Africa. The questionnaire survey was used to obtain information about assessment in the opinion of the participants.

A questionnaire survey can be defined as a number of questions sent to participants to answer (cf. Chapter 3, section 3.3.2.1). There are several principles that can help a researcher develop a good questionnaire survey, including the use of a pilot study to identify the shortcomings of the questionnaire. The questionnaire survey used in this study contained some demographic data and also data on the experience of the participant in the assessment and training of postgraduate students. The participants in the questionnaire survey were asked their opinions about Outcomes-based Education (OBE) and some questions about the purposes and principles of assessment. The questionnaire also asked their opinion about the role of feedback, quality assurance and the value of different forms of assessment. Lastly, their opinion on the different available methods of assessment and the value thereof in the assessment of postgraduate students in Urology were asked for. The questionnaire survey and its results were discussed in Chapter 4 of this research project.

The next phase of the research project was the Delphi process where information gained by the literature review and the questionnaire survey was used to compile the questions of the Delphi questionnaire. In modern times the Delphi technique is used to finalise decisions that need to be made by experts (cf. Chapter 3, Section 3.3.3.1). In Chapter 3 the researcher discussed in detail the advantages and disadvantages of the Delphi technique and explained why the Delphi process was chosen to be the final research instrument in this study. The four-round Delphi process its results were discussed in detail in Chapter 5 of the research project.

Certain measures were taken to ensure the reliability, validity and trustworthiness of the study; these measures were discussed in Chapter 3. The study had to adhere to certain ethical considerations including the approval of the Ethics Committee of the

UFS and the use of informed consent by the participants in both the questionnaire and the Delphi process. The statistical analysis that was done by the Department of Biostatistics, UFS was done according to international standards and potential misinterpretation was minimised.

7.2.4 Perspectives on Chapter 4

In Chapter 4 entitled "Results and discussion of findings of questionnaire survey" an analysis of the results of the questionnaire survey was followed by a discussion of the standout findings of the survey. In the introduction of Chapter 4 the problems that were experienced to receive the completed questionnaires back from the respondents were briefly mentioned. This problem will be discussed in more detail in the section: "Limitations of the study".

The research questionnaire consisted of ten sections; in the first section, the demographic detail including the age, gender, years of experience and training of Urology registrars and the participant's current role in the department where they were working, was asked. The result, as discussed in detail in Chapter 4, was presented both in table and graphic format. The second section dealt with the knowledge of the participant about the changes in assessment according to OBE and their perception of its value.

The next few sections dealt with different aspects of assessment including the purposes and principles of assessment, the different forms of assessment and the planning and construction of assessment. The participants' opinion were asked about factors that might or might not play a role in assessment and thereafter they had to rate the importance of that specific factor as part of an assessment model. There were also sections that dealt with the quality assurance in assessment and the role of feedback in assessment. Again the participants were asked to indicate their opinion about feedback and quality assurance as well as its importance.

The last section dealt with different assessment methods that can be used in the assessment of the postgraduate student in Urology. In the questionnaire, different aspects of every assessment method were investigated, including the time needed to prepare questions for the different assessment methods, the time needed to mark the questions as well as the time needed to give feedback on the assessment method. The

appropriateness of each of the methods to assess the knowledge, clinical skills, professional behaviour and clinical competence of the students was investigated as well. A discussion of the results of the questionnaire survey was presented after the display of the results in table format.

As mentioned before, there were some open-ended questions included in the questionnaire survey where the participants were encouraged to add their comments about the questions in the questionnaire survey. These comments were mentioned and discussed at the end of Chapter 4. These comments were also included in the Delphi process that will be described in the next section and was the next step in the research project.

7.2.5 Perspectives on Chapter 5

In Chapter 5 entitled "Results and discussion of findings of the Delphi process", the four round Delphi process and its results were discussed. In the introduction of the chapter, the researcher mentioned that the literature review and the questionnaire survey among Urologists were used to formulate certain statements that were presented to a panel of experts (the Delphi panel) in order to obtain their opinion about the different statements. The Delphi process was discussed in more detail in Chapter 3 where the research methodology was discussed, but in essence the Delphi process is a method to define the opinions of a group of experts (the Delphi panel) in a certain area of interest. This method was found to be suitable to be employed in health sciences research (cf. Chapter 5, Section 5.2).

The ten members of the Delphi panel were selected by the researcher and his promoters and included five experts in Urology that also had widespread experience in the assessment and training of Urology registrars and five experts with proven knowledge of HE. The first step in the Delphi process was to write a letter of invitation to the Delphi panel and obtain their informed consent to participate in the study.

The Delphi process consisted of four rounds before stability was declared. In Round One of the Delphi process 189 statements were made by the researcher and were presented to the Delphi panel. In Section A-H the panelists were asked to rate each one of the statements according to the three-point Likert scale as essential, useful or unnecessary. In Section I the opinion of the panelists was asked about different

possible assessment methods that could be useful in the assessment of Urology registrars. In the first part the panelists were asked about the compilation of the questions of the different assessment methods, in the second part they were asked about the value of the assessment method to assess the knowledge, skills, professional behaviour and clinical competence of the students and in the third part their opinion on certain statements about a particular assessment method was asked.

At the completion of Round One of the Delphi process, consensus was reached on 36, 2% of the 189 statements. A letter of feedback was sent to all the Delphi panelists indicating the statements on which consensus was reached. The comments that the panelists made in Delphi Round One were included in the feedback letter and the researcher indicated that his response to the comments would be part of the final chapter of the thesis where the proposed assessment model was to be discussed. The researcher also addressed questions and enquiries made by the panelists in the feedback letter (cf. Chapter 5). About one week after the feedback letter was sent to the panelists, the Delphi process Round Two was sent to them. All the correspondence was done electronically by e-mail although the panelists had the option to return the completed questionnaires by fax. The same process was followed after each round of the Delphi process.

In total, consensus was reached on 114 out of a possible 189 statements after the completion of Round Two (60, 3%). After Round Three of the process consensus was reached on 163 out of a possible 189 statements which meant that consensus was now reached on a total of 86% of the statements. In Round Four of the Delphi process, the panelists were asked to reconsider their answers given in Round Three of the Delphi process and to decide if they wanted to abide by their answers. The researcher indicated in the letter of feedback that if their responses were not received by the deadline, the researcher would assume that they did not want to change the response that was given in Round Three of the Delphi process. Only two panelists returned their questionnaires before the deadline (response rate 20%). The responses received did not change the results of the remaining 26 statements and because convergence of the results was seen, stability was declared on these statements according to the literature (cf. Chapter 5, Section 5.4.5).

The value of the Delphi process in research and especially in HSE was experienced by the researcher during the four rounds of the Delphi process.

7.2.6 Perspectives on Chapter 6

Chapter 6 with the title "Assessment Model for the training of medical postgraduate students in Urology" actually summarised the whole research process and is the researcher's contribution towards the extensive library of literature about assessment in HE. At the onset of this research project, the aim of the study was to develop an assessment model for the training of medical postgraduate students in Urology. In Chapter 6 the researcher proposed the assessment model for registrars in Urology with the help of the literature review, the questionnaire among Urologists and the expertise of the Delphi process.

The first important change that needs to take place in the current assessment model in Urology is that the assessors need to have knowledge about the changes in HE. There should be a willingness to learn about the changes in HE and a positive attitude towards these changes. Training in the principles of assessment is an absolute necessity and should include both formal (generic) training and specific training that can be obtained with experience over time (cf. Chapter 6, Sections 6.2.1, 6.2.2 & 6.2.3).

The next part of Chapter 6 is about the proposed assessment policy for the Council of Urology. In this model the researcher proposed certain principles that should be adhered to and which can make the assessment model a successful one. Thereafter the researcher discussed the mechanisms in learner assessment that should be employed to assure good assessment practices including the availability of equivalent assessment criteria for all students. The importance of an assessment committee (AC) that has to play a role in the compilation of papers as well as the moderation thereof was stressed by the researcher. The AC also has to develop an appeal procedure that can be used during all examinations. The importance of training of the assessors and quality assurance of the assessment process was explained by the researcher. The use of memoranda and scoring rubrics as part of quality assurance of the assessment process was mentioned. The researcher stressed the fact that different cognitive levels of the student's performance should be assessed during the testing of their knowledge, skills and attitudes. Proposals on the role of feedback both during the formative and summative phases of assessment were made by the researcher.

In the final part of Chapter 6 the researcher proposed the assessment methods that should be used in the assessment of the knowledge, clinical skills, interpersonal relationships, attitudes and ethics of the postgraduate student in Urology. Some proposals about the methods that should be used during formative assessment included the effective use of the portfolio. The best available methods to be used in the final summative assessment opportunity were proposed by the researcher and reasons were given why the researcher felt that these methods should be used. The appeal process that should be included as part of the final assessment opportunity was proposed and some proposals about the assessment of the dissertation (research project), which is an essential part of the final assessment, were made. The researcher concluded with a summary and presented the assessment model in graphic format.

7.3 THE VALUE AND IMPLICATIONS OF THE STUDY

The aim of this study was to develop an assessment model for postgraduate students in Urology that would be fair and reliable, but also to make assessment a part of the learning process of the student. The changes that have taken place in HE have made it very important that assessors keep up with assessment practices and techniques to improve the assessment process. Assessment practices will change from time to time and more and better methods will become available as the years go by. Therefore the researcher indicated that assessment practices should be revised from time to time to keep up with the changing environment.

The assessment model will be presented to the Dean and the Executive Committee of the School of Medicine (SoM), Faculty of Health Sciences, University of the Free State (UFS). Their highly regarded input and criticism will be invaluable to the researcher and their opinion about the possible implementation of the model will be asked. The results of this study will be published in an accredited journal. If the College of Urologists show any interest in this research project, the results will be made available to them. It remains the prerogative of the College of Urologists to discuss the proposed model and decide on the proposal thereof.

The research project that was undertaken revisited the current assessment models used during the assessment of postgraduate students in Urology. The research indicated some areas where the current assessment model could be improved to the advantage of both the student and the assessors. The value of the research project is

that it will address most of the current shortcomings that were identified in the research project. The use of the proposed assessment methods during both the formative and the summative phases of the assessment process will add value to the assessment process because evaluation of the knowledge and skills of the postgraduate Urology students will be tested in a wide field of the curriculum. The assessment model can be a valuable tool for other Colleges in the CMSA if they find the model useful and adapt it to their specific needs.

The ultimate value of the study is that it can be used as a benchmark in assessment of postgraduate Urology students at national level and also as a quality control mechanism for Urology education. The researcher envisions that it may contribute to the bigger platform of HSE as it could be useful in other disciplines of clinical medicine.

7.4 LIMITATIONS OF THIS STUDY

Several limitations of the research project were identified by the researcher during reflection on the study. This was an honest (and sometimes painful) experience but it is the desire of the researcher to present in this section the shortcomings of the study as honestly as possible. The limitations of the study during the different phases of the study will be discussed separately. Some of the limitations were presented in Chapters 3 - 5 and will be mentioned here but not discussed as thoroughly as in the previous chapters.

7.4.1 Limitations during the literature study

At the onset of the research project the researcher was very enthusiastic, but completely ignorant about the extent of the study. The researcher, being a clinician that spent ten years in private Urology practice before returning to academic medicine, was unaware of the changes in HE and the implications thereof. The lack of experience during the literature review meant that the literature review had to be updated during the research project. The modifications that had to be made by the researcher wasted a lot of time but the impact was not only negative because the researcher had to go back to the literature time and again before he was satisfied with the literature review. The researcher felt that this helped him improve his knowledge about assessment in HE. The researcher had expressed the desire to be equipped with the same knowledge and understanding of the topic at start of the study that he had at the end of the study

on many occasions. The previous statement reiterates the fact that the researcher has learned extensively about assessment during this research project and feels much better equipped to be part of an assessment team at the end of this study. This knowledge was also included in the final product.

Another limitation of the study was the lack of published literature on the current assessment practices used to assess postgraduate students in Urology at both national and international level. The researcher had to rely on minutes of the College Council of Urology and some personal communication with leaders in assessment in the field of Urology to formulate the current assessment model. Even when the search was extended to look for assessment policies in Urology on an international level, very few publications applicable to this study could be found.

Assessment in HE seemed to be one of the topics that were very popular during the time that the researcher did his research. Hundreds of publications were available that could be used in the literature review and it was a daunting task to select the most appropriate titles. The researcher's lack of experience in this regard was another limitation because as the study progressed, the researcher found flaws in the literature research that had to be amended.

As mentioned, the researcher is primarily a physician and did not have any writing or computer-associated skills at the onset of the study. As the study progressed, the researcher's perception was that even this aspect did improve and words seemed to come more easily towards the end of the study. The wonderful world of information technology available on the Internet and other web-based programmes was another discovery made by the researcher during the study that was absent at the start thereof.

7.4.2 Limitations during the questionnaire survey

The literature study was held among Urologists with full-time appointments at the Departments of Urology at the different Universities as well as Urologists in private practice with an appointment at an academic Urology department. Eventually forty-three people were identified who met these requirements and the questionnaire survey was delivered to them electronically. Three of the questionnaires could not be delivered by e-mail and came back as "Unknown address", so in total forty respondents

received the questionnaire. The big problem that the researcher experienced was the lack of response of the identified respondents. The consent form was delivered with the questionnaire to the potential respondents and they had to return the signed consent form with the completed questionnaire (cf. Chapter 4, Section 4.1). Only thirteen respondents returned the signed consent form and the completed questionnaire.

Despite of several efforts by the researcher to obtain response from the Urologists that were solicited, the response rates remained very poor. The respondents were given six weeks to complete the survey and were reminded every two weeks about the questionnaire by e-mail. After the six weeks period, only six completed questionnaires were received and the researcher was forced to postpone the date for the completion of the survey. A letter indicating the importance of the questionnaire survey not only for the researcher but also for the Urology fraternity was compiled by the Dean of the Faculty of Health Sciences at the UFS, Prof. G.J. van Zyl and e-mailed to all the potential respondents (cf. Chapter 3). The respondents were given another six weeks to return the questionnaire and were reminded again about it by the researcher every two weeks. The researcher sent them e-mails and also reminded them in between by sending them text messages via their cellular phones. In spite of these measures, only thirteen completed questionnaires were received and the researcher was forced to continue his study after the analysis of the received questionnaires.

The researcher speculated about the cause of the poor response rate of the identified respondents and came up with a few possible explanations including the following:

- Urologists are busy people and spend a lot of time doing clinical work. In the questionnaire survey 100% of Urologists were involved with clinical work and 85% of them regarded their clinical work as top priority (cf. Chapter 4, Table 4.8).
- In comparison although 70% of respondents were involved in the administration of the department only 45% regarded administrative tasks as a high priority (cf. Chapter 4, Table 4.8).
- Although all the respondents were involved in assessment of postgraduate students during formative and summative assessment, only 23% of the respondents were involved in assessment of PhD or doctoral students (cf. Chapter 4, Table 4.10). It might be that some of the Urologists asked to participate in the

questionnaire survey did not feel themselves qualified enough to complete the questionnaire or simply did not realise the importance of the research.

- The approached urologists did not consider the subject as important enough to spend time on the completion of the questionnaires.
- There was no financial or other incentive for completing the survey.
- The researcher did not conduct personal interviews with the identified group of Urologists.

It is possible that the topic of assessment fell outside the field of interest of the most of the approached Urologists. An interesting extension of this study may be to conduct a questionnaire survey on a clinical topic in Urology and compare the response rates in that survey with the response rate in the questionnaire survey on assessment.

Thirty nine percent of the respondents were also the Heads of the Urology departments at the different academic institutions (cf. Chapter 4, Table 4.9). The reason for this phenomenon might be that the heads of the departments were involved with a higher load of administrative work and found it easier to spend an extra 30 minutes on a questionnaire or otherwise it might be their feeling of loyalty towards a colleague in the same position as them. Another option is that the Heads of Department had a bigger interest in the topic of assessment. The main limitation of surveys is that they do not provide any information about the demographics opinions of non-responders. Therefore the question about what the results of the survey would have been if a 100% response rate was achieved, remains unanswered.

7.4.3 Limitations during Delphi process

The first limitation experienced during the Delphi process was the fact that the first round of the Delphi process started very late, towards the end of the academic year. Although the researcher worked out a tight schedule with the panelists given only two weeks to respond to every round of the Delphi process, things did not quite work out that way and the researcher had to give the panelists more time to complete the Delphi process. That meant that the third round of the Delphi process was sent out at the end of November when some of the panelists were already going away on their annual holiday. The researcher was thus forced to give the panelists until the start of the new academic year in order to receive a full complement of panel answers from the Delphi panel.

In the first round of the Delphi process, some of the panelists did not respond to all the statements because they did not understand the statements or did not have enough knowledge about the statement to respond. In the feedback letter on the results of the Delphi process Round One the researcher responded to the questions/enquiries of the panelists (cf. Appendix D5).

The researcher was criticised by one of the participants about some of the statements in the Delphi questionnaire. The most problematic area seemed to be in section 1 where statements about the compilation of the different assessment methods were made. The panelists were asked to mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that they would need to compile the questions, mark the questions and give feedback on the questions for every one of the assessment methods. The panelists wanted to know what the researcher meant by short, average and long and asked for a better definition of the different terms. In the feedback letter on Round One of the Delphi process the researcher responded to the question of the panelist (cf. Appendix D5). The researcher explained that the idea was that the participant should compare the different assessment methods mentioned in this section with one another as far as compilation and marking of the assessment method goes. The researcher wanted the panelists to express their opinion on the time needed for this particular assessment method if compared to the other assessment models mentioned in Section I. The researcher stated that compilation of an essay question compared to MCQ's, might take a short time whereas marking of an essay question compared to MCQ's, takes a long time (cf. Appendix D5).

The researcher was of the opinion that the response would satisfy the particular panelist because there are no specific time frames available in the literature regarding for instance, the time necessary to compile questions for an assessment method. In the literature it is mentioned that the compilation of a MCQ paper is cumbersome and time consuming but marking is easy and quick (cf. Chapter 2, Section 2.4.9.5). In contrast the compilation of a well thought through essay question does not take much time, but its marking is cumbersome and time consuming (cf. Chapter 2, Section 2.4.9.5). The researcher also took up this matter with his promoter and co-promoter and both were satisfied that the response of the researcher did clear up the concern of the panelist.

Another limitation was the 26 statements in the Delphi questionnaire where consensus could not be reached on. The results of Round Four of the Delphi process were discussed in detail in Chapter 5 (cf. Chapter 5, Section 5.4.4.3) but the researcher realised that it would not change the results of the remaining statements where consensus was not reached in the previous rounds. In the feedback letter on Round Three the researcher asked the panelists to reconsider their opinions on the statements where consensus could not be reached. The researcher asked them to answer at a specific deadline if they want to reconsider their opinion on the previous mentioned statements (Appendix G1) and mentioned that he would assume that the non-responders did not want to change their opinion on those statements. Because the results of Round Four did not change the results from Round Three of the Delphi process, stability was declared (cf. Chapter 5, Table 5.1).

7.4.4 General limitations of the research project

Maybe the biggest challenge of this research project was the time that it took the researcher to complete the project. Some of the reasons for this could be attributed to the full programme of clinical and other duties of the researcher while others could be attributed to bad management of time on behalf of the researcher. In retrospect and with the knowledge gained by the researcher over the time period that it took to complete this research project, the researcher would have approached this research project in a completely different manner.

The best way to approach a major project like this is to make an effort to devote time to the research project for at least eight hours per week. If the project is approached in that way it would guarantee continuity and help the researcher to complete the project in a shorter time. However it must be said that the researcher did not realise the magnitude of time and effort needed to complete a PhD thesis. Time management is of extreme importance in a project like this and time should be allocated to the project almost on a daily basis to make the project successful. The lesson, the researcher learnt, was that time should be allocated on a regular basis to the research project in order to ensure continuity.

7.5 RECOMMENDATIONS

To conclude Chapter 7, the researcher wants to make some recommendations regarding the research project. This will deal firstly with the implementation of the

proposed assessment model and secondly with areas that were identified during the research project that could warrant further research.

7.5.1 Implementation of the assessment model

At the onset of this research project the ultimate goal of the researcher was to produce an assessment model for postgraduate students in Urology that was good enough to be accepted by the role players in the field of Urology in South Africa. It is, however, true that several role players are involved and the support of these role players as well as the authorities involved in assessment of Urology registrars will be needed to make this project a successful one.

The assessment model will be presented to the members of the Department of Urology, UFS and the Dean and Executive Committee of the School of Medicine, Faculty of Health Sciences, UFS for their opinion regarding the implementation of the assessment model. The researcher plan to publish the results of this study in an accredited journal. The results will be made available to the College council of Urologists if they are interested in the research project. The fellows of the council of Urologists will have the final decision about the possible implementation of parts of the assessment model in the current assessment model for registrars in urology.

As was pointed out in Chapter 4 when the responses of the questionnaire survey were analysed, there were many differences between Urologists about assessment principles and assessment methods. The researcher realises that it would be extremely difficult to satisfy all the Urologists involved in the assessment of postgraduate students in Urology. There is no doubt in the mind of the researcher that some changes in the currently used assessment model are necessary; this was the reason why the research project was undertaken by the researcher. The assessment model proposed by the researcher may not be the perfect one and some opposition may come from the Urology fraternity but the assessment model will indeed convince many sceptics about the necessity of changes in HSE and specifically in the assessment of postgraduate students in Urology.

Some of the proposals made by the researcher in Chapter 6 of the research project will need the cooperation of all the role players involved in assessment of postgraduate

students in Urology in order for it to be implemented successfully. These include the following:

- The importance of both generic and specific training for assessors in the principles and practice of assessment;
- The importance of specified outcomes and assessment criteria that must be made available to students and must be equivalent for all students;
- The role of the so called “mock” examinations as an opportunity for students to acquaint themselves with the environment of the final assessment opportunity;
- The appointment of the assessment committee and the role that the assessment committee must play in quality assurance of the examinations as well as the appeal procedure;
- The importance of internal and external moderation of the examination as well as the role of verification of the assessment process;
- The use of memoranda as part of quality assurance of the examination;
- The role of feedback during the formative and summative assessment of Urology registrars;
- The proposed assessment methods that should be used during formative and summative assessment; and
- The importance of the research project as students’ contribution towards the available literature in their field of study.

Some of these proposals made by the researcher can evoke opposition from certain role players involved in the assessment of postgraduate students in Urology. It is, however, not possible for the proposed assessment model to be implemented successfully without the support, cooperation and enthusiasm of all the role players. The researcher believes that the model can be adapted to suit the needs of other member Colleges of the CMSA but the basic framework presented in this model can act as a generic model for assessment of postgraduate students in all fields of medicine.

7.5.2 Possible further research projects

Several possible further research projects have been identified during the different phases of this research project. They include:

- Suitable training courses for assessors involved in the assessment of postgraduate students in the field of Urology. The CMSA will also reap the rewards if an assessment training module could be developed to be used by all the participant Colleges in order to improve the quality of assessment.
- Some research in the development of scoring rubrics to be used during the assessment of Urology registrars. The researcher did mention that it would be an exhaustive exercise to develop scoring rubrics for all the different assessment methods that are currently used in the assessment of Urology registrars. However, it is a fact that the use of scoring rubrics will improve the fairness, validity and reliability of the assessment methods.
- Possible ways of summative feedback after the final assessment opportunity. The researcher did mention the difficulty of summative feedback at the end of the final College examination in May and October (cf. Chapter 6, Section 6.3.5). Innovative research about the implementation of this type of feedback should be undertaken by the College of Urologists especially to address the concerns of the students that did not pass the final examination.
- Research on the ideal format of the research project as part of the final assessment of the Urology registrar. The researcher mentioned that the specific format(s) of the research dissertation has not been formalised by the College of Urologists and research to define the best possible format or formats will be extremely valuable.

7.6 FINAL CONCLUSIVE REMARK

The research done during this research project has strengthened the belief of the researcher that changes in the assessment model currently used in urology may contribute towards the improvement of the assessment process for both the registrars and the assessors. The researcher believes that such an assessment model is necessary not only for postgraduate students in Urology but also for postgraduate students in other fields of Medicine. The changes that have taken place in HE were a revelation to the researcher and it served as encouragement to develop the proposed assessment model for registrars in Urology.

The development of this assessment model has been a long standing dream of the researcher and it is almost unthinkable that this should be the last section of the thesis. Many hours have gone into this research project, but whatever the outcome it

has been a worthwhile experience. The research has led the researcher to the discovery of the vast field of assessment and the many aspects thereof that were completely unknown to the researcher at the start of the study. There are still many areas that can be explored and hopefully other researchers will be motivated by this research project to embark on their own research in the many available research opportunities that can be undertaken.

The future of Urology in this country and worldwide depends on the quality of the students that can be trained by us, the trainers of these young doctors. Assessment may only be a small part of the whole training process, but the quality of the assessment model will define the quality of the Urologists we produce. The wish of the researcher is that this assessment model may play a role in the improvement of the quality of the Urologists we train, thereby ensuring the future of Urology in South Africa. This will be to the advantage not only of the many patients that will be treated by these upcoming Urologists but also to the South African health authorities in general, because it will consolidate the position of South African health practitioners as among the best health practitioners in the world.

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PERSONAL COMMUNICATIONS

CMSA (College of Medicine of South Africa). 2008. Members of College Council of Urology. Interview conducted in November 2008, Durban.

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APPENDIX A

PORTFOLIO FOR REGISTRARS IN UROLOGY



REGISTRAR PORTFOLIO

**For admission to the
Fellowship
of the
College of Urologists of South Africa**

Available at: www.collegemedsa.ac.za under portfolio for registrars in urology

APPENDIX B
(INCLUDING APPENDICES B1 – B3)

APPENDIX B1: CONSENT FORM FOR PARTICIPANTS IN QUESTIONNAIRE SURVEY

APPENDIX B2: QUESTIONNAIRE FOR SPECIALISTS IN UROLOGY

APPENDIX B3: GLOSSARY OF KEY CONCEPTS

Fakulteit Gesondheidswetenskappe
Departement Urologie

Faculty of Health Sciences
Department of Urology

Posbus/PO Box 339 (G35), Bloemfontein 9300, SA
E-pos: gnurvvn@ufs.ac.za and/or wentzelS@ufs.ac.za **E-mail**
Tel: (051) 4053542 **Faks/Fax: (051) 444 0875**

Departementshoof/Head of Department: Professor SW Wentzel

CONSENT FORM: QUESTIONNAIRE SURVEY

I, the undersigned hereby give my consent to participate in the questionnaire survey. The Delphi process is scheduled to take place from January to February 2007. My particulars are as follows:

Title: _____

Surname: _____

Full Initials: _____

Postal Address: _____

E-mail address: _____

Telephone Number: _____

Cellular Number: _____

Signature: _____

I wish to assure you that the information will be treated in a **highly confidential manner** and that there will be no reference to any names. Thank you in advance for your kind co-operation. Please take note that the **results** coming from this PhD study **will be published**. Please return this form by fax to one of the following fax numbers on or before 29 February 2007.

Fax numbers: (051) 4440875 / (051) 4444358

AN ASSESSMENT MODEL FOR REGISTRARS IN UROLOGY**Introduction**

The purpose of the *research* is to compile an assessment model for postgraduate training in Urology.

The purpose of the *questionnaire* is to identify the factors that play a role in assessment.

By means of the questionnaire demographic data from the respondents will be gathered. Information on whether the factor plays a role in assessment and how the respondents rate the importance of the factor, will be obtained.

Instructions

Please evaluate every factor (F) and if it does or does not play a role in assessment:

- 4 = this factor definitely plays a role in assessment
- 3 = this factor might play a role in assessment
- 2 = not sure that this factor plays a role in assessment
- 1 = this factor definitely does not play a role in assessment

Please evaluate the importance of every factor:

- 4 = extremely important (must be included)
- 3 = important (may be included)
- 2 = less important (may possibly be left out)
- 1 = not important at all (can definitely be left out)

Please note that this questionnaire is anonymous and therefore you should feel free to answer the questionnaire as honestly as possible. I include a "glossary of key concepts" which will explain the terms you may not be familiar with.

If you are willing to participate in the research, please sign the consent form that is attached separately on the last page of the questionnaire. Please sign the consent form and complete the questionnaire within SIX weeks and fax the signed consent form and the completed questionnaire back to me at one of the following fax numbers: (051)4440875 or (051)4444358. You can also complete the questionnaire online and e-mail the completed questionnaire back to me at wentzels@ufs.ac.za. If you choose the electronic format, please fax the signed consent form back to me on one of the aforementioned fax numbers, you will have the opportunity to add your comments at the end of the questionnaire. If the space is not enough, please attach an extra page. Your participation in this research project will be appreciated and will hopefully contribute towards a more standardised assessment model for registrars in Urology.

Thank you

Prof Schalk Wentzel (Researcher)
M.B.Ch. B (UFS); MMed (UFS)
Student number: 197962231

ASSESSMENT MODEL FOR THE TRAINING OF MEDICAL POSTGRADUATE STUDENTS IN UROLOGY

The questionnaire will be anonymous. There will be 10 sections to be completed. Instructions will be provided with each section.

Office use only

☐☐☐
1 - 3

Section A			
Demographics			
<i>For example</i>			
Tick the appropriate number with an X please:			
1. Gender			
a. Male		1	
b. Female		2	
THE FOLLOWING QUESTIONS MUST BE COMPLETED BY TICKING THE APPROPRIATE NUMBER WITH AN X			
Questions			
1. Gender			
a. Male		1	☐ 4
b. Female		2	
2. Your age group?	21 – 30 years	1	☐ 5
	31 – 40 years	2	
	41 – 50 years	3	
	51 – 60 years	4	
	61 – 70 years	5	
	Over 70 years	6	
3. How long have you been employed in a Department of Urology? (total years)			
3 – 5 years		1	☐ 6
6 – 10 years		2	
11 – 15 years		3	
16 – 20 years		4	
More than 20 years		5	
4. Qualifications? (Mark all appropriate options)			
MB.Ch.B		1	☐ 7
M.Fam.Med.		2	☐ 8
M.Med. (Urology)		3	☐ 9
MD.		4	☐ 10
FCS (Urology)		5	☐ 11
Other (e.g. M. degree, Ph. D., etc.) (Specify):		6	☐ 12
5. How long have you been in your current Department of Urology? (It can include non-concurrent periods.)			
0 – 2 years		1	☐ 13
3 – 5 years		2	
6 – 10 years		3	
11 – 15 years		4	
16 – 20 years		5	
More than 20 years		6	

6. Home language?				
Afrikaans			1	☐ 14
English			2	
Other			3	
7. Identify your function(s) in the programme/school/department of Urology				
7.1 Management	Yes	No		☐ 15
7.2 Administration	Yes	No		☐ 16
7.3 Lecturing (Including clinical teaching and assessment)	Yes	No		☐ 17
7.4 Clinical work	Yes	No		☐ 18
7.5 Community Service	Yes	No		☐ 19
7.6 Research	Yes	No		☐ 20
7.7 Part time lecturer	Yes	No		☐ 21
7.8 Other (Specify):				☐ 22
8. Kindly prioritise your functions named in 7 from 1 (low priority) to 5 (high priority) in the column available. Omit if part time lecturer				
Management				☐ 23
Administration				☐ 24
Lecturing (incl. clinical teaching and assessment)				☐ 25
Clinical work				☐ 26
Community Service				☐ 27
Research				☐ 28
Other (Specify):				☐ 29
9. What is the average percentage of time (out of a total of 100%) of total working hours per week that you spend currently on: Omit if part time lecturer				
Service Delivery		%		☐ ☐ 30-31
Student Training (Basic Medical Sciences)		%		☐ ☐ 32-33
Student Training (undergraduate clinical)		%		☐ ☐ 34-35
Student Training (postgraduate clinical)		%		☐ ☐ 36-37
Research		%		☐ ☐ 38-39
Management (including Administration and Planning)		%		☐ ☐ 40-41
Community Service		%		☐ ☐ 42-43
10. I am currently employed as (mark all appropriate options):				
Head of Department			1	☐ 44
Professor			2	☐ 45
Associate Professor			3	☐ 46
Chief Specialist			4	☐ 47
Principal Specialist			5	☐ 48
Senior Specialist			8	☐ 49
Specialist			9	☐ 50
11. In which type of assessment do you have adequate experience? (Mark all appropriate options)				

Assesment of undergraduate students only	1	☐ 51
Assessment of post graduate students during training (formative assessment)	2	☐ 52
Assessment of post graduate students in their final assessment before qualification (summative assessment)	3	☐ 53
Assessment of PhD or doctoral thesis	4	☐ 54

Section B

Outcomes-based education and assessment in Higher Education.

This section deals with issues related to outcome-based education and assessment.

Please first indicate whether this factor plays a role in assessment and secondly the importance of this factor in assessment.

Factor playing a role

4 = definitely plays a role in assessment

3 = might play a role in assessment

2 = not sure if it plays a role in assessment

1 = definitely does not play a role in assessment

Importance of factor

4 = extremely important

3 = important

2 = less important

1 = not important

	Factor	Importance	
1. Knowledge of current changes in higher education	4 3 2 1	4 3 2 1	☐ 55-56
2. Attitude towards the changes in higher education	4 3 2 1	4 3 2 1	☐ 57-58
3. Willingness to learn about changes in higher education	4 3 2 1	4 3 2 1	☐ 59-60
4. Understanding the difference between assessment and evaluation	4 3 2 1	4 3 2 1	☐ 61-62
5. Formal training of lecturer in assessment	4 3 2 1	4 3 2 1	☐ 63-64
6. Self-knowledge of own assessment attitude (including style)	4 3 2 1	4 3 2 1	☐ 65-66

Section C

The purpose of assessment

This section deals with issues related to the purpose of assessment.

The following factors formulated as statements, express the purpose of assessment. Evaluate every factor whether it plays a role or not in assessment and select the importance there-of.

Factor playing a role

4 = definitely plays a role in assessment

3 = might play a role in assessment

2 = not sure if it plays a role in assessment

1 = definitely does not play a role in assessment

Importance of factor

4 = extremely important

3 = important

2 = less important

1 = not important

	Factor	Importance	
1. The assessment certifies that a specific level of performance has been achieved.	4 3 2 1	4 3 2 1	☐ 67-68
2. The assessment is described in the form of an outcome	4 3 2 1	4 3 2 1	☐ 69-70
3. The assessment is a learning experience	4 3 2 1	4 3 2 1	☐ 71-72
4. The purpose of assessment is to give learners the opportunity to monitor their progress	4 3 2 1	4 3 2 1	☐ 73-74
5. Assessment identifies areas where adjustments in teaching and learning can be made	4 3 2 1	4 3 2 1	☐ 75-76
6. The purpose of assessment is to classify or rank the performance of students	4 3 2 1	4 3 2 1	☐ 77-78

How would you rate the role and the importance of the following types of assessment			
	Role	Importance	
1. Diagnostic Assessment	4 3 2 1	4 3 2 1	☐ ☐ 79-80
2. Formative Assessment	4 3 2 1	4 3 2 1	☐ ☐ 1-2
3. Summative Assessment	4 3 2 1	4 3 2 1	☐ ☐ 3-4
How would you rate the role and the importance of the following secondary types of assessment			
	Role	Importance	
1. Grading of students knowledge into a point on a arbitrary Scale	4 3 2 1	4 3 2 1	☐ ☐ 5-6
2. Selection of the best available students	4 3 2 1	4 3 2 1	☐ ☐ 7-8
3. Readiness of students to enter the next phase of a Programme	4 3 2 1	4 3 2 1	☐ ☐ 9-10
4. The role of feedback to students	4 3 2 1	4 3 2 1	☐ ☐ 11-12
5. The role of feedback to teachers	4 3 2 1	4 3 2 1	☐ ☐ 13-14

Section D <u>Learner assessment</u> This section deals with issues related to mechanisms for learner assessment in order to ensure good assessment practices. First please indicate whether this factor plays a role in assessment and secondly the importance of this factor in assessment. <u>Factor playing a role</u> 4 = definitely playing a role in assessment 3 = might play a role in assessment 2 = not sure if it's playing a role in assessment 1 = definitely doesn't play a role in assessment <u>Importance of factor</u> 4 = extremely important 3 = important 2 = less important 1 = not important			
	Factor	Importance	
1. Emphasis should be shifted away from the content aspect of programmes towards the objective assessment of performance of students in terms of clearly stated outcomes.	4 3 2 1	4 3 2 1	☐ ☐ 15-16
2. The outcome for every student in a programme should be equivalent and clearly stated	4 3 2 1	4 3 2 1	☐ ☐ 17-18
3. The assessment process must be objective	4 3 2 1	4 3 2 1	☐ ☐ 19-20
4. Learner responsibilities must be defined	4 3 2 1	4 3 2 1	☐ ☐ 21-22
5. Assessment criteria for each of the abilities / skills that have been developed should be defined	4 3 2 1	4 3 2 1	☐ ☐ 23-24
6 There must be an assessment taskforce/group/committee, which will include experts	4 3 2 1	4 3 2 1	☐ ☐ 25-26
7 There must be an integrated method of assessment covering all aspects of the learning programme.	4 3 2 1	4 3 2 1	☐ ☐ 27-28

8. There must be a systematic assessment programme, which will aim to ensure uniformity of assessment across all subjects / modules.	4 3 2 1	4 3 2 1	☐ ☐ 29-30
9. Assessors must receive formal training in assessment methodology in terms of Higher Education Quality Control requirements for assessors.	4 3 2 1	4 3 2 1	☐ ☐ 31-32
10. All forms of assessment are moderated by appropriately trained moderators with specific expertise in the learning area.	4 3 2 1	4 3 2 1	☐ ☐ 33-34
12. Moderation of learner assessments should take place to ensure that the required standard is observed	4 3 2 1	4 3 2 1	☐ ☐ 35-36
13. Moderation of learner assessment should take place to ensure that the required level of appropriateness is observed	4 3 2 1	4 3 2 1	☐ ☐ 37-38
14. Moderation of learner assessments should take place to ensure that the required level of fairness is observed	4 3 2 1	4 3 2 1	☐ ☐ 39-40

Section E

Quality assurance in assessment

This section deals with issues related to quality assurance in assessment.

Please first indicate whether this factor plays a role in assessment and secondly the importance of this factor in assessment.

Factor playing a role

4 = definitely playing a role in assessment

3 = might play a role in assessment

2 = not sure if it's playing a role in assessment

1 = definitely doesn't play a role in assessment

Importance of factor

4 = extremely important

3 = important

2 = less important

1 = not important

	Factor	Importance	
1. Assessing the learner more than once per module (various assessments)	4 3 2 1	4 3 2 1	☐ ☐ 41-42
2. Assessment-events have to be communicated with learners in advance	4 3 2 1	4 3 2 1	☐ ☐ 43-44
3. Giving learners enough opportunity (e.g. time) to prepare for assessment	4 3 2 1	4 3 2 1	☐ ☐ 45-46
4. Explain to learners how the weight of individual assessment is determined	4 3 2 1	4 3 2 1	☐ ☐ 47-48
5. Communication to learners on the learning content that will be covered in the assessment	4 3 2 1	4 3 2 1	☐ ☐ 49-50
6. Communication to learners on the length of assessment	4 3 2 1	4 3 2 1	☐ ☐ 51-52
7. Communication to learners on type of questions	4 3 2 1	4 3 2 1	☐ ☐ 53-54
8. Consultation with colleagues with regard to judgement on the content (outcomes) covered	4 3 2 1	4 3 2 1	☐ ☐ 55-56
9. Consultation with colleagues with regard to judgement on the assessment process	4 3 2 1	4 3 2 1	☐ ☐ 57-58
10. Procedures to ensure reliability in assessment	4 3 2 1	4 3 2 1	☐ ☐ 59-60
11. Procedures to ensure validity of assessment	4 3 2 1	4 3 2 1	☐ ☐ 61-62
12. Procedures to ensure trustworthiness in assessment	4 3 2 1	4 3 2 1	☐ ☐ 63-64
13. Making use of memoranda	4 3 2 1	4 3 2 1	☐ ☐ 65-66
14. Making use of external examiners	4 3 2 1	4 3 2 1	☐ ☐ 67-68
15. Making use of internal moderators	4 3 2 1	4 3 2 1	☐ ☐ 69-70
16. Making use of external moderators	4 3 2 1	4 3 2 1	☐ ☐ 71-72

17. Using a scoring rubric (including criteria) to ensure objectivity and consistency	4 3 2 1	4 3 2 1	☐ ☐ 73-74
18. Institution policy on assessment	4 3 2 1	4 3 2 1	☐ ☐ 75-76
19. Faculty policy on assessment	4 3 2 1	4 3 2 1	☐ ☐ 77-78
20. School policy on assessment	4 3 2 1	4 3 2 1	☐ ☐ 79-80
21. Department policy on assessment	4 3 2 1	4 3 2 1	☐ ☐ 1-2
22. Programme implementation guideline on assessment	4 3 2 1	4 3 2 1	☐ ☐ 3-4
23. School policy on re-assessment	4 3 2 1	4 3 2 1	☐ ☐ 5-6
24. Programme policy on re-assessment	4 3 2 1	4 3 2 1	☐ ☐ 7-8

Section F

Principles of assessment

This section deals the principles of assessment.

Please first indicate whether this factor plays a role in assessment and secondly the importance of this factor in assessment.

Factor playing a role

4 = definitely playing a role in assessment
3 = might play a role in assessment
2 = not sure if it's playing a role in assessment
1 = definitely doesn't play a role in assessment

Importance of factor

4 = extremely important
3 = important
2 = less important
1 = not important

	Factor	Importance	
1. Assessment is an integral part of learning	4 3 2 1	4 3 2 1	☐ ☐ 9-10
2. Assessment should focus on deep, active learning	4 3 2 1	4 3 2 1	☐ ☐ 11-12
3. Assessment involves higher-order cognitive skills	4 3 2 1	4 3 2 1	☐ ☐ 13-14
4. Assessment purposes determine the assessment methods	4 3 2 1	4 3 2 1	☐ ☐ 15-16
5. Application of relevant assessment criteria	4 3 2 1	4 3 2 1	☐ ☐ 17-18
6. Assessment process should be reliable	4 3 2 1	4 3 2 1	☐ ☐ 19-20
7. Assessment tasks should be valid	4 3 2 1	4 3 2 1	☐ ☐ 21-22
8. Assessment should be transparent	4 3 2 1	4 3 2 1	☐ ☐ 23-24
9. Assessment should be fair	4 3 2 1	4 3 2 1	☐ ☐ 25-26
10. Procedures to ensure validity of assessment	4 3 2 1	4 3 2 1	☐ ☐ 27-28
11. Assessment workload should be realistic	4 3 2 1	4 3 2 1	☐ ☐ 29-30
12. Assessment should include a wide range of approaches	4 3 2 1	4 3 2 1	☐ ☐ 31-32
13. Assessment should provide feedback to support the learning process	4 3 2 1	4 3 2 1	☐ ☐ 33-34
14. Assessment should be integral to quality assurance procedures	4 3 2 1	4 3 2 1	☐ ☐ 35-36

Section G

Planning and constructing assessment

This section deals with issues related to the planning and constructing of assessment.

Please first indicate whether this factor plays a role in assessment and secondly the importance of this factor in assessment.

Factor playing a role

4 = definitely playing a role in assessment
3 = might play a role in assessment
2 = not sure if it's playing a role in assessment
1 = definitely doesn't play a role in assessment

Importance of factor

4 = extremely important
3 = important
2 = less important
1 = not important

	Factor	Importance	
1. The process of alignment (outcomes, methods, assessment, feedback planned together) is planned	4 3 2 1	4 3 2 1	☐ ☐ 37-38
2. Formulation of clear stated outcomes	4 3 2 1	4 3 2 1	☐ ☐ 39-40
3. Identification of the capabilities that must be assessed	4 3 2 1	4 3 2 1	☐ ☐ 41-42
4. Identification of the skills that must be assessed	4 3 2 1	4 3 2 1	☐ ☐ 43-44
5. Determination of the assessment method in agreement with the knowledge defined by the outcome	4 3 2 1	4 3 2 1	☐ ☐ 45-46
6. Determination of the assessment method in agreement with the skills defined by the outcome	4 3 2 1	4 3 2 1	☐ ☐ 47-48
7. Determination of the assessment method in agreement with the attitudes defined by the outcome	4 3 2 1	4 3 2 1	☐ ☐ 49-50
8. Accommodation of the level of assessment (e.g. Blooms taxonomy)	4 3 2 1	4 3 2 1	☐ ☐ 51-52
9. Using of a variety of assessment methods	4 3 2 1	4 3 2 1	☐ ☐ 53-54
10. Using formative assessment	4 3 2 1	4 3 2 1	☐ ☐ 55-56
11. Using summative assessment	4 3 2 1	4 3 2 1	☐ ☐ 57-58
12. Using self-assessment	4 3 2 1	4 3 2 1	☐ ☐ 59-60
13. Using peer assessment	4 3 2 1	4 3 2 1	☐ ☐ 61-62
14. Using patient assessment	4 3 2 1	4 3 2 1	☐ ☐ 63-64
15. Planning of rubric (scoring card) for assessment	4 3 2 1	4 3 2 1	☐ ☐ 65-66
16. Development of assessment criteria	4 3 2 1	4 3 2 1	☐ ☐ 67-68
17. Using criteria-referenced assessment	4 3 2 1	4 3 2 1	☐ ☐ 69-70
18. Using norm-referenced assessment	4 3 2 1	4 3 2 1	☐ ☐ 71-72
19. Analyses of student results	4 3 2 1	4 3 2 1	☐ ☐ 73-74
20. Interpretation of students results	4 3 2 1	4 3 2 1	☐ ☐ 75-76
21. Planning timely feedback	4 3 2 1	4 3 2 1	☐ ☐ 77-78
22. Identification of feedback method	4 3 2 1	4 3 2 1	☐ ☐ 79-80

Section H

Feedback on assessment and the use of assessment results

This section deals with issues related to feedback on assessment and the use of assessment results.

Please first indicate whether this factor plays a role in assessment and secondly the importance of this factor in assessment.

Factor playing a role

4 = definitely playing a role in assessment
3 = might play a role in assessment
2 = not sure if it's playing a role in assessment
1 = definitely doesn't play a role in assessment

Importance of factor

4 = extremely important
3 = important
2 = less important
1 = not important

	Factor	Importance	
1. Analysis of assessment results	4 3 2 1	4 3 2 1	☐ ☐ 1-2
2. Interpretation of assessment results	4 3 2 1	4 3 2 1	☐ ☐ 3-4
3. Timely feedback after assessment	4 3 2 1	4 3 2 1	☐ ☐ 5-6
4. Using various methods for giving feedback	4 3 2 1	4 3 2 1	☐ ☐ 7-8
5. Motivation why feedback is given	4 3 2 1	4 3 2 1	☐ ☐ 9-10

Section I Types / strategies of assessment This section deals with different types / strategies of assessment. Please first indicate whether this factor plays a role in assessment and secondly the importance of this factor in assessment. Factor playing a role 4 = definitely should be included in assessment 3 = might be included in assessment 2 = not sure if it should be included in assessment 1 = definitely should not be included in assessment Importance of factor 4 = extremely important 3 = important 2 = less important 1 = not important		
Do you think the following types/strategies of assessment should be included in student assessment. Secondly indicate the importance of this type of assessment	Factor	Importance
1. Alternative assessment	4 3 2 1	4 3 2 1
2. Authentic assessment	4 3 2 1	4 3 2 1
3. Traditional assessment	4 3 2 1	4 3 2 1
4. Criterion-referenced assessment	4 3 2 1	4 3 2 1
5. Norm-referenced assessment	4 3 2 1	4 3 2 1
6. Diagnostic assessment	4 3 2 1	4 3 2 1
7. Formative assessment	4 3 2 1	4 3 2 1
8. Summative assessment	4 3 2 1	4 3 2 1
9. Performance-based assessment	4 3 2 1	4 3 2 1
10. Self-assessment	4 3 2 1	4 3 2 1

☐ **11-12**

☐ **13-14**

☐ **15-16**

☐ **17-18**

☐ **19-20**

☐ **21-22**

☐ **23-24**

☐ **25-26**

☐ **27-28**

☐ **29-30**

Section J Assessment methods and appropriateness This section deals with assessment methods and appropriateness. Question 1: Short answers Mark on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)		
1.1 Time to set up this assessment method	1 2 3 4 5	☐ 31
1.2 Time to mark this assessment	1 2 3 4 5	☐ 32
1.3 Express the time to give feedback on this assessment method on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)	1 2 3 4 5	☐ 33
1.4 Assess on a scale of 0 – 5 the appropriateness of this assessment method for the assessment of the following (0 = not applicable; 1 = short; 3 = average; 5 = long)		
1.4.1 Knowledge	1 2 3 4 5	☐ 34
1.4.2 Skills	1 2 3 4 5	☐ 35
1.4.3 Professional behaviour (including attitudes and values)	1 2 3 4 5	☐ 36
1.4.4 Clinical competence	1 2 3 4 5	☐ 37
1.5 List the reason(s) why you will / will not choose this method as an appropriate method of assessment		☐ 38-39
Question 2: MCQ'S Mark on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)		
2.1 Time to set up this assessment method	1 2 3 4 5	☐ 40
2.2 Time to mark this assessment	1 2 3 4 5	☐ 41

2.3 Express the time to give feedback on this assessment method on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)	1 2 3 4 5	☐ 42
2.4 Assess on a scale of 0 – 5 the appropriateness of this assessment method for the assessment of the following (0 = not applicable; 1 = short; 3 = average; 5 = long)		
2.4.1 Knowledge	1 2 3 4 5	☐ 43
2.4.2 Skills	1 2 3 4 5	☐ 44
2.4.3 Professional behaviour (including attitudes and values)	1 2 3 4 5	☐ 45
2.4.4 Clinical competence	1 2 3 4 5	☐ 46
2.5 List the reason(s) for the selection of this assessment method.		☐ ☐ 47-48
Question 3: Essay-type questions		
Mark on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)		
3.1 Time to set up this assessment method	1 2 3 4 5	☐ 49
3.2 Time to mark this assessment	1 2 3 4 5	☐ 50
3.3 Express the time to give feedback on this assessment method on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)	1 2 3 4 5	☐ 51
3.4 Assess on a scale of 0 – 5 the appropriateness of this assessment method for the assessment of the following (0 = not applicable; 1 = short; 3 = average; 5 = long)		
3.4.1 Knowledge	0 1 2 3 4 5	☐ 52
3.4.2 Skills	0 1 2 3 4 5	☐ 53
3.4.3 Professional behaviour (including attitudes and values)	0 1 2 3 4 5	☐ 54
3.4.4 Clinical competence	0 1 2 3 4 5	☐ 55
3.5 List the reason(s) for the selection of this assessment method.		☐ ☐ 56-57
Question 4: Case studies (paper)		
Mark on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)		
4.1 Time to set up this assessment method	1 2 3 4 5	☐ 58
4.2 Time to mark this assessment	1 2 3 4 5	☐ 59
4.3 Express the time to give feedback on this assessment method on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)	1 2 3 4 5	☐ 60
4.4 Assess on a scale of 0 – 5 the appropriateness of this assessment method for the assessment of the following (0 = not applicable; 1 = short; 3 = average; 5 = long)		
4.4.1 Knowledge	1 2 3 4 5	☐ 61
4.4.2 Skills	1 2 3 4 5	☐ 62

4.4.3 Professional behaviour (including attitudes and values)	1 2 3 4 5	☐ 63
4.4.4 Clinical competence	1 2 3 4 5	☐ 64
4.5 List the reason(s) for the selection of this assessment method.		☐ ☐ 65-66

Question 5: Orals (Vivas)		
Mark on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)		
5.1 Time to set up this assessment method	1 2 3 4 5	☐ 67
5.2 Time to mark this assessment	1 2 3 4 5	☐ 68
5.3 Express the time to give feedback on this assessment method on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)	1 2 3 4 5	☐ 69
5.4 Assess on a scale of 0 – 5 the appropriateness of this assessment method for the assessment of the following (0 = not applicable; 1 = short; 3 = average; 5 = long)		
5.4.1 Knowledge	1 2 3 4 5	☐ 70
5.4.2 Skills	1 2 3 4 5	☐ 71
5.4.3 Professional behaviour (including attitudes and values)	1 2 3 4 5	☐ 72
5.4.4 Clinical competence	1 2 3 4 5	☐ 73
5.5 List the reason(s) for the selection of this assessment method.		☐ ☐ 74-75

Question 6: Clinical cases		
Mark on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)		
6.1 Time to set up this assessment method	1 2 3 4 5	☐ 76
6.2 Time to mark this assessment	1 2 3 4 5	☐ 77
6.3 Express the time to give feedback on this assessment method on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)	1 2 3 4 5	☐ 78
6.4 Assess on a scale of 0 – 5 the appropriateness of this assessment method for the assessment of the following (0 = not applicable; 1 = short; 3 = average; 5 = long)		
6.4.1 Knowledge	1 2 3 4 5	☐ 79
6.4.2 Skills	1 2 3 4 5	☐ 80
6.4.3 Professional behaviour (including attitudes and values)	1 2 3 4 5	☐ 1
6.4.4 Clinical competence	1 2 3 4 5	☐ 2
6.5 List the reason(s) for the selection of this assessment method.		☐ ☐ 3-4
Question 7: OSCE's		
Mark on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)		

7.1 Time to set up this assessment method	1 2 3 4 5	☐ 5
7.2 Time to mark this assessment	1 2 3 4 5	☐ 6
7.3 Express the time to give feedback on this assessment method on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)	1 2 3 4 5	☐ 7
7.4 Assess on a scale of 0 – 5 the appropriateness of this assessment method for the assessment of the following (0 = not applicable; 1 = short; 3 = average; 5 = long)		
7.4.1 Knowledge	1 2 3 4 5	☐ 8
7.4.2 Skills	1 2 3 4 5	☐ 9
7.4.3 Professional behaviour (including attitudes and values)	1 2 3 4 5	☐ 10
7.4.4 Clinical competence	1 2 3 4 5	☐ 11
7.5 List the reason(s) for the selection of this assessment method.		☐ ☐ 12-13

Question 8: Portfolios		
Mark on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)		
8.1 Time to set up this assessment method	1 2 3 4 5	☐ 14
8.2 Time to mark this assessment	1 2 3 4 5	☐ 15
8.3 Express the time to give feedback on this assessment method on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)	1 2 3 4 5	☐ 16
8.4 Assess on a scale of 0 – 5 the appropriateness of this assessment method for the assessment of the following (0 = not applicable; 1 = short; 3 = average; 5 = long)		
8.4.1 Knowledge		☐ 17
8.4.2 Skills	1 2 3 4 5	☐ 18
8.4.3 Professional behaviour (including attitudes and values)	1 2 3 4 5	☐ 19
8.4.4 Clinical competence	1 2 3 4 5	☐ 20
8.5 List the reason(s) for the selection of this assessment method.		☐ ☐ 21-22

Question 9: Assignments		
Mark on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)		
9.1 Time to set up this assessment method	1 2 3 4 5	☐ 23
9.2 Time to mark this assessment	1 2 3 4 5	☐ 24
9.3 Express the time to give feedback on this assessment method on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)	1 2 3 4 5	☐ 25
9.4 Assess on a scale of 0 – 5 the appropriateness of this assessment method for the assessment of the following (0 = not applicable; 1 = short; 3 = average; 5 = long)		
9.4.1 Knowledge	1 2 3 4 5	☐ 26

9.4.2 Skills	1 2 3 4 5	☐ 27
9.4.3 Professional behaviour (including attitudes and values)	1 2 3 4 5	☐ 28
9.4.4 Clinical competence	1 2 3 4 5	☐ 29
9.5 List the reason(s) for the selection of this assessment method.		☐ ☐ 30-31

Question 10: Scripts- / Mini-dissertations		
Mark on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)		
10.1 Time to set up this assessment method	1 2 3 4 5	☐ 32
10.2 Time to mark this assessment	1 2 3 4 5	☐ 33
10.3 Express the time to give feedback on this assessment method on a scale of 1 – 5 (1 = short; 3 = average; 5 = long)	1 2 3 4 5	☐ 34
10.4 Assess on a scale of 0 – 5 the appropriateness of this assessment method for the assessment of the following (0 = not applicable; 1 = short; 3 = average; 5 = long)		
10.4.1 Knowledge	1 2 3 4 5	☐ 35
10.4.2 Skills	1 2 3 4 5	☐ 36
10.4.3 Professional behaviour (including attitudes and values)	1 2 3 4 5	☐ 37
10.4.4 Clinical competence	1 2 3 4 5	☐ 38
10.5 List the reason(s) for the selection of this assessment method.		☐ ☐ 39-40

THIS IS THE END OF THE QUESTIONNAIRE.

THANK YOU FOR THE TIME AND EFFORT YOU TOOK TO COMPLETE THE QUE

Glossary of key concepts

Alternative assessment: Any method that differs from conventional paper-and-pencil tests, most particularly objective tests. Examples include observations, exhibitions, oral presentations, experiments, portfolios, interviews and projects). The utilisation of non-traditional approaches in judging student performance.

Assessment criteria: Are associated with the standard of performance and are used by the assessor to determine whether the outcome has been met. In line with the rules of combination for the qualification, the composite parts of the qualification are indicated as fundamental, core or elective. It is predefined categories according to which learners' performance/competency is measured.

These criteria are clear and transparent indicators of whether the outcomes of a learning programme have been met.

Assessment: Is a structured process for gathering evidence about the candidate's achievements in relation to specific learning outcomes; the act or result of judging the worth or value of something or someone. This is the process whereby the competency level of students is determined and should be performed through a variety of assessment methods, over a period of time and in a variety of contexts.

Assessment instrument: Refers to the nature of the assessment task given to the learner to do. According to Le Roux (2004:62) assessment instruments cover all the aspects of the process of determining whether outcomes have been met.

Authentic assessment: A form of assessment in which students are asked to perform real-world tasks that demonstrate meaningful application of essential knowledge and skills; the multi-dimensional process of judging students' acceptable performance behaviours in life like role applications (Mueller 2003:Online).

Continuous assessment: Involves assessing learning regularly in a manner that integrates teaching and assessment. It uses feedback from each assessment to inform further teaching and the construction of the next assessment. Continuous assessment suggests a cyclical process through which a multifaceted, holistic understanding of the learner can be developed (Geyser 2004:101).

Formative assessment: Assessment that occurs during instruction to provide feedback to teachers and students. It is the type of assessment in which learners' abilities (i.e. knowledge, skills and attitudes as set out in the outcomes) are monitored throughout the training programme. It is used to improve learning through the provision of feedback to students on their progress; it serves needs intrinsic to the education process (Biggs 2003:141). It provides insight to lecturers on their teaching strategies (McMillan 2004:401).

Integrated assessment: It refers to assessing a number of outcomes together; assessing a number of assessment criteria together; assessing a number of unit standards or learning units together; using a number of different assessment methods (and tasks) to assess the achievement of an outcome(s); collecting that occurs routinely, for example evidence from a workplace setting; acquiring evidence from other sources such as supervisor's reports, testimonials, logbooks and the like (Geyser 2004:101-102).

Norm-referenced assessment: Refers to the practice whereby student performance is compared with that of peers in the same class or cohort; it is associated with the averaging of scores and with attempt to obtain a bell-shaped curve of mark distributions (Biggs 2003:143). According to McMillan (2004:402) it is a relative assessment by comparing the performance of an individual to that which could be regarded as the norm.

Outcome: Culmination illustration of learning that really matters. They are measurable indicators of the competence of a learner (SAQA 2001:21).

Outcomes-based Education (OBE): Is learner-centred, results-orientated educational approach based on the assumption that all students are capable of realising their full potential, but that this will not necessarily occur in the same way and at the same point in time. It requires accountability from learners since they have to demonstrate competence in terms of knowledge, skills and attitudes.

Performance-based assessment: Is where a teacher observes and makes a judgment about the student's demonstration of a skill or competency in creating a product, constructing a response, or making a presentation. Performance assessments call upon the examinee to demonstrate specific skills and competencies, that is, to apply the skills and knowledge they have mastered.

Qualitative assessment: Does not focus on what the final score is, but whether the final marks tell us how well the performance matches the outcomes. As learning occurs it builds on previous knowledge and its structure becomes complex. Learning outcomes should therefore be assessed holistically. A structure can only be assessed as a whole and not as a sum of its parts. Each learner's assessment is independent of any other learner's (Geyser 2004:102).

Quantitative assessment: Quantitative assessment uses numbers to measure different units which are often arbitrarily created. Units are either correct or incorrect, and the sum of correct units indicates whether learning has taken place (Geyser 2004:102).

Reliability: The consistency, stability and dependability of scores – whether similar results would be obtained in other situations.

Summative assessment: Takes place at the end of the time allotted for the programme, course or qualification. It is still part of the learning process, but differs from formative assessment regarding the time when it occurs within the learning process. This type of assessment indicates whether a learner has achieved the learning outcomes of the entire programme or whether he or she complies with the purpose for which the training programme was developed (Biggs 2003:141; Le Roux 2004:57).

Traditional assessment: Refers to the forced-choice measures of multiple-choice tests, fill-in-the-blanks, true-false, matching and the like that has been, and remains so common in education. Students typically select an answer or recall information to complete the assessment. These tests may be standardised or teacher-created. They may be administered locally or state-wide or internationally (Mueller 2003:Online).

Validity: The appropriateness and legitimacy of the inferences, claims and uses made from the test scores.

Criteria referenced assessment: Student performance is judged against pre-specified criteria or standards. These criteria should be determined at the outset of the training programme (SAQA 2001:25).

Diagnostic assessment: This is the type of assessment that is used to predict academic potential. This type of assessment takes place in order to rank or place students in a course according to their potential.

Trustworthiness: Dependable, when criteria that are given can be trusted.

For this course the researcher will use **forms of assessment** to avoid confusion.

A form of assessment refers to a particular type of, approach to or strategy for the assessment of student learning (Van Tonder 2006:33).

Purpose of assessment

A form of assessment has to relate to a particular purpose of assessment. If the purpose is to support and improve the learning process (i.e. the assessment has a formative purpose), the particular form of assessment is called **formative assessment**. If the purpose is rather to assess the knowledge, skills, attitudes and/or values of a learner at the end of a particular period of learning, it has a summative purpose and the form of assessment is known as **summative assessment** (Van Tonder 2006:33).

Types of questions; discussion and examples; and possible uses from:

TYPES OF QUESTIONS	DISCUSSION AND EXAMPLES	POSSIBLE USES
1. Completion question/ short answer questions	Learners are presented with a question with a pre-determined answer consisting of a few words, or may be given a statement where key words are omitted. They are then required to complete the statement by filling in the word(s). Such questions may also involve the use of numbers, diagrams and graphs.	Recall of factual information. Test understanding and application of knowledge, e.g. in mathematical concepts.
2. Multiple-choice questions	Multiple-choice questions consist of an incomplete statement or a question, followed by plausible alternative responses from which the learner has to select the correct one. Outcomes involving higher order analytical skills are probably more validly assessed by means of free-response assessment instruments such as extended-response questions, but multiple-choice questions can be useful if carefully constructed.	Recall of information. Check understanding; analyses
3. Oral examinations	The form and content of the response is limited by the way in which the question is asked. These questions do not have pre-determined correct answers (as in short answer questions, etc.) and the assessor has to exercise his/her professional judgment when interpreting learners' responses.	Allows for self-expression when questions are oral. Support observation of tasks where underpinning knowledge and understanding are tested.
4. Structured questions (Essay type questions)	A structured question consists of a stem (which describes a situation), followed by a series of related questions. The stem can be text, a diagram, a picture, a video, etc.	Recall of information. Application of knowledge and understanding. Analysis Debates Arguments
5. Assignments	A problem-solving exercise with clear guidelines and a specified length. More structured and less open-ended than projects, but they do not necessarily involve strict adherence to a prescribed procedure and they are not concerned exclusively with manual skills.	Problem-solving around a particular topic.
6. Case studies	A description of an event concerning a real-life or simulated situation, usually in the form of a paragraph or text, a video, a picture or a roll-play exercise. This is followed by a series of instructions to elicit responses from learners. Individuals or small groups may undertake case studies.	Analysis of situations Drawing conclusion Report on possible courses of action.

7. Logbooks	A useful means of assessing learners' progress and achievements. It should have clear instructions for use and give guidance on how essential information is to be recorded.	In a workplace – monitor and check activities; record processes; record of achievements.
8. Portfolios	A collection of different types of evidence relating to the work being assessed. It can include a variety of work samples. Portfolios are suitable for long-term activities. It is important that the evidence in the portfolio meet the requirements of sufficiency and currency. The learner and assessor usually plan the portfolio jointly as sources of evidence may vary. The learner is then responsible for the collection of evidence and the compilation of the portfolio.	Recognition of prior learning and experience. Assessment of long-term activities related to each other. Assessment where direct observation may be difficult.
9. Projects/Mini dissertations	A project is any exercise or investigation in which the time constraints are more relaxed. Projects are: practical; comprehensive and open-ended; tackled without close supervision but with assessor guidance and support. Projects can involve individuals or a group of learners. The choice of the project is directed by the assessor, usually by providing the learner with a topic or brief for the investigation.	Comprehensive range of skills can be assessed. Integration of activities within and across unit standards or different parts of a qualification.
10. Self-assessment	A checklist, questionnaire completed by a learner, notes jotted down or other forms of structured self-assessment undertaken after an action, demonstration, oral examination, etc.	Critical evaluation of progress by learner.
15. Peer assessment	Assessment by the learner's peers, usually in the form of a checklist	Assessment of paired or group activities Assessment of teamwork.

- (a) **Cases and open problems:** Have potential for measuring application of knowledge, analysis problem-solving and evaluative skills. Short cases are relatively easy to design and mark. Design of more complex cases and their marking schemes are more challenging to design and develop. Marking for grading and feedback are about as fast as essay-marking.
- (b) **Logbooks/Diaries:** Wide variety of formats ranging from an unstructured account of each day to a structured form based on tasks. Some training in reflection recommended. Time-consuming for students. Requires a high level of trust between assessors and students. Measuring reliability is difficult. May have high validity if structure matches learning outcomes.
- (c) **Mini-practicals:** A series of mini-practicals undertaken under times conditions. Potential for sampling wide range of practical, analytical and interpretative skills, initial design is time-consuming. Some if not all of the marking can be done on the spot so it is fast. Feedback to students is fast. Reliable but training of assessors is necessary.

- (d) **Modified Essay Questions (MEQs):** A sequence of questions based on a case study. After students have answered one question, further information and a question are given. The procedure continues, usually for about one hour. Relatively easy to set. May be used in teaching or assessment for developmental or judgmental purposes. Can be computer – or paper-based. Can encourage reflection and analysis. Potentially high reliability, validity and manageability.
- (e) **Orals:** Tests communication, understanding, capacity to think quickly under pressure and knowledge of procedures. Feedback potential marking for grading can be fast but some standardisation of interview procedure is needed to ensure reliability and validity.
- (f) **Objective Structured Clinical Examination (OSCEs):** Initially used in medicine but can be used in business, legal practice, management, psychology, science courses and social communication skills. Fairly hard to design and organise, easy to score and provide feedback. Could be used in induction phase to estimate key practical skills. Group OSCEs useful for teaching, feedback and developmental purposes. OSCEs can be used towards the end of a course to provide feedback or to test performance against outcomes. Reliability validity and manageability are potentially fairly high. Probably less labour intensive than other forms of marking but several assessors required at one time. Initially, they are time-consuming to design – but worth the effort.
- (g) **Portfolios:** Wide variety of types form a collection of assignments to reflection upon critical incidents. The latter are probably the most useful for developmental purposes. May be the basis for orals. Rich potential for developing reflective learning if students trained in these techniques. Require a high level of trust between assessors and students. Measuring reliability is difficult. May be high on validity if structure matches objectives of training.
- (h) **Presentations:** Tests preparation, understanding, knowledge, capacity to structure, information and oral communication skills. Feedback potential: from tutor, self and peers. Marking for grading based on simple criteria is fast and potentially reliable. Measures of ability to respond to questions and manage discussion could be included.
- (i) **Single Essay-Examination:** Three hours on prepared topic. Relatively easy to set but attention to criteria needed. Wider range of ability tested including capacity to draw on a wide range of knowledge, to synthesise and identify recurrent themes. Marking for feedback is relatively slow. Marking for grading is relatively fast providing the criteria are simple.

APPENDIX C
(INCLUDING APPENDICES C1 AND C2)

APPENDIX C1: LETTER OF INVITATION TO DELPHI PANELLISTS

APPENDIX C2: CONSENT FORM FOR DELPHI PROCESS

Fakulteit Gesondheidswetenskappe

Faculty of Health Sciences

Departement Urologie

Department of Urology

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Tel: (051) 4053542

Faks/Fax: (051) 444 0875

Departementshoof/Head of Department: Professor SW Wentzel

Date: _____

Name of Delphi participant: _____

Address: _____

Dear

**REQUEST TO PARTICIPATE IN A Ph.D. STUDY WITH THE TITLE:
ASSESSMENT MODEL FOR THE TRAINING OF MEDICAL POSTGRADUATE STUDENTS
IN UROLOGY**

I am the head of the Department of Urology at the Free State University as well as a Chief Specialist in the Free State Department of Health. I am involved in service delivery but also in postgraduate training of registrars in the Department of Urology.

I am writing a thesis as part of my Ph.D. studies in Health Professions Education. The aim of my research and the ensuing thesis is to develop a model to assess registrars in the field of Urology.

My supervisors are:

- 1) Prof. Dr GJ van Zyl
Dean: Faculty of Health Sciences
University of the Free State
Bloemfontein
- 2) Prof. Dr M.M. Nel
Head: Health Sciences Education
Faculty of Health Sciences
University of the Free State
Bloemfontein

The **purpose** of the study is to develop an assessment model that will be acceptable for both the learners and the assessors. Assessment needs to be fair, valid and trustworthy and therefore it is necessary to review both the traditional assessment models as well as alternative forms of assessment in order to develop the best possible assessment model for the modern urologist.

Background information

Postgraduate assessment of the urology student is currently exclusively of a summative nature (Minutes SAUA, Nov 2006: 1-3). The situation is complicated by the fact that two different exit-examinations are currently acknowledged by the accredited Urology Training centers in South Africa. A research dissertation is an integral part of the final examination if the M. Med. Examination is chosen as the exit examination. In contrast the research dissertation has only been accepted as a compulsory part of the FC Urology examination since 2010 and will only be compulsory as a part of the final examination for students that start their training at the

beginning of 2011. It is further complicated by the fact that different examiners are used for the different exit examination and that very little quality assurance mechanisms are currently in place. The fact of the matter is that there are several shortcomings in the current available assessment models for postgraduate students in urology. These include the fact that there are no formative training models available and the assessment is almost exclusively of a summative nature. The lack of formal feedback to the learners complicates matters and does not fit in with modern assessment models. Although formal training modules for assessors are available, it is not compulsory and few if any of the currently used assessors have had formal assessment training. There are very limited quality assurance measures in place that ensure that assessment complies with certain minimum requirements. The **goal** of this study is to make a contribution in the field of assessment in postgraduate education and training. The aim of the study is to develop an acceptable assessment model for registrars in Urology. This model should be acceptable to all stakeholders in higher education.

The **objectives** of the study are as follows:

- a) A thorough literature study that will indicate the lack of a current acceptable assessment model.
- b) A questionnaire survey among qualified urologists that are involved in training and assessment.
- c) The criteria that are important in the assessment model will be identified with the help of the literature study and the questionnaire survey.
- d) A Delphi process will be used to test the criteria.
- e) The model will be finalised with the incorporation of quality assurance mechanisms.

The **Delphi process** depends on two basic assumptions namely:

- 1) Decisions made by a group of experts are of higher validity than a decision made by a single person.
- 2) Face to face interaction might cause group bias and domineering members of the panel might prevail. This is prevented by using the Delphi method.

Your involvement in the study

I will be grateful to you if you can serve as an expert panelist as part of the Delphi process. I recognise that your time is valuable and need only 30-45 minutes of your time to complete the questionnaire survey. The survey will be e-mailed to you and a hard copy will be faxed to you if required.

The Delphi process will take place from May to July 2011. If you are willing to be part of the Delphi process, please complete the attached consent form and return it to me as soon as possible.

I thank you for your attention and sincerely hope that you will be able to assist me with this process. I look forward to hear from you.

Yours sincerely

PROF. DR S.W. WENTZEL

(STUDENT NR 197962231)

ETHICS NUMBER: ETOVS 56/07

DEPARTMENT OF UROLOGY, FACULTY OF HEALTH SCIENCES, FREE STATE UNIVERSITY

BLOEMFONTEIN

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Faks/Fax: (051) 444 0875

Departementshoof/Head of Department: Professor SW Wentzel

.....2011

CONSENT FORM: DELPHI PROCESS

I, the undersigned hereby give my consent to participate in the Delphi Process. The Delphi process is scheduled to take place from May to September 2011. My particulars are as follows:

Title:

Surname:

Full Initials:

Postal Address:

e-mail address:

Telephone Number:

Cellular Number:

Signature:

Please return this form by e-mail or to the following postal address on or before 26 April 2011.

PO Box 43087, Heuwelsig, Bloemfontein 9332

e-mail address: wentzelS@ufs.ac.za

APPENDIX D (INCLUDING APPENDICES D1-D5)

- APPENDIX D1: ACCOMPANYING LETTER TO DELPHI PANEL ROUND ONE:
AN ASSESSMENT MODEL FOR REGISTRARS IN UROLOGY**
- APPENDIX D2: DELPHI PROCESS PART ONE**
- APPENDIX D3: RESULTS DELPHI ROUND ONE, EXCEL SPREAD SHEET**
- APPENDIX D4: FEEDBACK LETTER ON DELPHI ROUND ONE**
- APPENDIX D5: FEEDBACK QUESTIONNAIRE DELPHI PROCESS ROUND
ONE**

ACCOMPANYING LETTER TO DELPHI PANEL ROUND ONE: AN ASSESSMENT MODEL FOR REGISTRARS IN UROLOGY

Dear Delphi participant,

Thank you for agreeing to participate in this Delphi research process. Attached please find the first round questionnaire for the Delphi process. Thank you for making time to complete this document and for returning it to me, your willingness to participate in this research is very much appreciated. The attached questionnaire was compiled after conducting a thorough literature review as well as a battery of questionnaires with clinical educators.

INFORMATION ON THE STRUCTURE OF THE QUESTIONNAIRE

The structuring of the questionnaire has been developed in order for you to offer your opinion regarding the relative importance of the listed statements. These statements are all envisaged to contribute to the compiling of an assessment model for registrars in Urology. The questionnaire contains numbered statements that also provide the opportunity to offer additional suggestions and comments. The questionnaire is subdivided into nine sections from A through I. In each section precise statements are provided that indicate the specific theme of that section to you. You are welcome to add your comments in the "comments" column. Please add extra comments on an extra page if you run out of space.

PROCEDURE OF THE DELPHI PROCESS

The opinion of each participant is needed with regard to the relevance and importance of each statement for the development of the assessment model. All information provided and opinions offered by all participants will be treated as strictly confidential. Please note that no respondent will know the identity of any other respondent. The researcher and supervisors alone will have knowledge of the identity of the respondents. In terms of the research process, please ensure that you keep all information pertaining to this research and questionnaire confidential. This will also be applicable to the subsequent rounds of the Delphi process. The Delphi process has proved to be a very useful research tool and particularly in terms of health based research where predictions and strategies around health and health education are developed. The researcher would like to stress once again that it is of utmost importance that no discussion takes place around the contents of the questionnaire, as this would contaminate the research process.

The Delphi process is conducted in such a way that feedback will be given to all participants. The researcher will indicate outcomes of each statement in the follow-up rounds.

PLEASE ANSWER ALL QUESTIONS IN ALL SECTIONS

PLEASE COMPLETE THE QUESTIONNAIRE AS FOLLOWS:

In sections A-H, each statement must be evaluated in respect of its importance towards the development of an assessment model for postgraduate students in Urology. In section I your opinion about different aspects of currently used assessment models in postgraduate Urology students is asked. Please indicate your opinion on the three-point Likert scale provided. These points are defined as follows:

- 1 = Essential (this criterion must **DEFINITELY BE INCLUDED** in the assessment model)
- 2 = Useful (it **DOES NOT MATTER** whether this criterion is included in the assessment model)
- 3 = Unnecessary (this criterion must **DEFINITELY BE EXCLUDED** from the assessment model)

If possible, please complete the questionnaire in its electronic form. If, however, you prefer to print it out and complete it in paper format, please feel free to do so. In both cases please answer all the questions by placing an **X** over the specific number of your choice in the scale

provided with each statement. Space is also provided in each section for any further comments that you would like to make regarding that particular section.

The questionnaire in this round should take up at most approximately one hour of your time.

Please contact me if anything is unclear to you. Thank you for agreeing to spend your time to help me to complete this important initiative.

Thanking you in anticipation

Schalk W. Wentzel (Researcher)
MBChB (UFS), MMed (Urology)
Student Number: 197962231
Department of Urology
Faculty of Health Sciences
University of the Free State
Bloemfontein
9301

PLEASE TAKE NOTE:

Please save the attached Delphi Questionnaire as a word document on your computer before completing it. Send the completed questionnaire back to me as an attachment to an e-mail message or fax back to: (051) 4449875 Or (051)4444358.

DELPHI PROCESS PART ONE**SECTION A:
OUTCOMES-BASED EDUCATION AND ASSESSMENT IN HIGHER EDUCATION**

In this section certain statements are made about the knowledge, attitude and role of the assessor in outcomes-based education.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	An assessor has to have knowledge of current changes in higher education				
2.	An assessor needs a positive attitude towards the changes in higher education				
3.	An assessor must be willing to learn about changes in higher education				
4.	An assessor must understand the differences between assessment and evaluation				
5.	Assessors must be formally trained in the principles of assessment				

**SECTION B:
THE PURPOSE OF ASSESSMENT**

Part 1: In this section certain statements are made about the purpose of assessment.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	The goal of assessment is to certify that a specific level of performance has been achieved				
2.	Assessment should be a learning experience for both learners and assessors				
3.	The purpose of assessment is to give learners the opportunity to monitor their progress				
4.	Assessment can identify areas where adjustments in teaching and learning could be made				

5.	The purpose of assessment is to classify or rank the performance of students				
6.	The purpose of assessment is to grade students' knowledge into a point on an arbitrary scale				
7.	The purpose of assessment is to select the best available students				
8.	The purpose of assessment is to judge the readiness of students to enter the next phase of a programme				

Part 2: Different forms of assessment are used as part of outcomes-based education.

Please indicate how important each of the following types of assessment is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Diagnostic Assessment				
2.	Formative Assessment				
3.	Summative Assessment				

SECTION C: LEARNER ASSESSMENT

This section deals with issues related to mechanisms for learner assessment in order to ensure good assessment practices.

Take a look at the following statements regarding mechanisms for learner assessment.

Please indicate how important each of the statements is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	The outcome for every student in a programme should be equivalent and clearly stated				
2.	The assessment process must be objective				
3.	Learner responsibilities must be defined				
4.	Assessment criteria must be available for every one of the abilities/skills that will be assessed				
5.	An assessment task force/committee that includes experts must be appointed				
6.	Assessment must be integrated and must cover all aspects of the learning programme				
7.	Assessment must be uniform across all subjects/modules				
8.	Assessors must receive formal training in assessment methodology in terms of Higher Education Quality Control requirements for assessors				

9.	Assessment must be moderated by appropriately trained moderators with specific expertise in the learning area				
10.	Learner assessments must be moderated to ensure that the required standards of assessment are reached				
11.	Learner assessments must be moderated to ensure that the assessment is appropriate				
12.	Learner assessments must be moderated to ensure that the assessment is fair				

SECTION D: QUALITY ASSURANCE IN ASSESSMENT

This section deals with issues related to quality assurance in assessment.

Look at the following statements regarding quality assurance in assessment.

Please indicate how important each of the following quality assurance mechanisms in assessment is according to the scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Learners must be assessed more than once per module (various assessments)				
2.	Dates of assessment must be communicated to learners in advance				
3.	Learners must have enough opportunity to prepare for assessment				
4.	Learners must know how the weight of the individual parts of the assessment is determined				
5.	The learning content that will be covered in the assessment must be explained to the learners				
6.	The type of questions that will be asked must be discussed with learners				
7.	Colleagues must be consulted with regards to judgement on the outcomes that are covered				
8.	Colleagues must be consulted with regards to judgement on the assessment process				
9.	Procedures must be in place to ensure reliability in assessment				
10.	Procedures must be in place to ensure validity of assessment				
11.	Procedures must be in place to ensure trustworthiness in assessment				
12.	Memorandums must be an integral part of all assessments				
13.	A scoring rubric (with predefined criteria) should be used to ensure objectivity and consistency				
14.	A policy on assessment must be available and must be followed closely as part of all assessments				

**SECTION E:
PRINCIPLES OF ASSESSMENT**

This section deals with the principles of assessment.

Look at the following statements regarding certain principles of assessment.

Please indicate how important each of the principles of assessment is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Assessment must be an integral part of learning				
2.	Assessment must focus on deep, active learning processes				
3.	Higher order cognitive skills must be in assessed as part of the assessment process				
4.	The pre-defined assessment purposes should determine the assessment methods that will be used				
5.	Relevant assessment criteria should be applied and must be available to learners				
6.	The assessment process should be reliable				
7.	The assessment process should be transparent				
8.	The assessment process should be fair				
9.	Procedures must be in place that ensures validity of assessment				
10.	The assessment workload of examiners should be realistic				
11.	The assessment methods should include a wide range of approaches				
12.	Feedback must be given to learners after assessment to support the learning process				
13.	Quality assurance procedures must be in place and must be strictly adhered to				

**SECTION F:
PLANNING AND CONSTRUCTING OF ASSESSMENT**

This section deals with issues related to the planning and constructing of assessment.

Look at the following statements about the planning and constructing of the assessment process.

Please indicate the importance of each factor in the planning and construction of assessment according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Clear stated outcomes must be formulated as part of the construction of assessment				
2.	The capabilities that must be assessed must be identified				
3.	The skills that must be assessed must be identified				
4.	The assessment methods must be in agreement with the knowledge, skills and attitudes outcomes that was defined at the start of the module				
5.	Different levels of knowledge and skills must be assessed (e.g. according to Bloom's taxonomy)				
6.	A variety of assessment methods must be used				
7.	Both formative and summative assessment must be included in the assessment				
8.	Self-assessment must be part of the assessment process				
9.	Assessment criteria must be developed and used during assessment				
10.	Criteria-referenced assessment methods should be used during assessment				
11.	Norm-referenced assessment methods should be used during assessment				
12.	Students' results must be analysed and interpreted by both the assessor and the moderator				
13.	Feedback must be planned beforehand and must be given shortly after conclusion of assessment (within a pre-arranged timeframe)				
14.	The feedback method must be planned before commencement of the assessment process				

SECTION G: FEEDBACK ON ASSESSMENT AND THE USE OF ASSESSMENT RESULTS

This section deals with issues related to feedback on assessment and the use of assessment results.

The following statements deal with the process of feedback and the use of the assessment results.

Please indicate how important each of the statements is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	The assessment results must be analysed comprehensively				
2.	The assessment results must be interpreted correctly				
3.	Feedback must be given in a timely fashion after an assessment				
4.	Various methods must be used to give				

	feedback				
5.	Learners must be informed about the goal and importance of feedback				

SECTION H: TYPES / STRATEGIES OF ASSESSMENT

This section deals with different types / strategies of assessment.

Look at the following types and strategies of assessment.

Please indicate how important each of the following types and strategies of assessment are according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Alternative assessment				
2.	Authentic assessment				
3.	Traditional assessment				
4.	Criterion-referenced assessment				
5.	Norm-referenced assessment				
6.	Diagnostic assessment				
7.	Formative assessment				
8.	Summative assessment				
9.	Performance-based assessment				
10.	Self-assessment				

SECTION I: ASSESSMENT METHODS AND THEIR APPROPRIATENESS

This section deals with assessment methods and appropriateness.

This section deals with different methods that are currently used in the assessment of registrars. Each method of assessment will be discussed separately. In the first part you will be asked to judge factors associated with the compilation of the specific type of assessment. In the second part you will be asked to rate the value of each type of assessment as an important part of the assessment process.

General comments about the specific assessment method will be added in some cases. Please give your opinion about the statement made and add appropriate comments where necessary. Extra comments can be added on a loose piece of folio paper

Question 1: Short questions

1A: Compilation and marking of short questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
1.A.1	To compile the questions for this assessment method			
1.A.2	To mark this assessment			
1.A.3	To give feedback on this assessment method			

1B: Value of short questions

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
1.B.1	The knowledge of the learner			
1.B.2	The skills of the learner			
1.B.3	The professional behaviour (including attitudes and values) of the learner			
1.B.4	The clinical competence of the learner			

1C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

1D: General Comments

Take a look at the following statements about short questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
1.D.1	This method of assessment tests knowledge over a wide area of the subject			
1.D.2	This method is a good test of factual knowledge			
1.D.3	This method of assessment is time consuming to compile and therefore not used by many assessors			

Question 2: MCQ's (Multiple Choice Questions)**2A: Compilation and marking of multiple choice questions**

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
2.A.1	To compile the questions for this assessment method			
2.A.2	To mark this assessment			
2.A.3	To give feedback on this assessment method			

2B: Value of multiple choice questions

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
2.B.1	The knowledge of the learner			
2.B.2	The skills of the learner			
2.B.3	The professional behaviour (including attitudes and values) of the learner			
2.B.4	The clinical competence of the learner			

2C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

2D: General Comments

Take a look at the following statements about MCQ's. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
2.D.1	This is a good method when high numbers of students is assessed because it is quick to mark			
2.D.2	It is a "puzzle for monkeys" and only useful in student factories where thousands of students are assessed at the same time			
2.D.3	This method is a good indicator of the extent of the student's knowledge			
2.D.4	It is a useless method except for educated guessing			

Question 3: Essay-type questions

3A: Compilation and marking of essay-type questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
3.A.1	To compile the questions for this assessment method			
3.A.2	To mark this assessment			
3.A.3	To give feedback on this assessment method			

3B: Value of essay-type questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
3.B.1	The knowledge of the learner			
3.B.2	The skills of the learner			
3.B.3	The professional behaviour (including attitudes and values) of the learner			
3.B.4	The clinical competence of the learner			

3C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

3D: General Comments

Take a look at the following statements about essay-type questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
3.D.1	This assessment method is a good indicator of academic knowledge and a structured thought process			
3.D.2	This method test knowledge as well as comprehension, insight, logic, judgement and the ability to organise and communicate information			
3.D.3	This method test a candidate's ability to organise his/her knowledge			
3.D.4	This method is quick to mark			
3.D.5	This method exposes deficits in a candidate's knowledge			

Question 4: Case studies (paper)

4A: Compilation of paper case study questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
4.A.1	To compile the questions for this assessment method			
4.A.2	To mark this assessment			
4.A.3	To give feedback on this assessment method			

4B: Value of paper case study questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
4.B.1	The knowledge of the learner			
4.B.2	The skills of the learner			
4.B.3	The professional behaviour (including attitudes and values) of the learner			
4.B.4	The clinical competence of the learner			

4C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

4D: General Comments

Take a look at the following statements about paper case study questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
4.D.1	This method tests integration of facts and gives the candidate a good working knowledge			
4.D.2	This method tests the candidate's attitude, insight and thought processes			
4.D.3	This method tests the candidate's ability to manage "real-life" situations			

4.D.4	This method is a good indicator of a structured thought process and the candidate's approach to clinical problems			

Question 5: Orals (Vivas)

5A: Compilation of questions for oral examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
5.A.1	To compile the questions for this assessment method			
5.A.2	To mark this assessment			
5.A.3	To give feedback on this assessment method			

5B: Value of questions for oral examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
5.B.1	The knowledge of the learner			
5.B.2	The skills of the learner			
5.B.3	The professional behaviour (including attitudes and values) of the learner			
5.B.4	The clinical competence of the learner			

5C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

5D: General Comments

Take a look at the following statements about questions for oral examinations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
5.D.1	This method is a test of the candidate's communication skills and structured thought process under pressure			
5.D.2	This method can test in-depth knowledge over a wide range of subjects in rapid manner			
5.D.3	This method tests the candidate's ability to "argue" their case with the assessor			

Question 6: Clinical cases

6A: Compilation and questions for "real life" clinical cases

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
6.A.1	To compile the questions for this assessment method			
6.A.2	To mark this assessment			
6.A.3	To give feedback on this assessment method			

6B: Value of "real life" clinical cases

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
6.B.1	The knowledge of the learner			
6.B.2	The skills of the learner			
6.B.3	The professional behaviour (including attitudes and values) of the learner			
6.B.4	The clinical competence of the learner			

6C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

6D: General Comments

Take a look at the following statements about questions for "real life" clinical situations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
6.D.1	This method tests integration of knowledge			
6.D.2	By using this method examiners can objectively observe a candidate's ability to completely examine a patient			
6.D.3	This method is the best way to test ability to apply knowledge necessary for problem-solving in "real life" situations			
6.D.4	This method is critical for the evaluation of a candidate's clinical skills			

Question 7: OSCE's (Objectively structured clinical examinations)

7A: Compilation of questions for OSCE examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
7.A.1	To compile the questions for this assessment method			
7.A.2	To mark this assessment			
7.A.3	To give feedback on this assessment method			

7B: Value of questions for OSCE examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
7.B.1	The knowledge of the learner			
7.B.2	The skills of the learner			
7.B.3	The professional behaviour (including attitudes and values) of the learner			
7.B.4	The clinical competence of the learner			

7C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

7D: General Comments

Take a look at the following statements about OSCE questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
7.D.1	This method is useful to cover large areas of the study field in a short time			
7.D.2	This method can test areas of clinical importance that cannot be tested in a clinical case scenario or in an oral examination			
7.D.3	This method can test a candidate's ability to deal with a clinical scenario in the absence of a patient			
7.D.4	This method can test a candidate's ability to apply their knowledge in practical situations			

Question 8: Portfolios

8A: Value of portfolios

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
8.A.1	The knowledge of the learner			
8.A.2	The skills of the learner			
8.A.3	The professional behaviour (including attitudes and values) of the learner			
8.A.4	The clinical competence of the learner			

8B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

8C: General Comments

Take a look at the following statements about portfolios. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
8.C.1	This method may be useful to determine if a candidate has sufficient experience to be admitted to the final formative examination			
8.C.2	Essential for formative assessment of candidates			
8.C.3	This method is currently very fashionable but of doubtful value			

Question 9: Assignments

9A: Value of assignments

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
9.A.1	The knowledge of the learner			
9.A.2	The skills of the learner			
9.A.3	The professional behaviour (including attitudes and values) of the learner			
9.A.4	The clinical competence of the learner			

9B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

9C: General Comments

Take a look at the following statements about assignments. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
9.C.1	This method is of no use in assessment			
9.C.2	This method may be a useful learning exercise if used in the correct scenario (like as part of the academic programme of the department)			

Question 10: Scripts- / Mini-dissertations

10A: Value of scripts/mini-dissertations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
10.A.1	The knowledge of the learner			
10.A.2	The skills of the learner			
10.A.3	The professional behaviour (including attitudes and values) of the learner			

10.A.4	The clinical competence of the learner			

10B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

10C: General Comments

Take a look at the following statements about scripts / mini-dissertations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
10.C.1	Research is an integral part of post-graduate education			
10.C.2	It is essential for a candidate to learn about and apply the principles of research			
10.C.3	A dissertation helps the student to learn about the principles of research methodology			
10.C.4	This method teaches the student to learn how to critically evaluate the available literature about any given subject			
10.C.5	This method gives the student the opportunity to contribute to the solution of problems and the expansion of knowledge in their field of research			

THIS IS THE END OF THE DELPHI PROCESS. THANK YOU FOR THE TIME AND EFFORT YOU TOOK TO COMPLETE THE DELPHI PROCESS. THE RESEARCHER APPRECIATES YOUR PARTICIPATION.

	APPENDIX D3																																						
	1			2			3			4			5			6			7			8			9			10			11			12			TOTAL		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
A1	1			1			1			1			1			1			1			1			1			1						7	3	0			
A2	1					1	1				1			1			1			1				1				1						3	6	1			
A3	1				1					1				1				1			1				1			1						7	3	0			
A4	1				1					1				1				1			1				1			1						7	3	0			
A5	1			1				1			1			1				1			1				1			1						4	6	0			
B1	1			1				1				1				1				1				1				1						9	1	0			
B2		1			1			1				1				1				1				1				1						3	7	0			
B3	1				1			1				1				1				1				1				1						7	3	0			
B4	1				1			1				1				1				1				1				1						5	5	0			
B5	1			1				1				1				1				1				1				1						5	5	0			
B6			1			1			1			1				1				1				1				1						2	6	2			
B7		1				1			1			1				1				1				1				1						1	7	2			
B8	1			1				1				1				1				1				1				1						8	2	0			
B2.1	1			1				1						1					1					1				1						6	1	1			
B2.2	1				1			1						1					1					1				1						6	2	0			
B2.3	1				1			1						1					1					1				1						6	2	0			
C1		1				1			1					1					1					1				1						4	3	2			
C2	1			1				1				1				1				1				1				1						7	3	0			
C3	1				1			1				1				1				1				1				1						6	3	1			
C4		1		1				1				1				1				1				1				1						6	3	1			
C5		1			1				1				1			1				1				1				1			1			2	5	3			
C6	1			1				1				1				1				1				1				1						5	4	1			
C7		1			1			1				1				1				1				1				1						3	4	3			
C8	1			1				1				1				1				1				1				1						4	5	1			
C9		1		1				1				1				1				1				1				1						7	3	0			

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**FEEDBACK LETTER ON DELPHI ROUND ONE
AN ASSESSMENT MODEL FOR REGISTRARS IN UROLOGY**

Dear Delphi participant,

Thank you once again for the time and effort you put in to assist me in this process. I attach the results of Round One of the Delphi process to this letter. The aim of the feedback is to provide you with the results and information that was gained in round one. **This is for your information only and you do not need to do anything with it.**

According to Larson and Wissman consensus is reached when 80% of the participants award the same value to a certain statement that was included in the questionnaire. In Round One of this Delphi process consensus was reached on 59 out of a possible 181 statements (32, 6%). All these statements will be removed from Round Two and you will only have to consider the remaining statements consensus was not reached on that will be send to you in the next week.

In the attached feedback I have shaded all the statements where consensus has been reached. I have also included comments that were made by the participants for your information. I shall address all the comments that were made in the final chapter of this thesis and therefore I have not included my own response to your comments in this feedback paper. I have addressed the enquiries and questions raised by the participants in Round One as well. My comments are indicated below the participants' enquiry/question in bold as follows: **Answer SWW**. I hope this will assist you to clarify your uncertainties about these statements in the following rounds. In the statements where consensus was not reached, I have included the numerical values that were awarded by the participants to the different options for that specific statement. These values are shown in red. Certain participants in the Delphi process did not answer all the questions; this will explain why some statements have less than ten responses.

Once again my sincere thanks for your participation in my research. I really appreciate your time and effort. Round Two of the Delphi process will follow shortly; it will be much shorter than Round One and will take less time to complete.

Kind regards,

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FEEDBACK QUESTIONNAIRE DELPHI PROCESS ROUND ONE**SECTION A:
OUTCOMES-BASED EDUCATION AND ASSESSMENT IN HIGHER EDUCATION**

In this section certain statements are made about the knowledge, attitude and role of the assessor in outcomes-based education.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	An assessor has to have knowledge of current changes in higher education	7	3	0	
2.	An assessor needs a positive attitude towards the changes in higher education	3	6	1	Changes may be debatable e.g. failure of some outcome based programs.
3.	An assessor must be willing to learn about changes in higher education	7	3	0	
4.	An assessor must understand the differences between assessment and evaluation	7	3	0	
5.	Assessors must be formally trained in the principles of assessment	4	6	0	Formal training (Generic) vs. experience gained (specific)

**SECTION B:
THE PURPOSE OF ASSESSMENT**

Part 1: In this section certain statements are made about the purpose of assessment.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	The goal of assessment is to certify that a specific level of performance has been achieved				
2.	Assessment should be a learning experience for both learners and assessors	3	7	0	
3.	The purpose of assessment is to give learners the opportunity to monitor their progress	7	3	0	
4.	Assessment can identify areas where adjustments in teaching and learning could be	5	5	0	

	made				
5.	The purpose of assessment is to classify or rank the performance of students	5	5	0	
6.	The purpose of assessment is to grade students' knowledge into a point on an arbitrary scale	2	6	2	
7.	The purpose of assessment is to select the best available students	1	7	2	
8.	The purpose of assessment is to judge the readiness of students to enter the next phase of a programme				

Part 2: Different forms of assessment are used as part of outcomes-based education.

Please indicate how important each of the following types of assessment is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Diagnostic Assessment				
2.	Formative Assessment				
3.	Summative Assessment				

SECTION C: LEARNER ASSESSMENT

This section deals with issues related to mechanisms for learner assessment in order to ensure good assessment practices.

Take a look at the following statements regarding mechanisms for learner assessment.

Please indicate how important each of the statements is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	The outcome for every student in a programme should be equivalent and clearly stated	4	3	2	Outcome failures will occur; Question not clear
2.	The assessment process must be objective	7	3	0	Expert judgement has been found to be an excellent marker of competence
3.	Learner responsibilities must be defined	6	3	1	To be established at an earlier level
4.	Assessment criteria must be available for every one of the abilities/skills that will be assessed	6	3	1	Not in post-graduate studies
5.	An assessment task force/committee that	2	5	3	Not practical; Experts

	includes experts must be appointed				"generic" or "specific"?
6.	Assessment must be integrated and must cover all aspects of the learning programme	5	4	1	
7.	Assessment must be uniform across all subjects/modules	3	4	3	The assessment must be appropriate for the subject/module. One size does not fit all.
8.	Assessors must receive formal training in assessment methodology in terms of Higher Education Quality Control requirements for assessors	4	5	1	Does this means that assessors must be "formally" licensed? Answer SW Wentzel: Will be addressed in the thesis
9.	Assessment must be moderated by appropriately trained moderators with specific expertise in the learning area	7	3	0	
10.	Learner assessments must be moderated to ensure that the required standards of assessment are reached	7	3	0	
11.	Learner assessments must be moderated to ensure that the assessment is appropriate	7	2	1	"Assessment task force" must be trusted on appointment
12.	Learner assessments must be moderated to ensure that the assessment is fair				

SECTION D: QUALITY ASSURANCE IN ASSESSMENT

This section deals with issues related to quality assurance in assessment.

Look at the following statements regarding quality assurance in assessment.

Please indicate how important each of the following quality assurance mechanisms in assessment is according to the scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Learners must be assessed more than once per module (various assessments)	4	4	2	Impractical due to tome and personnel constraints
2.	Dates of assessment must be communicated to learners in advance	5	4	1	"Continuous" application versus "cramming"
3.	Learners must have enough opportunity to prepare for assessment	4	6	0	Do not "surprise" them, but need continuous application instead of "cramming"
4.	Learners must know how the weight of the individual parts of the assessment is determined	6	4	0	
5.	The learning content that will be covered in the assessment must be explained to the learners	5	4	1	Not for post-graduate students
6.	The type of questions that will be asked must be discussed with learners	3	3	4	
7.	Colleagues must be consulted with regards to judgement on the outcomes that are covered	5	2	3	

8.	Colleagues must be consulted with regards to judgement on the assessment process	4	5	1	Judgement on process can be reviewed annually. Less meetings!
9.	Procedures must be in place to ensure reliability in assessment				
10.	Procedures must be in place to ensure validity of assessment				
11.	Procedures must be in place to ensure trustworthiness in assessment				Appoint the "assessors" with care
12.	Memorandums must be an integral part of all assessments	4	5	1	And not laborious
13.	A scoring rubric (with predefined criteria) should be used to ensure objectivity and consistency	4	5	1	
14.	A policy on assessment must be available and must be followed closely as part of all assessments	6	3	1	Can be adjusted annually to ensure less meetings

SECTION E: PRINCIPLES OF ASSESSMENT

This section deals with the principles of assessment.

Look at the following statements regarding certain principles of assessment.

Please indicate how important each of the principles of assessment is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Assessment must be an integral part of learning				In professional certification, YES
2.	Assessment must focus on deep, active learning processes	4	6	0	Not "processes" beyond assessors
3.	Higher order cognitive skills must be in assessed as part of the assessment process	7	3	0	
4.	The pre-defined assessment purposes should determine the assessment methods that will be used	6	4	0	
5.	Relevant assessment criteria should be applied and must be available to learners	7	3	0	
6.	The assessment process should be reliable				
7.	The assessment process should be transparent				
8.	The assessment process should be fair				
9.	Procedures must be in place that ensures validity of assessment				Not too labour intensive
10.	The assessment workload of examiners should be realistic				
11.	The assessment methods should include a wide range of approaches	6	4	0	As long as all are robust and proven to be reliable and valid
12.	Feedback must be given to learners after assessment to support the learning process	7	3	0	

13.	Quality assurance procedures must be in place and must be strictly adhered to	6	4	0	Not too labour intensive; For post-graduate students where you test approach, it may be difficult

SECTION F: PLANNING AND CONSTRUCTING OF ASSESSMENT

This section deals with issues related to the planning and constructing of assessment.

Look at the following statements about the planning and constructing of the assessment process.

Please indicate the importance of each factor in the planning and construction of assessment according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Clear stated outcomes must be formulated as part of the construction of assessment	7	3	0	
2.	The capabilities that must be assessed must be identified	7	3	0	
3.	The skills that must be assessed must be identified				
4.	The assessment methods must be in agreement with the knowledge, skills and attitudes outcomes that was defined at the start of the module	6	4	0	
5.	Different levels of knowledge and skills must be assessed (e.g. according to Bloom's taxonomy)				
6.	A variety of assessment methods must be used	4	6	0	As long as all are robust and proven to be reliable and valid; Do not attempt "over kill"
7.	Both formative and summative assessment must be included in the assessment				
8.	Self-assessment must be part of the assessment process	3	6	1	It has been shown to be quite unreliable in the literature; Subjective honesty implied
9.	Assessment criteria must be developed and used during assessment				Criteria cannot be re-adjusted for each group. Adjust annually if needed
10.	Criteria-referenced assessment methods should be used during assessment	3	6	0	Not sure what this refers to: Is it the standard setting criteria? Answer SW Wentzel: Student's performance is judged against pre-specified criteria; Difficult to apply when criteria are continuously "redeveloped"

11.	Norm-referenced assessment methods should be used during assessment				Not sure what this refers to: Is it the standard setting criteria? Answer SWW: student's performance is compared with peers in the same class or cohort.
12.	Students' results must be analysed and interpreted by both the assessor and the moderator	5	4	1	
13.	Feedback must be planned beforehand and must be given shortly after conclusion of assessment (within a pre-arranged timeframe)	7	3	0	
14.	The feedback method must be planned before commencement of the assessment process	3	7	0	

SECTION G: FEEDBACK ON ASSESSMENT AND THE USE OF ASSESSMENT RESULTS

This section deals with issues related to feedback on assessment and the use of assessment results.

The following statements deal with the process of feedback and the use of the assessment results.

Please indicate how important each of the statements is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	The assessment results must be analysed comprehensively	6	4	0	
2.	The assessment results must be interpreted correctly				
3.	Feedback must be given in a timely fashion after an assessment				There are two types of feedback: Conveying of the marks and discussion of performance. You are not clear on which one you address. Answer SWW: Both aspects must be addressed during feedback
4.	Various methods must be used to give feedback				Why? Answer SWW: Question will be addressed in thesis
5.	Learners must be informed about the goal and importance of feedback	5	3	2	

SECTION H: TYPES / STRATEGIES OF ASSESSMENT

This section deals with different types / strategies of assessment.

Look at the following types and strategies of assessment.

Please indicate how important each of the following types and strategies of assessment are according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Alternative assessment	1	4	2	Answer SWW: Any method that differs from conventional paper-and-pencil tests, most particularly objective tests. Examples include observations, exhibitions, oral presentations, experiments, portfolios, interviews and projects
2.	Authentic assessment	5	2	1	Answer SWW: A form of assessment in which students are asked to perform real-world tasks that demonstrate meaningful application of essential knowledge and skills.
3.	Traditional assessment	1	4	2	Answer SWW: Refers to the forced-choice measures of multiple-choice tests, fill-in-the-blanks, true-false, matching and the like that has been, and remains so common in education.
4.	Criterion-referenced assessment	5	2	0	Answer SWW: Student performance is judged against pre-specified criteria or standards. These criteria should be determined at the outset of the training programme; Difficult to apply
5.	Norm-referenced assessment	1	5	1	Answer SWW: Refers to the practice whereby student performance is compared with that of peers in the same class or cohort; it is associated with the averaging of scores and with attempt to obtain a bell-shaped curve of mark distributions; Difficult to apply
6.	Diagnostic assessment				Answer SWW: This is the type of assessment

					that is used to predict academic potential. This type of assessment takes place in order to rank or place students in a course according to their potential.
7.	Formative assessment	5	4	0	Answer SWW: Assessment that occurs during instruction to provide feedback to teachers and students. It is the type of assessment in which learners' abilities (i.e. knowledge, skills and attitudes as set out in the outcomes) are monitored throughout the training programme.
8.	Summative assessment				Answer SWW: Takes place at the end of the time allotted for the programme, course or qualification. It is still part of the learning process, but differs from formative assessment regarding the time when it occurs within the learning process.
9.	Performance-based assessment				Answer SWW: This is where a teacher observes and makes a judgment about the student's demonstration of a skill or competency in creating a product, constructing a response, or making a presentation.
10.	Self-assessment	2	5	2	Answer SWW: The type of assessment where students are asked to judge their own performance and award a mark.

SECTION I: ASSESSMENT METHODS AND THEIR APPROPRIATENESS

This section deals with assessment methods and appropriateness.

This section deals with different methods that are currently used in the assessment of registrars. Each method of assessment will be discussed separately. In the first part you will be asked to judge factors associated with the compilation of the specific type of assessment. In the second part you will be asked to rate the value of each type of assessment as an important part of the assessment process.

General comments about the specific assessment method will be added in some cases. Please give your opinion about the statement made and add appropriate comments where necessary. Extra comments can be added on a loose piece of folio paper

Question 1: Short questions

1A: Compilation and marking of short questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

(Question: How long is short/average/long time? **Answer SWW:** The idea is that the participant should compare the different assessment methods mentioned in this section with each other as far as compilation and marking of the assessment method goes. The participant must express his opinion on the time needed for this particular assessment method if compared to the other assessment models mentioned in Section I. For example :An essay question might take a short time to compile if compared with the compilation of MCQ's)

		1	2	3
1.A.1	To compile the questions for this assessment method			
1.A.2	To mark this assessment			
1.A.3	To give feedback on this assessment method	4	3	2

1B: Value of short questions

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
1.B.1	The knowledge of the learner			
1.B.2	The skills of the learner	4	5	1
1.B.3	The professional behaviour (including attitudes and values) of the learner	2	5	3
1.B.4	The clinical competence of the learner	3	5	2

1C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Time constraints of assessment allows short, well constructed questions to cover a much wider spectrum of the ability of the individual being assessed; There might be issues with "badly worded" questions and the standard setting of these questions; Mostly used for recall of knowledge and application of knowledge; Easy to administer and mark; Objective and test a wide field of knowledge; Useful for the assessment of factual knowledge.

1D: General Comments

Take a look at the following statements about short questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
1.D.1	This method of assessment tests knowledge over a wide area of the subject			
1.D.2	This method is a good test of factual knowledge			
1.D.3	This method of assessment is time consuming to compile and therefore not used by many assessors	1	3	6

Question 2: MCQ's (Multiple Choice Questions)

2A: Compilation and marking of multiple choice questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
2.A.1	To compile the questions for this assessment method			
2.A.2	To mark this assessment			
2.A.3	To give feedback on this assessment method	3	6	0

2B: Value of multiple choice questions

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
2.B.1	The knowledge of the learner			
2.B.2	The skills of the learner	0	5	4
2.B.3	The professional behaviour (including attitudes and values) of the learner			
2.B.4	The clinical competence of the learner	1	6	3

2C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Good single best answer (SBA) and extended matching items (EMI) questions are the very best ones and offers excellent reliability and validity especially if patient vignettes are used; Useful to see if a student can distinguish clearly; Ambiguity is a problem; Intelligent guessing is possible; Good for testing knowledge and judgement; Test knowledge over a wide field and easy to mark; Difficult to find new questions; An essential component to assess the student's theoretical knowledge and grasp of the fundamentals of his/her chosen course and also of advances in approach in all the areas covered by the curriculum. These include well-defined approaches to all the situations that may be encountered in practice; Include "key feature" and "script-concordance" items and prevent "cueing".

2D: General Comments

Take a look at the following statements about MCQ's. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
2.D.1	This is a good method when high numbers of students is assessed because it is quick to mark			
2.D.2	It is a "puzzle for monkeys" and only useful in student factories where thousands of students are assessed at the same time	2	3	5
2.D.3	This method is a good indicator of the extent of the student's knowledge	5	5	0
2.D.4	It is a useless method except for educated guessing	1	2	7

Question 3: Essay-type questions

3A: Compilation and marking of essay-type questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
3.A.1	To compile the questions for this assessment method	5	5	0
3.A.2	To mark this assessment	1	2	7
3.A.3	To give feedback on this assessment method	2	7	1

3B: Value of essay-type questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
3.B.1	The knowledge of the learner	5	4	1
3.B.2	The skills of the learner	2	3	5
3.B.3	The professional behaviour (including attitudes and values) of the learner	1	4	5
3.B.4	The clinical competence of the learner			

3C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Hopelessly unreliable and problematic in many respects, should be avoided at all costs; By scanning previous papers, candidates might spot questions correctly; There may be "coaching involved which may disadvantage "non-coached" candidates; The question covers a restricted field; Where clear guidelines are in place, structured essays can be psychometrically robust; Good for assessment but often biased; Test depth of knowledge; Evaluate clinical judgement and reasoning; Helps to assess knowledge and writing skills of candidate; Often the best way to determine and gauge insight.

3D: General Comments

Take a look at the following statements about essay-type questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
3.D.1	This assessment method is a good indicator of academic knowledge and a structured thought process	6	1	2
3.D.2	This method test knowledge as well as comprehension, insight, logic, judgement and the ability to organise and communicate information	6	2	1
3.D.3	This method test a candidate's ability to organise his/her knowledge	6	2	1
3.D.4	This method is quick to mark			
3.D.5	This method exposes deficits in a candidate's knowledge	5	3	1

Question 4: Case studies (paper)

(Which method do you refer to? **Answer SWW:** The scenario where certain clinical information is given to the student and the student is then asked to integrate the facts and answer some questions based on the clinical information provided)

4A: Compilation of paper case study questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
4.A.1	To compile the questions for this assessment method	0	3	6
4.A.2	To mark this assessment	1	5	3
4.A.3	To give feedback on this assessment method	1	6	2

4B: Value of paper case study questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
4.B.1	The knowledge of the learner	5	4	0
4.B.2	The skills of the learner	4	3	2
4.B.3	The professional behaviour (including attitudes and values) of the learner	1	5	3
4.B.4	The clinical competence of the learner	3	6	0

4C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Excellent way to gauge integration of knowledge and skills; Useful tool; Good to test application of knowledge and depth of knowledge; Can have varied results; On-screen computer marked test with short, free-text answers provide good summative assessment, With "key-features" questions only critical steps in the clinical decision making process are assessed, allowing more clinical situations to be tested in the allotted period

4D: General Comments

Take a look at the following statements about paper case study questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
4.D.1	This method tests integration of facts and gives the candidate a good working knowledge	6	4	0
4.D.2	This method tests the candidate's attitude, insight and thought processes	4	5	1
4.D.3	This method tests the candidate's ability to manage "real-life" situations	5	4	1
4.D.4	This method is a good indicator of a structured thought process and the candidate's approach to clinical problems			

Question 5: Orals (Vivas)

5A: Compilation of questions for oral examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
5.A.1	To compile the questions for this assessment method	5	3	1
5.A.2	To mark this assessment			
5.A.3	To give feedback on this assessment method	3	6	0

5B: Value of questions for oral examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
5.B.1	The knowledge of the learner			
5.B.2	The skills of the learner	4	5	1
5.B.3	The professional behaviour (including attitudes and values) of the learner	4	4	2
5.B.4	The clinical competence of the learner	7	2	1

5C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Known to have many problems including reliability and intimidation concerns; The combination of direct observation of the candidate (long case) and "mini-clinical exercise (short cases) followed by an oral remains the backbone of summative assessment; An experienced examiner can judge a candidate accurately if the examiner remains neutral; Good for assessment but wide examiner bias; Not a good assessment method because it is too subjective and too limited in spectrum of what can be tested; Knowledge and competence can be tested; Can cover huge areas; To be used as support for other types of assessment, one must accept some students are strong in this regard and others need time to think things through before responding in a written way.

5D: General Comments

Take a look at the following statements about questions for oral examinations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
5.D.1	This method is a test of the candidate's communication skills and structured thought process under pressure			
5.D.2	This method can test in-depth knowledge over a wide range of subjects in rapid manner	6	3	1
5.D.3	This method tests the candidate's ability to "argue" their case with the assessor			

Question 6: Clinical cases

6A: Compilation and questions for "real life" clinical cases

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
6.A.1	To compile the questions for this assessment method	2	4	3
6.A.2	To mark this assessment			
6.A.3	To give feedback on this assessment method	3	6	0

6B: Value of "real life" clinical cases

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
6.B.1	The knowledge of the learner	7	3	0
6.B.2	The skills of the learner	7	3	0
6.B.3	The professional behaviour (including attitudes and values) of the learner	6	3	1
6.B.4	The clinical competence of the learner			

6C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Excellent way of authentic assessment; There is nothing to replace "real life" situations; Good to test skills and clinical competence;
Convener has a tough task setting the exam (time) and often same cases used every time; This is the closest to clinical practice; It is essential; Huge problems with "case specificity" and lack of sampling and hence mostly too unreliable in most instances.

6D: General Comments

Take a look at the following statements about questions for "real life" clinical situations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
6.D.1	This method tests integration of knowledge			
6.D.2	By using this method examiners can objectively observe a candidate's ability to completely examine a patient			
6.D.3	This method is the best way to test ability to apply knowledge necessary for problem-solving in "real life" situations			
6.D.4	This method is critical for the evaluation of a candidate's clinical skills	6	3	1

Question 7: OSCE's (Objectively structured clinical examinations)

7A: Compilation of questions for OSCE examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
7.A.1	To compile the questions for this assessment method	1	2	6
7.A.2	To mark this assessment	3	5	1
7.A.3	To give feedback on this assessment method	2	6	1

7B: Value of questions for OSCE examinations

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
7.B.1	The knowledge of the learner			
7.B.2	The skills of the learner	4	2	4
7.B.3	The professional behaviour (including attitudes and values) of the learner	2	3	5
7.B.4	The clinical competence of the learner	4	5	1

7C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Good method due to wider sampling and reliability levels if conducted properly; Depth is limited unless longer stations are used; A minimum of 10 stations which the student usually visits over the course of 3-4 hours is necessary to achieve a reliability of 0.85-0.90; If well structured it is valuable in multiple assessment; Stations may be too long for accurate answering of students; Objective but also can test clinical competence and skills; To test recognition of clinical signs and tests; Allows one to use many different stations; An excellent way of authentic assessment.

7D: General Comments

Take a look at the following statements about OSCE questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
7.D.1	This method is useful to cover large areas of the study field in a short time			
7.D.2	This method can test areas of clinical importance that cannot be tested in a clinical case scenario or in an oral examination	5	4	1
7.D.3	This method can test a candidate's ability to deal with a clinical scenario in the absence of a patient	5	4	1
7.D.4	This method can test a candidate's ability to apply their knowledge in practical situations			

Question 8: Portfolios

8A: Value of portfolios

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
8.A.1	The knowledge of the learner			
8.A.2	The skills of the learner	3	6	0
8.A.3	The professional behaviour (including attitudes and values) of the learner			
8.A.4	The clinical competence of the learner			

8B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Useful to add to other forms of assessment; Verification not guaranteed; Shows achievement of minimum goal requirements; Quality control of clinical training; Subjective to clinical heads; Close monitoring is required in the assembly and interpretation of the content; Portfolios reflect about specific areas of a trainer's competence and demonstrates his/her development and technical capacity; Very difficult to implement portfolios well; Expensive in terms of manpower needed to assess; Good for reflection on procedures done and as an extension of a logbook.

8C: General Comments

Take a look at the following statements about portfolios. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
8.C.1	This method may be useful to determine if a candidate has sufficient experience to be admitted to the final formative examination	6	4	0
8.C.2	Essential for formative assessment of candidates	4	4	2
8.C.3	This method is currently very fashionable but of doubtful value	4	4	2

Question 9: Assignments

9A: Value of assignments

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
9.A.1	The knowledge of the learner			
9.A.2	The skills of the learner	2	3	4
9.A.3	The professional behaviour (including attitudes and values) of the learner	0	3	6
9.A.4	The clinical competence of the learner	1	4	4

9B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Time consuming and "old hat"; Essential to training; Knowledge develop in a small field; It does stimulate enquiry and research; Make sure that the learner did enough clinical work and identify shortcomings; Not useful; Useful if structured correctly.

9C: General Comments

Take a look at the following statements about assignments. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
9.C.1	This method is of no use in assessment			
9.C.2	This method may be a useful learning exercise if used in the correct scenario (like as part of the academic programme of the department)			

Question 10: Scripts- / Mini-dissertations

10A: Value of scripts/mini-dissertations

Please rate the value of this assessment method to assess the following outcomes:

Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
10.A.1	The knowledge of the learner	2	7	1
10.A.2	The skills of the learner	3	5	2
10.A.3	The professional behaviour (including attitudes and values) of the learner	1	3	6
10.A.4	The clinical competence of the learner	2	5	3

10B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Useful for introduction to engage in research; It teaches the value of critical thinking; Time consuming, develop small window of knowledge; Does stimulate research; Essential for lateral thinking; Registrars have to learn to do research, this is a good method to evaluate their skills in this domain.

10C: General Comments

Take a look at the following statements about scripts / mini-dissertations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
10.C.1	Research is an integral part of post-graduate education			
10.C.2	It is essential for a candidate to learn about and apply the principles of research			
10.C.3	A dissertation helps the student to learn about the principles of research methodology	7	3	0
10.C.4	This method teaches the student to learn how to critically evaluate the available literature about any given subject	7	3	0
10.C.5	This method gives the student the opportunity to contribute to the solution of problems and the expansion of knowledge in their field of research	5	4	1

THIS IS THE END OF THE DELPHI PROCESS. THANK YOU FOR THE TIME AND EFFORT YOU TOOK TO COMPLETE THE DELPHI PROCESS. THE RESEARCHER APPRECIATES YOUR PARTICIPATION.

APPENDIX E (INCLUDING APPENDICES E1-E5)

APPENDIX E1: LETTER TO DELPHI PANEL PART TWO

APPENDIX E2: QUESTIONNAIRE FOR DELPHI PROCESS PANEL ROUND TWO

APPENDIX E3: RESULTS DELPHI ROUND TWO, EXCEL SPREAD SHEET

APPENDIX E4: FEEDBACK LETTER ON DELPHI ROUND TWO

APPENDIX E5: FEEDBACK QUESTIONNAIRE DELPHI PROCESS ROUND TWO

LETTER TO DELPHI PANEL PART TWO

AN ASSESSMENT MODEL FOR REGISTRARS IN UROLOGY

Dear Delphi participant,

Thank you once again for your participation in Round One of the Delphi process which makes out a very important part of my research. The feedback you provided is important for my research project and will be included in Round Two.

PURPOSE OF THE ROUND TWO QUESTIONNAIRES

In Round Two of the Delphi process you will be provided with all the statements on which consensus was **not reached** in Round One. According to the literature, consensus is reached when 80% or more of the participants agree on the same value in the three point scale provided. As explained in the feedback letter sent to you on 4 November 2011, the statements where consensus was reached were removed from the questionnaire in Round Two.

In Round Two of the Delphi process you are given the opportunity to reconsider your opinion on the remaining statements taking into account the anonymous feedback provided by your fellow participants as well as some clarifications made by the researcher. All sections and statements are numbered exactly in the same way as Round One, omitting the statements on which consensus was reached.

INSTRUCTIONS FOR THE COMPLETION OF THE SECOND ROUND

During this round you have to reconsider the statements on which consensus was not reached in Round One. You are allowed to change your opinion after consideration of the anonymous input provided by your fellow participants. You are also allowed to make new comments in the space provided.

Please use the following scale again:

- 1 = Essential (This criterion must **DEFINITELY BE INCLUDED** in the model)
- 2 = Useful (This criterion **CAN BE INCLUDED** in the model)
- 3 = Unnecessary (This criterion must **DEFINITELY BE EXCLUDED** from the model)

The statements on which consensus was not reached is included again. The responses of all the participants are indicated underneath the scale in red (i.e. the number of participants who indicated a particular value of the scale).

For example:

		1	2	3	Comments
1.	An assessor has to have knowledge of current changes in higher education	7	3	0	

You are required to indicate your preference again by marking with a cross (X) what your choice is regarding the statement. For that reason an extra row has been provided where you can indicate your preference on the scale provided.

For example:

		1	2	3	Comments
1.	An assessor has to have knowledge of current changes in higher education	7	3	0	
			X		

You can also add more comments in the space provided if you feel like it. If at all possible, please complete the questionnaire in its electronic form and sent it back to me by e-mail. However, if you want to print it out and complete it in paper format, feel free to do so and return it to me by fax. All the necessary details will be provided again at the end of this letter.

Please answer all the questions in the questionnaire. The questionnaire will not take more than 15 minutes of your time. Your responses will remain confidential and anonymous with regards to the other participants in this process. Please contact me at any time if you are unclear about anything in this letter or the questionnaire.

Please return the completed questionnaires to me before or on the 20th of November 2011. The analysis can only be done once all the questionnaires have been returned and I therefore ask for your cooperation regarding the deadline.

Once again my sincere thanks for the time and effort you put in to assist me in my research. I appreciate it very much and hope to return the favour sometime in the future.

Kind regards,

PROF.DR SW WENTZEL
(STUDENT NR 197962231)
DEPARTMENT OF UROLOGY
FACULTY OF HEALTH SCIENCES
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QUESTIONNAIRE FOR DELPHI PROCESS PANEL ROUND TWO**SECTION A:****OUTCOMES-BASED EDUCATION AND ASSESSMENT IN HIGHER EDUCATION**

In this section certain statements are made about the knowledge, attitude and role of the assessor in outcomes-based education.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	An assessor has to have knowledge of current changes in higher education	7	3	0	
2.	An assessor needs a positive attitude towards the changes in higher education	3	6	1	
3.	An assessor must be willing to learn about changes in higher education	7	3	0	
4.	An assessor must understand the differences between assessment and evaluation	7	3	0	
5.	Assessors must be formally trained in the principles of assessment	4	6	0	

SECTION B:**THE PURPOSE OF ASSESSMENT**

Part 1: In this section certain statements are made about the purpose of assessment.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
2.	Assessment should be a learning experience for both learners and assessors	3	7	0	
3.	The purpose of assessment is to give learners the opportunity to monitor their progress	7	3	0	
4.	Assessment can identify areas where adjustments in teaching and learning could be made	5	5	0	

5.	The purpose of assessment is to classify or rank the performance of students	5	5	0	
6.	The purpose of assessment is to grade students' knowledge into a point on an arbitrary scale	2	6	2	
7.	The purpose of assessment is to select the best available students	1	7	2	

SECTION C: LEARNER ASSESSMENT

This section deals with issues related to mechanisms for learner assessment in order to ensure good assessment practices.

Take a look at the following statements regarding mechanisms for learner assessment.

Please indicate how important each of the statements is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	The outcome for every student in a programme should be equivalent and clearly stated	4	3	2	
2.	The assessment process must be objective	7	3	0	
3.	Learner responsibilities must be defined	6	3	1	
4.	Assessment criteria must be available for every one of the abilities/skills that will be assessed	6	3	1	
5.	An assessment task force/committee that includes experts must be appointed	2	5	3	
6.	Assessment must be integrated and must cover all aspects of the learning programme	5	4	1	
7.	Assessment must be uniform across all subjects/modules	3	4	3	
8.	Assessors must receive formal training in assessment methodology in terms of Higher Education Quality Control requirements for assessors	4	5	1	
9.	Assessment must be moderated by appropriately trained moderators with specific expertise in the learning area	7	3	0	
10.	Learner assessments must be moderated to ensure that the required standards of assessment are reached	7	3	0	
11.	Learner assessments must be moderated to ensure that the assessment is appropriate	7	2	1	

SECTION D:
QUALITY ASSURANCE IN ASSESSMENT

This section deals with issues related to quality assurance in assessment.

Look at the following statements regarding quality assurance in assessment.
Please indicate how important each of the following quality assurance mechanisms in assessment is according to the scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.
Please add your comments where you feel that it is necessary.
Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Learners must be assessed more than once per module (various assessments)	4	4	2	
2.	Dates of assessment must be communicated to learners in advance	5	4	1	
3.	Learners must have enough opportunity to prepare for assessment	4	6	0	
4.	Learners must know how the weight of the individual parts of the assessment is determined	6	4	0	
5.	The learning content that will be covered in the assessment must be explained to the learners	5	4	1	
6.	The type of questions that will be asked must be discussed with learners	3	3	4	
7.	Colleagues must be consulted with regards to judgement on the outcomes that are covered	5	2	3	
8.	Colleagues must be consulted with regards to judgement on the assessment process	4	5	1	
12.	Memorandums must be an integral part of all assessments	4	5	1	
13.	A scoring rubric (with predefined criteria) should be used to ensure objectivity and consistency	4	5	1	
14.	A policy on assessment must be available and must be followed closely as part of all assessments	6	3	1	

SECTION E:
PRINCIPLES OF ASSESSMENT

This section deals with the principles of assessment.

Look at the following statements regarding certain principles of assessment.
Please indicate how important each of the principles of assessment is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.
Please add your comments where you feel that it is necessary.
Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
2.	Assessment must focus on deep, active learning processes	4	6	0	
3.	Higher order cognitive skills must be in assessed as part of the assessment process	7	3	0	
4.	The pre-defined assessment purposes should determine the assessment methods that will be used	6	4	0	
5	Relevant assessment criteria should be applied and must be available to learners	7	3	0	
11.	The assessment methods should include a wide range of approaches	6	4	0	
12.	Feedback must be given to learners after assessment to support the learning process	7	3	0	
13.	Quality assurance procedures must be in place and must be strictly adhered to	6	4	0	

SECTION F:

PLANNING AND CONSTRUCTING OF ASSESSMENT

This section deals with issues related to the planning and constructing of assessment.

Look at the following statements about the planning and constructing of the assessment process.

Please indicate the importance of each factor in the planning and construction of assessment according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.
Please add your comments where you feel that it is necessary.
Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Clear stated outcomes must be formulated as part of the construction of assessment	7	3	0	
2.	The capabilities that must be assessed must be identified	7	3	0	
4.	The assessment methods must be in agreement with the knowledge, skills and attitudes outcomes that was defined at the start of the module	6	4	0	
6.	A variety of assessment methods must be used	4	6	0	
8.	Self-assessment must be part of the assessment process	3	6	1	
10.	Criteria-referenced assessment methods should be used during assessment	3	6	0	
12.	Students' results must be analysed and interpreted by both the assessor and the moderator	5	4	1	

13.	Feedback must be planned beforehand and must be given shortly after conclusion of assessment (within a pre-arranged timeframe)	7	3	0	
14.	The feedback method must be planned before commencement of the assessment process	3	7	0	

SECTION G:

FEEDBACK ON ASSESSMENT AND THE USE OF ASSESSMENT RESULTS

This section deals with issues related to feedback on assessment and the use of assessment results.

The following statements deal with the process of feedback and the use of the assessment results.

Please indicate how important each of the statements is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	The assessment results must be analysed comprehensively	6	4	0	
5.	Learners must be informed about the goal and importance of feedback	5	3	2	

SECTION H:

TYPES / STRATEGIES OF ASSESSMENT

This section deals with different types / strategies of assessment.

Look at the following types and strategies of assessment.

Please indicate how important each of the following types and strategies of assessment are according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Alternative assessment	1	4	2	
2.	Authentic assessment	5	2	1	
3.	Traditional assessment	1	4	2	
4.	Criterion-referenced assessment	5	2	0	
5.	Norm-referenced assessment	1	5	1	
7.	Formative assessment	5	4	0	
10.	Self-assessment	2	5	2	

SECTION I:

ASSESSMENT METHODS AND THEIR APPROPRIATENESS

This section deals with assessment methods and appropriateness.

This section deals with different methods that are currently used in the assessment of registrars. Each method of assessment will be discussed separately. In the first part you will be asked to judge factors associated with the compilation of the specific type of assessment. In the second part you will be asked to rate the value of each type of assessment as an important part of the assessment process.

General comments about the specific assessment method will be added in some cases. Please give your opinion about the statement made and add appropriate comments where necessary. Extra comments can be added on a loose piece of folio paper

Question 1: Short questions

1A: Compilation and marking of short questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
1.A.3	To give feedback on this assessment method	4	3	2

1B: Value of short questions

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
1.B.2	The skills of the learner	4	5	1
1.B.3	The professional behaviour (including attitudes and values) of the learner	2	5	3
1.B.4	The clinical competence of the learner	3	5	2

1C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

1D: General Comments

Take a look at the following statements about short questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
1.D.3	This method of assessment is time consuming to compile and therefore not used by many assessors	1	3	6

Question 2: MCQ's (Multiple Choice Questions)

2A: Compilation and marking of multiple choice questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
2.A.3	To give feedback on this assessment method	3	6	0

2B: Value of multiple choice questions

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
2.B.2	The skills of the learner	0	5	4
2.B.4	The clinical competence of the learner	1	6	3

2C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

2D: General Comments

Take a look at the following statements about MCQ's. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
2.D.2	It is a "puzzle for monkeys" and only useful in student factories where thousands of students are assessed at the same time	2	3	5
2.D.3	This method is a good indicator of the extent of the student's knowledge	5	5	0
2.D.4	It is a useless method except for educated guessing	1	2	7

Question 3: Essay-type questions

3A: Compilation and marking of essay-type questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
3.A.1	To compile the questions for this assessment method	5	5	0
3.A.2	To mark this assessment	1	2	7
3.A.3	To give feedback on this assessment method	2	7	1

3B: Value of essay-type questions

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
3.B.1	The knowledge of the learner	5	4	1
3.B.2	The skills of the learner	2	3	5
3.B.3	The professional behaviour (including attitudes and values) of the learner	1	4	5

3C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

3D: General Comments

Take a look at the following statements about essay-type questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
3.D.1	This assessment method is a good indicator of academic knowledge and a structured thought process	6	1	2
3.D.2	This method test knowledge as well as comprehension, insight, logic, judgement and the ability to organise and communicate information	6	2	1
3.D.3	This method test a candidate's ability to organise his/her knowledge	6	2	1
3.D.5	This method exposes deficits in a candidate's knowledge	5	3	1

Question 4: Case studies (paper)

4A: Compilation of paper case study questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
4.A.1	To compile the questions for this assessment method	0	3	6
4.A.2	To mark this assessment	1	5	3
4.A.3	To give feedback on this assessment method	1	6	2

4B: Value of paper case study questions

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
4.B.1	The knowledge of the learner	5	4	0
4.B.2	The skills of the learner	4	3	2
4.B.3	The professional behaviour (including attitudes and values) of the learner	1	5	3
4.B.4	The clinical competence of the learner	3	6	0

4C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

4D: General Comments

Take a look at the following statements about paper case study questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
4.D.1	This method tests integration of facts and gives the candidate a good working knowledge	6	4	0
4.D.2	This method tests the candidate's attitude, insight and thought processes	4	5	1
4.D.3	This method tests the candidate's ability to manage "real-life" situations	5	4	1

Question 5: Orals (Vivas)

5A: Compilation of questions for oral examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
5.A.1	To compile the questions for this assessment method	5	3	1
5.A.3	To give feedback on this assessment method	3	6	0

5B: Value of questions for oral examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
5.B.2	The skills of the learner	4	5	1
5.B.3	The professional behaviour (including attitudes and values) of the learner	4	4	2
5.B.4	The clinical competence of the learner	7	2	1

5C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

5D: General Comments

Take a look at the following statements about questions for oral examinations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
5.D.2	This method can test in-depth knowledge over a wide range of subjects in rapid manner	6	3	1

Question 6: Clinical cases

6A: Compilation and questions for "real life" clinical cases

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
6.A.1	To compile the questions for this assessment method	2	4	3
6.A.3	To give feedback on this assessment method	3	6	0

6B: Value of "real life" clinical cases

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
6.B.1	The knowledge of the learner	7	3	0
6.B.2	The skills of the learner	7	3	0
6.B.3	The professional behaviour (including attitudes and values) of the learner	6	3	1

6C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

6D: General Comments

Take a look at the following statements about questions for "real life" clinical situations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
6.D.4	This method is critical for the evaluation of a candidate's clinical skills	6	3	1

Question 7: OSCE's (Objectively structured clinical examinations)

7A: Compilation of questions for OSCE examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
7.A.1	To compile the questions for this assessment method	1	2	6
7.A.2	To mark this assessment	3	5	1
7.A.3	To give feedback on this assessment method	2	6	1

7B: Value of questions for OSCE examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
7.B.2	The skills of the learner	4	2	4
7.B.3	The professional behaviour (including attitudes and values) of the learner	2	3	5
7.B.4	The clinical competence of the learner	4	5	1

7C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

7D: General Comments

Take a look at the following statements about OSCE questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
7.D.2	This method can test areas of clinical importance that cannot be tested in a clinical case scenario or in an oral examination	5	4	1
7.D.3	This method can test a candidate's ability to deal with a clinical scenario in the absence of a patient	5	4	1

Question 8: Portfolios**8A: Value of portfolios**

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
8.A.2	The skills of the learner	3	6	0

8B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

8C: General Comments

Take a look at the following statements about portfolios. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
8.C.1	This method may be useful to determine if a candidate has sufficient experience to be admitted to the final formative examination	6	4	0
8.C.2	Essential for formative assessment of candidates	4	4	2
8.C.3	This method is currently very fashionable but of doubtful value	4	4	2

Question 9: Assignments

(What do you mean by assignment? **Answer SWW:** Assignments in this case mean tasks given to registrars to reflect on certain topics in their specialist field and present this as part of the academic programme of the department. Consultants in the department will assess the assignment, give a mark and provide feedback to the student.)

9A: Value of assignments

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
9.A.2	The skills of the learner	2	3	4
9.A.3	The professional behaviour (including attitudes and values) of the learner	0	3	6
9.A.4	The clinical competence of the learner	1	4	4

9B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 10: Scripts- / Mini-dissertations

10A: Value of scripts/mini-dissertations

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
10.A.1	The knowledge of the learner	2	7	1
10.A.2	The skills of the learner	3	5	2
10.A.3	The professional behaviour (including attitudes and values) of the learner	1	3	6
10.A.4	The clinical competence of the learner	2	5	3

10B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

10C: General Comments

Take a look at the following statements about scripts / mini-dissertations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
10.C.3	A dissertation helps the student to learn about the principles of research methodology	7	3	0
10.C.4	This method teaches the student to learn how to critically evaluate the available literature about any given subject	7	3	0
10.C.5	This method gives the student the opportunity to contribute to the solution of problems and the expansion of knowledge in their field of research	5	4	1

Question 11: Mini- CEX (Mini Clinical Evaluation Exercise)

(Explanation SWW: The Mini-CEX facilitates formative assessment of core clinical skills. It is a 10-20 minute direct observation of a trainee-patient interaction. It is good for the evaluation of the different clinical skills including medical interviewing, physical examination, informed decision making, counselling and clinical judgement reasoning. The technique was developed by the American Board of Internal Medicine and they make use of a specific form to assess the candidate. For more information go to www.abim.org)

11A: Value of Mini-CEX

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
11.A.1	The knowledge of the learner			
11.A.2	The clinical skills of the learner			
11.A.3	The professional behaviour (including attitudes and values) of the learner			
11.A.4	The clinical competence of the learner			

11B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 12: Direct Observation of Procedural Skills (DOPS)

(**Explanation SWW:** DOPS is a method designed to provide feedback on procedural skills essential to provide good clinical care. This technique has been developed by the Royal College of General Practitioners and evaluates certain procedures including male genital and prostate examination. A specific form has been developed to assess the candidate's performance. For more information go to www.rcgp.org.uk)

12A: Value of DOPS

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
12.A.1	The knowledge of the learner			
12.A.2	The clinical skills of the learner			
12.A.3	The professional behaviour (including attitudes and values) of the learner			
12.A.4	The clinical competence of the learner			

12B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

THIS IS THE END OF THE DELPHI PROCESS.

THANK YOU FOR THE TIME AND EFFORT YOU TOOK TO COMPLETE THE DELPHI PROCESS. THE RESEARCHER APPRECIATES YOUR PARTICIPATION.

APPENDIX E3

[illegible]

D4	1			1			1			1			1			1			1			1			1			8	1	0	
D5	1			1			1			1			1			1			1			1			1			6	3	0	
D6			1		1		1			1			1			1			1			1			1			2	4	3	
D7		1		1			1			1			1			1			1			1			1			2	6	1	
D8		1			1		1			1			1			1			1			1			1			1	7	1	
D12		1		1			1			1			1			1			1			1			1			4	5	0	
D13		1		1			1			1			1			1			1			1			1			6	3	0	
D14	1			1			1			1			1			1			1			1			1			9	0	0	
E2		1		1			1			1			1			1			1			1			1			4	3	1	
E3	1			1			1			1			1			1			1			1			1			8	1	0	
E4	1			1			1			1			1			1			1			1			1			8	1	0	
E5		1		1			1			1			1			1			1			1			1			7	2	0	
E11		1		1			1			1			1			1			1			1			1			5	4	0	
E12	1			1			1			1			1			1			1			1			1			9	0	0	
E13	1			1			1			1			1			1			1			1			1			9	0	0	
F1	1			1			1			1			1			1			1			1			1			8	1	0	
F2	1			1			1			1			1			1			1			1			1			9	0	0	
F4	1			1			1			1			1			1			1			1			1			9	0	0	
F6	1				1		1			1			1			1			1			1			1			3	6	0	
F8		1		1			1			1			1			1			1			1			1			3	6	0	
F10		1			1		1			1			1			1			1			1			1			1	8	0	
F12		1		1			1			1			1			1			1			1			1			6	3	0	
F13	1			1			1			1			1			1			1			1			1			8	1	0	
F14		1		1			1			1			1			1			1			1			1			6	3	0	
G1	1			1			1			1			1			1			1			1			1			8	0	0	
G5		1		1			1			1			1			1			1			1			1			7	1	0	
H1		1			1		1			1			1			1			1			1			1			0	6	0	

H2	1			1			1			1			1			1			5	2	0
H3		1			1			1			1			1					0	5	1
H4	1			1			1			1			1						5	2	0
H5		1			1			1			1			1					6	1	0
H7	1				1			1			1			1					2	5	0
H10		1			1			1			1			1					0	6	1
1.A.3			1		1			1			1			1			1		2	6	1
1.B.2		1			1			1			1			1			1		1	7	1
1.B.3		1				1			1			1		1			1		0	5	4
1.B.4		1		1				1			1			1			1		1	6	2
1C																					
1.D.3			1			1				1			1			1	1		1	0	8
2.A.3		1			1			1			1			1					3	5	0
2.B.2		1			1			1			1			1			1		0	5	3
2.B.4		1			1			1			1			1			1		0	8	1
2C																					
2.D.2			1			1				1				1			1		0	1	8
2.D.3		1			1			1			1			1			1		1	8	0
2.D.4			1			1				1				1			1		0	0	9
3.A.1		1			1			1			1			1			1		3	5	1
3.A.2			1			1				1				1			1		0	0	9

[illegible]

[illegible]

FEEDBACK ON DELPHI ROUND TWO

AN ASSESSMENT MODEL FOR REGISTRARS IN UROLOGY

Dear Delphi participant,

Thank you once again for the time and effort you put in to assist me in this process. I attach the results of Round Two of the Delphi process to this letter. The aim of the feedback is to provide you with the results and information that was gained in round two. **This is for your information only and you do not need to do anything with it.**

According to Larson and Wissman consensus is reached when 80% of the participants award the same value to a certain statement that was included in the questionnaire. In Round Two of this Delphi process consensus was reached on 75 out of a possible 131 statements (57, 2%). All these statements will be removed from Round Three and you will only have to consider the remaining statements consensus was not reached on that will be send to you in the next week.

In the attached feedback I have shaded all the statements where consensus has been reached. I have also included comments that were made by the participants for your information. I shall address all the comments that were made in the final chapter of this thesis and therefore I have not included my own response to your comments in this feedback paper. I have addressed the enquiries and questions raised by the participants in Round Two as well. My comments are indicated below the participants' enquiry/question in bold as follows: **Answer SWW**. I hope this will assist you to clarify your uncertainties about these statements in the following rounds. In the statements where consensus was not reached, I have included the numerical values that were awarded by the participants to the different options for that specific statement. These values are shown in red. Certain participants in the Delphi process did not answer all the questions; this will explain why some statements have less than ten responses.

In a last effort to reach conclusion on the outstanding statements, I will be sending you a questionnaire with the outstanding statements shortly. I realise that we are entering the holiday season and therefore I will appreciate your precious time to fill in the questionnaire even more. There are only about fifty (50) statements left and it will hopefully not take you more than 5-7 minutes to complete. I also want to take this opportunity to wish you and your family a Merry Christmas and prosperous 2012. May God bless you in the festive season.

Once again my sincere thanks for your participation in my research. I really appreciate your time and effort. Round Three of the Delphi process will follow shortly; it will be much shorter than Round Two and will take less time to complete.

Kind regards,

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FEEDBACK DELPHI PROCESS ROUND TWO**SECTION A:****OUTCOMES-BASED EDUCATION AND ASSESSMENT IN HIGHER EDUCATION**

In this section certain statements are made about the knowledge, attitude and role of the assessor in outcomes-based education.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	An assessor has to have knowledge of current changes in higher education				
2.	An assessor needs a positive attitude towards the changes in higher education	1	6	2	
3.	An assessor must be willing to learn about changes in higher education				
4.	An assessor must understand the differences between assessment and evaluation				
5.	Assessors must be formally trained in the principles of assessment				

SECTION B:**THE PURPOSE OF ASSESSMENT**

Part 1: In this section certain statements are made about the purpose of assessment.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
2.	Assessment should be a learning experience for both learners and assessors	5	4	0	
3.	The purpose of assessment is to give learners the opportunity to monitor their progress	6	3	0	
4.	Assessment can identify areas where adjustments in teaching and learning could be made	6	3	0	
5.	The purpose of assessment is to classify or rank the performance of students	3	6	0	
6.	The purpose of assessment is to grade students' knowledge into a point on an arbitrary scale				

7.	The purpose of assessment is to select the best available students				

SECTION C: LEARNER ASSESSMENT

This section deals with issues related to mechanisms for learner assessment in order to ensure good assessment practices.

Take a look at the following statements regarding mechanisms for learner assessment.

Please indicate how important each of the statements is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	The outcome for every student in a programme should be equivalent and clearly stated				
2.	The assessment process must be objective				
3.	Learner responsibilities must be defined				
4.	Assessment criteria must be available for every one of the abilities/skills that will be assessed				
5.	An assessment task force/committee that includes experts must be appointed				Experts in the process of assessment or in the field being assessed? Answer SWW: The ideal would be if the assessor can be experts in both!
6.	Assessment must be integrated and must cover all aspects of the learning programme	4	5	0	
7.	Assessment must be uniform across all subjects/modules	2	5	1	Uniformity may be difficult in modules that differ widely in substance.
8.	Assessors must receive formal training in assessment methodology in terms of Higher Education Quality Control requirements for assessors				How must formal training be achieved? Answer SWW: Will be addressed in the thesis
9.	Assessment must be moderated by appropriately trained moderators with specific expertise in the learning area				
10.	Learner assessments must be moderated to ensure that the required standards of assessment are reached				
11.	Learner assessments must be moderated to ensure that the assessment is appropriate				

**SECTION D:
QUALITY ASSURANCE IN ASSESSMENT**

This section deals with issues related to quality assurance in assessment.

**Look at the following statements regarding quality assurance in assessment.
Please indicate how important each of the following quality assurance mechanisms
in assessment is according to the scale:**

1 – Essential 2 – Useful 3 – Unnecessary

**Please mark the option you choose with an X and only mark one option.
Please add your comments where you feel that it is necessary.
Extra comments can be added on a loose piece of folio paper.**

		1	2	3	Comments
1.	Learners must be assessed more than once per module (various assessments)	5	4	0	Difficult with personnel constraints.
2.	Dates of assessment must be communicated to learners in advance	6	3	0	Assessment must not be subjected to cramming.
3.	Learners must have enough opportunity to prepare for assessment	6	3	0	Must always be ready for assessment.
4.	Learners must know how the weight of the individual parts of the assessment is determined				
5.	The learning content that will be covered in the assessment must be explained to the learners	6	3	0	
6.	The type of questions that will be asked must be discussed with learners	2	4	3	
7.	Colleagues must be consulted with regards to judgement on the outcomes that are covered	2	6	1	
8.	Colleagues must be consulted with regards to judgement on the assessment process				
12.	Memorandums must be an integral part of all assessments	4	5	0	A total must!
13.	A scoring rubric (with predefined criteria) should be used to ensure objectivity and consistency	6	3	0	
14.	A policy on assessment must be available and must be followed closely as part of all assessments				

**SECTION E:
PRINCIPLES OF ASSESSMENT**

This section deals with the principles of assessment.

**Look at the following statements regarding certain principles of assessment.
Please indicate how important each of the principles of assessment is according to
the following scale:**

1 – Essential 2 – Useful 3 – Unnecessary

**Please mark the option you choose with an X and only mark one option.
Please add your comments where you feel that it is necessary.
Extra comments can be added on a loose piece of folio paper.**

		1	2	3	Comments
2.	Assessment must focus on deep, active learning processes	4	3	1	
3.	Higher order cognitive skills must be in assessed as part of the assessment process				
4.	The pre-defined assessment purposes should determine the assessment methods that will be used				
5	Relevant assessment criteria should be applied and must be available to learners				
11.	The assessment methods should include a wide range of approaches	5	4	0	
12.	Feedback must be given to learners after assessment to support the learning process				
13.	Quality assurance procedures must be in place and must be strictly adhered to				

SECTION F: PLANNING AND CONSTRUCTING OF ASSESSMENT

This section deals with issues related to the planning and constructing of assessment.

Look at the following statements about the planning and constructing of the assessment process.

Please indicate the importance of each factor in the planning and construction of assessment according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Clear stated outcomes must be formulated as part of the construction of assessment				
2.	The capabilities that must be assessed must be identified				
4.	The assessment methods must be in agreement with the knowledge, skills and attitudes outcomes that was defined at the start of the module				
6.	A variety of assessment methods must be used	3	6	0	
8.	Self-assessment must be part of the assessment process	3	6	0	Quite unreliable in literature.
10.	Criteria-referenced assessment methods should be used during assessment				
12.	Students' results must be analysed and interpreted by both the assessor and the moderator	6	3	0	
13.	Feedback must be planned beforehand and must be given shortly after conclusion of assessment (within a pre-arranged timeframe)				

14.	The feedback method must be planned before commencement of the assessment process	6	3	0	

SECTION G:

FEEDBACK ON ASSESSMENT AND THE USE OF ASSESSMENT RESULTS

This section deals with issues related to feedback on assessment and the use of assessment results.

The following statements deal with the process of feedback and the use of the assessment results.

Please indicate how important each of the statements is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	The assessment results must be analysed comprehensively				
5.	Learners must be informed about the goal and importance of feedback				

SECTION H:

TYPES / STRATEGIES OF ASSESSMENT

This section deals with different types / strategies of assessment.

Look at the following types and strategies of assessment.

Please indicate how important each of the following types and strategies of assessment are according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Alternative assessment				Not sure what is meant by term. Answer SWW: Any method that differs from conventional paper-and-pencil tests, most particularly objective tests. Examples include observations, exhibitions, oral presentations, experiments, portfolios, interviews and projects
2.	Authentic assessment				
3.	Traditional assessment				What is classified as traditional? Answer SWW: Refers to the forced-choice measures of

					multiple-choice tests, fill-in-the-blanks, true-false, matching and the like that has been, and remains so common in education.
5.	Norm-referenced assessment				
7.	Formative assessment				
10.	Self-assessment				

SECTION I: ASSESSMENT METHODS AND THEIR APPROPRIATENESS

This section deals with assessment methods and appropriateness.

This section deals with different methods that are currently used in the assessment of registrars. Each method of assessment will be discussed separately. In the first part you will be asked to judge factors associated with the compilation of the specific type of assessment. In the second part you will be asked to rate the value of each type of assessment as an important part of the assessment process.

General comments about the specific assessment method will be added in some cases. Please give your opinion about the statement made and add appropriate comments where necessary. Extra comments can be added on a loose piece of folio paper

Question 1: Short questions

1A: Compilation and marking of short questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
1.A.3	To give feedback on this assessment method	2	6	1

1B: Value of short questions

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
1.B.2	The skills of the learner? Answer SWW: Problem solving skills			
1.B.3	The professional behaviour (including attitudes and values) of the learner	0	5	4
1.B.4	The clinical competence of the learner	1	6	2

1C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Sample size is usually too small so scope of work is not as good as with OSCE's. Marking labour intensive.
I think a range of clinical scenarios can be tested to see if the learner has clinical competence.
Will: Cover a wide field in the available time, Identify weak areas, Pursue weak areas, Clarify perceived deficiencies. Expose group deficiencies in training.
It is hard to standard set the pass mark for these questions and one need to make sure the model answer correlates with the actual question. This sounds obvious but problems can occur

quite easily if the moderator is not meticulous in checking it.
It is objective, wide spectrum of banked questions can be used.

1D: General Comments

Take a look at the following statements about short questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
1.D.3	This method of assessment is time consuming to compile and therefore not used by many assessors			

Question 2: MCQ's (Multiple Choice Questions)

2A: Compilation and marking of multiple choice questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
2.A.3	To give feedback on this assessment method	3	5	0

2B: Value of multiple choice questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
2.B.2	The skills of the learner. Answer SWW: Problem solving skills	0	5	3
2.B.4	The clinical competence of the learner			

2C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Broad range of knowledge can be efficiently tested. Reliability of exam excellent. Time spent on setting questions more valuable than time spent marking short answer or essay questions.
Test skills and knowledge
Will if carefully constructed to supplement other methods of assessment.
Probably the best available method to test knowledge and problem solving skills in a reliable and cost effective manner. Also best method to determine the pass mark by standard setting and the stats on MCQ's helps one to improve the question bank. For sure my preferred method for above reasons and scenarios.
Objective, Quick to mark, Can test wide spectrum of knowledge in a short time.

2D: General Comments

Take a look at the following statements about MCQ's. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
2.D.2	It is a "puzzle for monkeys" and only useful in student factories where thousands of students are assessed at the same time			
2.D.3	This method is a good indicator of the extent of the student's knowledge			
2.D.4	It is a useless method except for educated guessing			

Question 3: Essay-type questions

3A: Compilation and marking of essay-type questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
3.A.1	To compile the questions for this assessment method	3	5	1
3.A.2	To mark this assessment	1	2	7
3.A.3	To give feedback on this assessment method			

3B: Value of essay-type questions

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
3.B.1	The knowledge of the learner	3	6	0
3.B.2	The skills of the learner	0	4	5
3.B.3	The professional behaviour (including attitudes and values) of the learner	0	5	4

3C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Essay questions test an extremely limited range of knowledge and have very poor reliability parameters. This method of assessment was discontinued in the USA in the early 1970's because of the poor reliability parameters and limited scope of testing. Should not be used at all.
Some people are better essay writers than others; the question might have been spotted.
Very hard to mark objectively and fraught with educational problems (like model answers and standard setting). Should be avoided as far as humanly possible.

3D: General Comments

Take a look at the following statements about essay-type questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
3.D.1	This assessment method is a good indicator of academic knowledge and a structured thought process	6	3	0
3.D.2	This method test knowledge as well as comprehension, insight,	6	3	0

	logic, judgement and the ability to organise and communicate information			
3.D.3	This method test a candidate's ability to organise his/her knowledge			
3.D.5	This method exposes deficits in a candidate's knowledge	5	4	0

Question 4: Case studies (paper)

4A: Compilation of paper case study questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
4.A.1	To compile the questions for this assessment method			
4.A.2	To mark this assessment			
4.A.3	To give feedback on this assessment method			

4B: Value of paper case study questions

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
4.B.1	The knowledge of the learner	4	5	0
4.B.2	The skills of the learner	4	4	1
4.B.3	The professional behaviour (including attitudes and values) of the learner			
4.B.4	The clinical competence of the learner			

4C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Useful to assess clinical reasoning when real cases cannot be used-too expensive, cases not available, staff constraints. Better than essays-wider sampling. Better than short cases-patient based and authenticity greater.
It supplies a good account of the candidate's comprehensive thought about each case when he/she present studies on a number of divergent cases.
In depth assessment of clinical knowledge. Student has to think on his/her feet.

4D: General Comments

Take a look at the following statements about paper case study questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
4.D.1	This method tests integration of facts and gives the candidate a good working knowledge			
4.D.2	This method tests the candidate's attitude, insight and thought processes	4	5	1
4.D.3	This method tests the candidate's ability to manage "real-life" situations			

Question 5: Orals (Vivas)

5A: Compilation of questions for oral examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
5.A.1	To compile the questions for this assessment method			
5.A.3	To give feedback on this assessment method			

5B: Value of questions for oral examinations

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
5.B.2	The skills of the learner	2	5	1
5.B.3	The professional behaviour (including attitudes and values) of the learner			
5.B.4	The clinical competence of the learner			

5C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Unstructured orals and traditional vivas are unfair, unreliable and no longer accepted as an assessment method in high stakes settings. If the questions are standardized and wide ranging the quality of this assessment method improves.
It provides an open field to probe the strengths and weaknesses of the candidate.
Problematic and unreliable-examiners think they want to see "how the student reacts under pressure" which is not the aim of a knowledge test and can be much better assessed by OSCE for example.
In depth testing of knowledge.

5D: General Comments

Take a look at the following statements about questions for oral examinations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
5.D.2	This method can test in-depth knowledge over a wide range of subjects in rapid manner			

Question 6: Clinical cases

6A: Compilation and questions for "real life" clinical cases

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
6.A.1	To compile the questions for this assessment method	3	5	1
6.A.3	To give feedback on this assessment method	3	5	1

6B: Value of "real life" clinical cases

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
6.B.1	The knowledge of the learner	5	4	0
6.B.2	The skills of the learner	5	4	0
6.B.3	The professional behaviour (including attitudes and values) of the learner			

6C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Best method of testing clinical competence including clinical reasoning and ability to synthesise information in the clinical setting.
To assess professional behaviour mainly.
It provides the ultimate test of clinical proficiency
Lack of sampling makes these unreliable and hence mostly invalid. One cannot extrapolate a candidate's knowledge to the entire domain of ability from 3 cases. All research have shown that. You need about 8 at least.
Student functioning in a "real-life "situation. Integration/ processing of knowledge.

6D: General Comments

Take a look at the following statements about questions for "real life" clinical situations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
6.D.4	This method is critical for the evaluation of a candidate's clinical skills			

Question 7: OSCE's (Objectively structured clinical examinations)

7A: Compilation of questions for OSCE examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
7.A.1	To compile the questions for this assessment method			
7.A.2	To mark this assessment	3	6	0
7.A.3	To give feedback on this assessment method			

7B: Value of questions for OSCE examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
7.B.2	The skills of the learner	3	4	2
7.B.3	The professional behaviour (including attitudes and values) of the learner	1	5	3
7.B.4	The clinical competence of the learner	4	5	0

7C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Objective assessment of clinical skills using a range of cases. Quality of exam entirely dependent on the number of cases included in the exam. If too few cases (1-4) the exam is no better than the real life clinical case exam which typically contains 2-3 cases.
To evaluate clinical insight.
Of value as supportive assessment of the clinical ability and of necessary tests and procedures.

7D: General Comments

Take a look at the following statements about OSCE questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
7.D.2	This method can test areas of clinical importance that cannot be tested in a clinical case scenario or in an oral examination			
7.D.3	This method can test a candidate's ability to deal with a clinical scenario in the absence of a patient			

Question 8: Portfolios

8A: Value of portfolios

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
8.A.2	The skills of the learner			

8B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

This form of assessment really ensures that students engage in clinical learning on a daily basis and is the most powerful way of achieving the type of learning desired-deep learning based on real patient encounters. This assessment method tests the student's ability to put all the facts of the case together and synthesise a case summary that can be explored to assess clinical reasoning, understanding and insight. This is not a knowledge test!
I think the commitment and dedication of a learner can be judged.

Provides a most essential account of the exposure of the candidate to critical areas of the spectrum of training or lack thereof.
Data collection has to be controlled to be of value.

8C: General Comments

Take a look at the following statements about portfolios. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
8.C.1	This method may be useful to determine if a candidate has sufficient experience to be admitted to the final summative examination	5	4	0
8.C.2	Essential for formative assessment of candidates			
8.C.3	This method is currently very fashionable but of doubtful value	0	6	3

Question 9: Assignments

(What do you mean by assignment? **Answer SWW:** Assignments in this case mean tasks given to registrars to reflect on certain topics in their specialist field and present this as part of the academic programme of the department. Consultants in the department will assess the assignment, give a mark and provide feedback to the student.)

9A: Value of assignments

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
9.A.2	The skills of the learner			
9.A.3	The professional behaviour (including attitudes and values) of the learner	0	3	6
9.A.4	The clinical competence of the learner	0	5	4

9B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Huge marking load for the amount of information obtained about a student's clinical competence and knowledge. Usually restricted to a single topic or theme so not a comprehensive assessment of knowledge. Very little return for huge expense in terms of marking time.
I do not think it adds to the evaluation of a learner.
Too time consuming for both candidates and teachers.
Ability to search and understand the literature is tested.

Question 10: Scripts- / Mini-dissertations

10A: Value of scripts/mini-dissertations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
10.A.1	The knowledge of the learner			
10.A.2	The skills of the learner	0	4	5
10.A.3	The professional behaviour (including attitudes and values) of the learner			
10.A.4	The clinical competence of the learner	0	6	3

10B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Mini dissertations are appropriate for postgraduate education- demonstrates the candidate's ability to research a topic, conduct an experiment or study, analyse the results, present the data in a logical manner and discuss the findings in relation to the existing literature. Test a skills set appropriate to postgraduate trainees.
Adds a lot of time without adding much.
Very time consuming when applied outside a research environment, essential as a part of development of a candidate's research skills.
Evaluation of data processing by student. Test little original work; however student learns to search literature.

10C: General Comments

Take a look at the following statements about scripts / mini-dissertations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
10.C.3	A dissertation helps the student to learn about the principles of research methodology			
10.C.4	This method teaches the student to learn how to critically evaluate the available literature about any given subject			
10.C.5	This method gives the student the opportunity to contribute to the solution of problems and the expansion of knowledge in their field of research	6	2	1

Question 11: Mini- CEX (Mini Clinical Evaluation Exercise)

(Explanation SWW: The Mini-CEX facilitates formative assessment of core clinical skills. It is a 10-20 minute direct observation of a trainee-patient interaction. It is good for the evaluation of the different clinical skills including medical interviewing, physical examination, informed decision making, counselling and clinical judgement reasoning. The technique was developed by the American Board of Internal Medicine and they make use of a specific form to assess the candidate. For more information go to www.abim.org)

11A: Value of Mini-CEX

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
11.A.1	The knowledge of the learner			

11.A.2	The clinical skills of the learner	5	3	0
11.A.3	The professional behaviour (including attitudes and values) of the learner	4	2	2
11.A.4	The clinical competence of the learner	4	3	1

11B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

It will give an indication of the practical application of the learner's skill and knowledge.
A new kid on my block.
An exciting new method of workplace based assessment (on the job). Hold much promise and a good method to include in your spectrum of assessments.
Assesses the clinical behaviour/ethics/ skill and knowledge of the student.
In medicine, personal contact between tutor and learner is of utmost importance. It is mainly in service training. Assessment on the same basis is meaningful.

Question 12: Direct Observation of Procedural Skills (DOPS)

(Explanation SWW: DOPS is a method designed to provide feedback on procedural skills essential to provide good clinical care. This technique has been developed by the Royal College of General Practitioners and evaluates certain procedures including male genital and prostate examination. A specific form has been developed to assess the candidate's performance. For more information go to www.rcgp.org.uk)

12A: Value of DOPS

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
12.A.1	The knowledge of the learner			
12.A.2	The clinical skills of the learner			
12.A.3	The professional behaviour (including attitudes and values) of the learner	4	2	2
12.A.4	The clinical competence of the learner			

12B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

To assess clinical care competence.
Another new kid on the block but shows promise.
An exciting new method of workplace based assessment (on the job). Hold much promise and a good method to include in your spectrum of assessments.
Evaluate knowledge /clinical skills /competence in "real life" situations.
This method involves more direct contact between tutor (assessor) and learner which is good.

**THIS IS THE END OF THE DELPHI PROCESS.
THANK YOU FOR THE TIME AND EFFORT YOU TOOK TO COMPLETE THE DELPHI
PROCESS.
THE RESEARCHER APPRECIATES YOUR PARTICIPATION.**

APPENDIX F (INCLUDING APPENDICES F1-F5)

- APPENDIX F1: LETTER TO DELPHI PANEL PART THREE**
- APPENDIX F2: QUESTIONNAIRE FOR DELPHI PROCESS PANEL ROUND THREE**
- APPENDIX F3: RESULTS DELPHI ROUND THREE, EXCEL SPREAD SHEET**
- APPENDIX F4: FEEDBACK ON DELPHI ROUND THREE**
- APPENDIX F5: FEEDBACK QUESTIONNAIRE FOR DELPHI PROCESS PANEL ROUND THREE**

LETTER TO DELPHI PANEL PART THREE**AN ASSESSMENT MODEL FOR REGISTRARS IN UROLOGY**

Dear Delphi participant,

Thank you once again for your participation in Round Two of the Delphi process which makes out a very important part of my research. The feedback you provided is important for my research project and will be included in Round Three.

PURPOSE OF THE ROUND THREE QUESTIONNAIRES

In Round Three of the Delphi process you will be provided with all the statements on which consensus was **not reached** in Round Two. According to the literature, consensus is reached when 80% or more of the participants agree on the same value in the three point scale provided. As explained in the feedback letter sent to you on 6 December 2012, the statements where consensus was reached upon were removed from the questionnaire in Round Three.

In Round Three of the Delphi process you are again given the opportunity to reconsider your opinion on the remaining statements taking into account the anonymous feedback provided by your fellow participants as well as some clarifications made by the researcher. All sections and statements are numbered exactly in the same way as Round Two, omitting the statements on which consensus was reached.

INSTRUCTIONS FOR THE COMPLETION OF THE THIRD ROUND

During this round you have to reconsider the statements on which consensus was not reached in Round Two. You are allowed to change your opinion after consideration of the anonymous input provided by your fellow participants. You are also allowed to make new comments in the space provided.

Please use the following scale again:

1 = Essential (This criterion must **DEFINITELY BE INCLUDED** in the model)

2 = Useful (This criterion **CAN BE INCLUDED** in the model)

3 = Unnecessary (This criterion must **DEFINITELY BE EXCLUDED** from the model)

The statements on which consensus was not reached are included again. The responses of all the participants are indicated underneath the scale in red (i.e. the number of participants who indicated a particular value of the scale).

For example:

		1	2	3	Comments
1.	An assessor has to have knowledge of current changes in higher education	7	3	0	

You are required to indicate your preference again by marking with a cross (X) what your choice is regarding the statement. For that reason an extra row has been provided where you can indicate your preference on the scale provided.

For example:

		1	2	3	Comments
1.	An assessor has to have knowledge of current changes in higher education	7	3	0	
			X		

You can also add more comments in the space provided if you feel like it. If at all possible, please complete the questionnaire in its electronic form and sent it back to me by e-mail.

However, if you want to print it out and complete it in paper format, feel free to do so and return it to me by fax. All the necessary details will be provided again at the end of this letter.

Please answer all the questions in the questionnaire. The questionnaire will not take more than 5-7 minutes of your time because of the limited amount of statements where consensus was not reached on. Your responses will remain confidential and anonymous with regards to the other participants in this process. Please contact me at any time if you are unclear about anything in this letter or the questionnaire.

Please return the completed questionnaires to me before or on the 24th of December 2011. I realise that this is the holiday season and that you are most likely going on holiday soon. Therefore I want to express my sincere appreciation if you do find time to complete the questionnaire and assist me with my research. The analysis can only be done once all the questionnaires have been returned and I therefore ask for your cooperation regarding the deadline if at all possible.

Once again my sincere thanks for the time and effort you put in to assist me in my research. I appreciate it very much and hope to return the favour sometime in the future.
Kind regards,

**PROF.DR SW WENTZEL
(STUDENT NR 197962231)
DEPARTMENT OF UROLOGY
FACULTY OF HEALTH SCIENCES
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BLOEMFONTEIN**

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Heuwelsig
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QUESTIONNAIRE FOR DELPHI PROCESS PANEL ROUND THREE**SECTION A:****OUTCOMES-BASED EDUCATION AND ASSESSMENT IN HIGHER EDUCATION**

In this section certain statements are made about the knowledge, attitude and role of the assessor in outcomes-based education.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	COMMENTS
2.	An assessor needs a positive attitude towards the changes in higher education	1	6	2	

SECTION B:**THE PURPOSE OF ASSESSMENT**

Part 1: In this section certain statements are made about the purpose of assessment.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
2.	Assessment should be a learning experience for both learners and assessors	5	4	0	
3.	The purpose of assessment is to give learners the opportunity to monitor their progress	6	3	0	
4.	Assessment can identify areas where adjustments in teaching and learning could be made	6	3	0	
5.	The purpose of assessment is to classify or rank the performance of students	3	6	0	

SECTION C:**LEARNER ASSESSMENT**

This section deals with issues related to mechanisms for learner assessment in order to ensure good assessment practices.

Take a look at the following statements regarding mechanisms for learner assessment.

Please indicate how important each of the statements is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
6.	Assessment must be integrated and must cover all aspects of the learning programme	4	5	0	
7.	Assessment must be uniform across all subjects/modules	2	5	1	

SECTION D:

QUALITY ASSURANCE IN ASSESSMENT

This section deals with issues related to quality assurance in assessment.

Look at the following statements regarding quality assurance in assessment.

Please indicate how important each of the following quality assurance mechanisms in assessment is according to the scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Learners must be assessed more than once per module (various assessments)	5	4	0	
2.	Dates of assessment must be communicated to learners in advance	6	3	0	
3.	Learners must have enough opportunity to prepare for assessment	6	3	0	
5.	The learning content that will be covered in the assessment must be explained to the learners	6	3	0	
6.	The type of questions that will be asked must be discussed with learners	2	4	3	
7.	Colleagues must be consulted with regards to judgement on the outcomes that are covered	2	6	1	
12.	Memorandums must be an integral part of all assessments	4	5	0	
13.	A scoring rubric (with predefined criteria) should be used to ensure objectivity and consistency	6	3	0	

SECTION E:

PRINCIPLES OF ASSESSMENT

This section deals with the principles of assessment.

Look at the following statements regarding certain principles of assessment.

Please indicate how important each of the principles of assessment is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

**Please add your comments where you feel that it is necessary.
Extra comments can be added on a loose piece of folio paper.**

		1	2	3	Comments
2.	Assessment must focus on deep, active learning processes	4	3	1	
11.	The assessment methods should include a wide range of approaches	5	4	0	

SECTION F: PLANNING AND CONSTRUCTING OF ASSESSMENT

This section deals with issues related to the planning and constructing of assessment.

Look at the following statements about the planning and constructing of the assessment process.

Please indicate the importance of each factor in the planning and construction of assessment according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
6.	A variety of assessment methods must be used	3	6	0	
8.	Self-assessment must be part of the assessment process	3	6	0	
12.	Students' results must be analysed and interpreted by both the assessor and the moderator	6	3	0	
14.	The feedback method must be planned before commencement of the assessment process	6	3	0	

SECTION I: ASSESSMENT METHODS AND THEIR APPROPRIATENESS

This section deals with assessment methods and appropriateness.

This section deals with different methods that are currently used in the assessment of registrars. Each method of assessment will be discussed separately. In the first part you will be asked to judge factors associated with the compilation of the specific type of assessment. In the second part you will be asked to rate the value of each type of assessment as an important part of the assessment process.

General comments about the specific assessment method will be added in some cases. Please give your opinion about the statement made and add appropriate comments where necessary. Extra comments can be added on a loose piece of folio paper

Question 1: Short questions

1A: Compilation and marking of short questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
1.A.3	To give feedback on this assessment method	2	6	1

1B: Value of short questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
1.B.3	The professional behaviour (including attitudes and values) of the learner	0	5	4
1.B.4	The clinical competence of the learner	1	6	2

1C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 2: MCQ's (Multiple Choice Questions)

2A: Compilation and marking of multiple choice questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method

		1	2	3
2.A.3	To give feedback on this assessment method	3	5	0

2B: Value of multiple choice questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
2.B.2	The skills of the learner	0	5	3

2C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 3: Essay-type questions

3A: Compilation and marking of essay-type questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
3.A.1	To compile the questions for this assessment method	3	5	1

3B: Value of essay-type questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
3.B.1	The knowledge of the learner	3	6	0
3.B.2	The skills of the learner	0	4	5
3.B.3	The professional behaviour (including attitudes and values) of the learner	0	5	4

3C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

3D: General Comments

Take a look at the following statements about essay-type questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
3.D.1	This assessment method is a good indicator of academic knowledge and a structured thought process	6	3	0
3.D.2	This method test knowledge as well as comprehension, insight, logic, judgement and the ability to organise and communicate information	6	3	0
3.D.5	This method exposes deficits in a candidate's knowledge	5	4	0

Question 4: Case studies (paper)

4B: Value of paper case study questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
4.B.1	The knowledge of the learner	4	5	0
4.B.2	The skills of the learner	4	4	1

4C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

4D: General Comments

Take a look at the following statements about paper case study questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
4.D.2	This method tests the candidate's attitude, insight and thought processes	4	5	1

Question 5: Orals (Vivas)

5B: Value of questions for oral examinations

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
5.B.2	The skills of the learner	2	5	1

5C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 6: Clinical cases

6A: Compilation and questions for "real life" clinical cases

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
6.A.1	To compile the questions for this assessment method	3	5	1
6.A.3	To give feedback on this assessment method	3	5	1

6B: Value of "real life" clinical cases

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
6.B.1	The knowledge of the learner	5	4	0
6.B.2	The skills of the learner	5	4	0

6C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 7: OSCE's (Objectively structured clinical examinations)

7A: Compilation of questions for OSCE examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
7.A.2	To mark this assessment	3	6	0

7B: Value of questions for OSCE examinations

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
7.B.2	The skills of the learner	3	4	2
7.B.3	The professional behaviour (including attitudes and values) of the learner	1	5	3
7.B.4	The clinical competence of the learner	4	5	0

7C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 8: Portfolios

8C: General Comments

Take a look at the following statements about portfolios. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
8.C.1	This method may be useful to determine if a candidate has sufficient experience to be admitted to the final formative examination	5	4	0
8.C.3	This method is currently very fashionable but of doubtful value	0	6	3

Question 9: Assignments

(What do you mean by assignment? **Answer SWW:** Assignments in this case mean tasks given to registrars to reflect on certain topics in their specialist field and present this as part of the academic programme of the department. Consultants in the department will assess the assignment, give a mark and provide feedback to the student.)

9A: Value of assignments

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
9.A.3	The professional behaviour (including attitudes and values) of the learner	0	3	6
9.A.4	The clinical competence of the learner	0	5	4

9B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 10: Scripts- / Mini-dissertations

10A: Value of scripts/mini-dissertations

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
10.A.2	The skills of the learner	0	4	5
10.A.4	The clinical competence of the learner	0	6	3

10B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

10C: General Comments

Take a look at the following statements about scripts / mini-dissertations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
10.C.5	This method gives the student the opportunity to contribute to the solution of problems and the expansion of knowledge in their field of research	6	2	1

Question 11: Mini- CEX (Mini Clinical Evaluation Exercise)

(Explanation SWW: The Mini-CEX facilitates formative assessment of core clinical skills. It is a 10-20 minute direct observation of a trainee-patient interaction. It is good for the evaluation of the different clinical skills including medical interviewing, physical examination, informed decision making, counselling and clinical judgement reasoning. The technique was developed by the American Board of Internal Medicine and they make use of a specific form to assess the candidate. For more information go to www.abim.org)

11A: Value of Mini-CEX

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
11.A.2	The clinical skills of the learner	5	3	0
11.A.3	The professional behaviour (including attitudes and values) of the learner	4	2	2
11.A.4	The clinical competence of the learner	4	3	1

11B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 12: Direct Observation of Procedural Skills (DOPS)

(Explanation SWW: DOPS is a method designed to provide feedback on procedural skills essential to provide good clinical care. This technique has been developed by the Royal College of General Practitioners and evaluates certain procedures including male genital and prostate examination. A specific form has been developed to assess the candidate's performance. For more information go to www.rcgp.org.uk)

12A: Value of DOPS

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
12.A.3	The professional behaviour (including attitudes and values) of the learner	4	2	2

12B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

**THIS IS THE END OF THE DELPHI PROCESS.
THANK YOU FOR THE TIME AND EFFORT YOU TOOK TO COMPLETE THE DELPHI
PROCESS. THE RESEARCHER APPRECIATES YOUR PARTICIPATION.**

APPENDIX F3

	1			2			3			4			5			6			7			8			9			10			11			12			TOTAL		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
A1	1			1			1			1			1			1			1			1												9	0	0			
A2		1			1				1					1				1				1													1	6	2		
A3	1			1			1			1			1			1			1			1												9	0	0			
A4	1			1			1			1			1			1			1			1												9	0	0			
A5		1			1				1					1				1				1													1	8	0		
B2		1		1			1			1			1			1			1			1												5	4	0			
B3	1			1			1				1		1			1			1				1											6	3	0			
B4		1		1			1			1			1			1			1			1												6	3	0			
B5		1		1			1			1			1			1			1			1												3	6	0			
B6		1			1			1			1		1			1			1			1												9	0	0			
B7		1			1			1			1		1			1			1				1											8	0	1			
C1	1			1			1			1			1			1			1			1												7	2	0			
C2	1			1			1			1			1			1			1			1												9	0	0			
C3	1			1			1			1			1			1			1			1												9	0	0			
C4		1		1			1			1			1			1			1			1												8	1	0			
C5		1			1		1				1		1			1			1			1												2	7	0			
C6	1				1		1			1			1			1			1			1												4	5	0			
C7		1		1				1			1		1			1				1			1											2	6	1			
C8		1			1		1			1			1			1			1			1												2	7	0			
C9	1			1			1			1			1			1			1			1												7	2	0			
C10	1			1			1			1			1			1			1			1												9	0	0			
C11	1			1			1			1			1			1			1			1												9	0	0			
D1	1				1				1				1			1			1			1												5	4	0			
D2		1		1					1				1			1			1			1												6	3	0			
D3		1		1					1				1			1			1			1												6	3	0			

D4	1			1			1			1			1			1			1			1			1			8	1	0	
D5	1			1			1			1			1			1			1			1			1			6	3	0	
D6			1		1			1			1			1			1			1			1			1		2	4	3	
D7		1		1			1			1			1			1			1			1			1			2	6	1	
D8		1			1			1			1			1			1			1			1			1		1	7	1	
D12		1		1			1			1			1			1			1			1			1			4	5	0	
D13		1		1			1			1			1			1			1			1			1			6	3	0	
D14	1			1			1			1			1			1			1			1			1			9	0	0	
E2		1		1			1			1			1			1			1			1			1			4	3	1	
E3	1			1			1			1			1			1			1			1			1			8	1	0	
E4	1			1			1			1			1			1			1			1			1			8	1	0	
E5		1		1			1			1			1			1			1			1			1			7	2	0	
E11		1		1			1			1			1			1			1			1			1			5	4	0	
E12	1			1			1			1			1			1			1			1			1			9	0	0	
E13	1			1			1			1			1			1			1			1			1			9	0	0	
F1	1			1			1			1			1			1			1			1			1			8	1	0	
F2	1			1			1			1			1			1			1			1			1			9	0	0	
F4	1			1			1			1			1			1			1			1			1			9	0	0	
F6	1				1		1			1			1			1			1			1			1			3	6	0	
F8		1		1			1			1			1			1			1			1			1			3	6	0	
F10		1			1		1			1			1			1			1			1			1			1	8	0	
F12		1		1			1			1			1			1			1			1			1			6	3	0	
F13	1			1			1			1			1			1			1			1			1			8	1	0	
F14		1		1			1			1			1			1			1			1			1			6	3	0	
G1	1			1			1			1			1			1			1			1			1			8	0	0	
G5		1		1			1			1			1			1			1			1			1			7	1	0	
H1		1			1			1			1			1			1			1			1			1		0	6	0	

H2	1			1			1			1			1			1			5	2	0
H3		1			1			1			1			1					0	5	1
H4	1			1			1			1			1						5	2	0
H5		1			1			1			1			1					6	1	0
H7	1				1			1			1			1					2	5	0
H10		1			1			1			1			1					0	6	1
1.A.3			1		1			1			1			1			1		2	6	1
1.B.2		1			1			1			1			1			1		1	7	1
1.B.3		1				1			1			1		1			1		0	5	4
1.B.4		1		1				1			1			1			1		1	6	2
1C																					
1.D.3			1			1				1			1			1	1		1	0	8
2.A.3		1			1			1			1			1					3	5	0
2.B.2		1			1			1			1			1			1		0	5	3
2.B.4		1			1				1		1			1			1		0	8	1
2C																					
2.D.2			1			1				1				1			1		0	1	8
2.D.3		1			1			1			1			1			1		1	8	0
2.D.4			1			1				1				1			1		0	0	9
3.A.1		1			1			1			1			1			1		3	5	1
3.A.2			1			1				1				1			1		0	0	9

[illegible]

[illegible]

FEEDBACK ON DELPHI ROUND THREE

AN ASSESSMENT MODEL FOR REGISTRARS IN UROLOGY

Dear Delphi participant,

Thank you once again for the time and effort you put in to assist me in this process. I attach the results of Round Three of the Delphi process to this letter. The aim of the feedback is to provide you with the results and information that was gained in round Three.

In Round Three of this Delphi process consensus was reached on 29 out of a possible 56 statements (51, 8%). In total, consensus has now been reached in 163 out of a possible 189 of the statements made in Round One of the Delphi process (86%).

After you have received your feedback, please reconsider the answer that you have given in Round Three of the Delphi process and decide if you want to stick to your answer. If you want to change the answer that you have given in Round Three, space is provided underneath the results that were given to the different options of each statement in Round Three. Please indicate your option with an X if you want to change your answer of Round Three.

For example:

		1	2	3
4.D.2	This method tests the candidate's attitude, insight and thought processes	3	6	1
		X		

Please provide me with your response to this feedback by Friday, February 6, 2012. If I do not receive any response from you by then, I will assume that you are satisfied with the responses that you have given in Round Three.

In the attached feedback I have shaded all the statements where consensus has been reached. I have also included comments that were made by the participants for your information. I shall address all the comments that were made in the final chapter of this thesis and therefore I have not included my own response to your comments in this feedback paper.

I have addressed the enquiries and questions raised by the participants in Round Three to the best of my abilities. My response to your question/enquiry is indicated in bold underneath the specific statement as follows: **Clarification SWW**.

For example:

		1	2	3	Comments
5.	The purpose of assessment is to classify or rank the performance of students. Clarification SWW: This is applicable to summative assessment	2	7	1	Aim more at the student's ability than ranking in a group

In the statements where consensus was not reached, I have included the numerical values that were awarded by the participants to the different options for that specific statement. Certain participants in the Delphi process did not answer all the questions; this will explain why some statements have less than ten responses.

Once again my sincere thanks for your participation in my research. I really appreciate your time and effort

Kind regards,

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FEEDBACK FOR DELPHI PROCESS PANEL ROUND THREE

SECTION A:**OUTCOMES-BASED EDUCATION AND ASSESSMENT IN HIGHER EDUCATION**

In this section certain statements are made about the knowledge, attitude and role of the assessor in outcomes-based education.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
2.	An assessor needs a positive attitude towards the changes in higher education	2	8	0	Must be aware of changes but be totally unbiased

SECTION B:**THE PURPOSE OF ASSESSMENT**

Part 1: In this section certain statements are made about the purpose of assessment.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
2.	Assessment should be a learning experience for both learners and assessors	8	2	0	
3.	The purpose of assessment is to give learners the opportunity to monitor their progress. Clarification SWW: This is applicable to formative assessment	6	4	0	Rather "a purpose" assessment primarily aimed at "end product" ability
4.	Assessment can identify areas where adjustments in teaching and learning could be made	8	2	0	
5.	The purpose of assessment is to classify or rank the performance of students. Clarification SWW: This is applicable to summative assessment	2	7	1	Aim more at the student's ability than ranking in a group

SECTION C: LEARNER ASSESSMENT

This section deals with issues related to mechanisms for learner assessment in order to ensure good assessment practices.

Take a look at the following statements regarding mechanisms for learner assessment. Please indicate how important each of the statements is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	
6.	Assessment must be integrated and must cover all aspects of the learning programme	2	8	0	Since integrated assessment should cover the outcomes of the learning programme
7.	Assessment must be uniform across all subjects/modules	2	8	0	Difficult to enforce uniformity across modules It is more important to consider the purpose of assessment in each module

SECTION D: QUALITY ASSURANCE IN ASSESSMENT

This section deals with issues related to quality assurance in assessment.

Look at the following statements regarding quality assurance in assessment. Please indicate how important each of the following quality assurance mechanisms in assessment is according to the scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
1.	Learners must be assessed more than once per module (various assessments)	8	2	0	Subject to time and personnel constraints
2.	Dates of assessment must be communicated to learners in advance	7	3	0	Mix of "prepared" and "on the spot" assessment could reveal more about ability
3.	Learners must have enough opportunity to prepare for assessment	8	2	0	Cramming vs random (always be prepared) assessment
5.	The learning content that will be covered in the assessment must be explained to the learners	6	4	0	On second thought it is more important that students be familiar with the outcomes "covered" in the assessment

6.	The type of questions that will be asked must be discussed with learners	1	6	3	Rather focus on the outcomes and the purpose of assessment, else it becomes a "teach to the test" exercise
7.	Colleagues must be consulted with regards to judgement on the outcomes that are covered. Clarification SWW: This refers to the examiners' meeting at the conclusion of the examination	0	10	0	"Examiner's meet"?
12.	Memorandums must be an integral part of all assessments	4	6	0	
13.	A scoring rubric (with predefined criteria) should be used to ensure objectivity and consistency	8	2	0	

SECTION E: PRINCIPLES OF ASSESSMENT

This section deals with the principles of assessment.

Look at the following statements regarding certain principles of assessment.

Please indicate how important each of the principles of assessment is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
2.	Assessment must focus on deep, active learning processes	5	5	0	
11.	The assessment methods should include a wide range of approaches. Clarification SWW: Assessment must take place during the whole period of training	6	4	0	

SECTION F: PLANNING AND CONSTRUCTING OF ASSESSMENT

This section deals with issues related to the planning and constructing of assessment.

Look at the following statements about the planning and constructing of the assessment process.

Please indicate the importance of each factor in the planning and construction of assessment according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
6.	A variety of assessment methods must be used	2	8	0	
8.	Self-assessment must be part of the assessment process	2	8	0	
12.	Students' results must be analysed and interpreted by both the assessor and the moderator	8	2	0	
14.	The feedback method must be planned before commencement of the assessment process	9	1	0	

SECTION 1: ASSESSMENT METHODS AND THEIR APPROPRIATENESS

This section deals with assessment methods and appropriateness.

This section deals with different methods that are currently used in the assessment of registrars. Each method of assessment will be discussed separately. In the first part you will be asked to judge factors associated with the compilation of the specific type of assessment. In the second part you will be asked to rate the value of each type of assessment as an important part of the assessment process.

General comments about the specific assessment method will be added in some cases. Please give your opinion about the statement made and add appropriate comments where necessary. Extra comments can be added on a loose piece of folio paper

Question 1: Short questions

1A: Compilation and marking of short questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
1.A.3	To give feedback on this assessment method	0	8	1
	Clarification SWW: An explanation on what the researcher meant by short, average and long has been given in the feedback on Round One. The perception of what is short, average and long may differ from one panellist to the other but it is acceptable in this regard			

1B: Value of short questions

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
1.B.3	The professional behaviour (including attitudes and values) of the learner	0	7	3
1.B.4	The clinical competence of the learner	1	8	1

1C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Can cover a wide spectrum in a relatively short time
Judge comprehension and knowledge

Useful to expose possible deficiencies
Will not choose because encourage rote learning and not appropriate at the level of registrar
Will choose because selected questions to obtain short answers
Able to cover wide area or many topics

Question 2: MCQ's (Multiple Choice Questions)

2A: Compilation and marking of multiple choice questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method

		1	2	3
2.A.3	To give feedback on this assessment method	1	8	0

2B: Value of multiple choice questions

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
2.B.2	The skills of the learner	0	6	3
	Clarification SWW: The skills evaluated here include clinical skills (diagnosis, treatment); ethical values, attitude and the ability to differentiate and arrange in order of importance			

2C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

The usefulness depends on how well it is structured
When designed correctly it can be challenging to answer and quick to grade
Might encourage "guessing"
Tedious to compile questions and time consuming

Question 3: Essay-type questions

3A: Compilation and marking of essay-type questions

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
3.A.1	To compile the questions for this assessment method	1	7	1

3B: Value of essay-type questions

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
3.B.1	The knowledge of the learner	0	10	0
3.B.2	The skills of the learner	0	6	3
	Clarification SWW: The skills assessed here include writing skills,			

	organisational skills and the ability to present the assessor with a neat and logical explanation of the question			
3.B.3	The professional behaviour (including attitudes and values) of the learner	0	6	4

3C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

A good essay will outperform a sloppy one
Spotting may provide unfair advantage
A well structured essay reveals polish of the individual especially if in neat script
Will choose when the student should be able to describe certain procedures or actions
Will not choose if the type of questions do not emphasise the purpose of assessment
Enable one to assess the learner's ability to write and his/her knowledge management

3D: General Comments

Take a look at the following statements about essay-type questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
3.D.1	This assessment method is a good indicator of academic knowledge and a structured thought process	8	2	0
3.D.2	This method test knowledge as well as comprehension, insight, logic, judgement and the ability to organise and communicate information	6	4	0
3.D.5	This method exposes deficits in a candidate's knowledge	5	5	0

Question 4: Case studies (paper)

4B: Value of paper case study questions

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
4.B.1	The knowledge of the learner	2	8	0
4.B.2	The skills of the learner	4	5	0
	Clarification SWW: Clinical skills mostly			

4C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

These are useful
Will choose-assess a range of skills, knowledge and attitudes
There are better methods

4D: General Comments

Take a look at the following statements about paper case study questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
4.D.2	This method tests the candidate's attitude, insight and thought processes	3	6	1

Question 5: Orals (Vivas)

5B: Value of questions for oral examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
5.B.2	The skills of the learner	3	6	0
	Clarification SWW: This is maybe the best way to assess the candidate's attitude ethical values and interpersonal relationships. It also assess their ability to think under pressure and some clinical skills.			

5C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

The most "direct" eye to eye contact between assessor and student Its value depends as much on the perceptiveness and objectivity of the assessor as on the ability and attitude of the student A "good assessor" will extract the maximum information from the student at ease An aggressive and biased assessor may sink many a student that should have passed Never allow a one on one oral assessment. If your fellow assessor has to step outside to answer a call do not leave the student (take him with!) I am all for a properly conducted oral assessment Will choose, the student has to think on his or her feet, out of the box and this can simulate the real world clinical situation Will choose because one can cover a wide field in a short time

Question 6: Clinical cases

6A: Compilation and questions for "real life" clinical cases

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
6.A.1	To compile the questions for this assessment method	2	5	2
6.A.3	To give feedback on this assessment method	1	8	0

6B: Value of "real life" clinical cases

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
6.B.1	The knowledge of the learner	9	1	0
6.B.2	The skills of the learner	8	1	0
	Clarification SWW: It will assess their ability to take a history, examine patients and make a diagnosis under pressure in the "real life" situation. Also gives a clear indication of the candidate's attitudes and interpersonal relationships.			

6C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

"Real life" cases are indispensable in the assessment of students whose aim is to deal with "real life" cases in their profession
Simulation of the clinical environment
Essential because it represents the real situation

Question 7: OSCE's (Objectively structured clinical examinations)**7A: Compilation of questions for OSCE examinations**

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
7.A.2	To mark this assessment	3	6	0

7B: Value of questions for OSCE examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
7.B.2	The skills of the learner	3	4	2
	Clarification SWW: All types of skills that need to be assessed can be tested in an OSCE depending on the decision of the assessors what to assess during an OSCE			
7.B.3	The professional behaviour (including attitudes and values) of the learner	1	6	3
7.B.4	The clinical competence of the learner	2	8	0

7C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Deals with essential "peripherals" in the clinical setting
Together with clinical cases and orals these provide the most important elements of assessment
Simulation of the clinical environment

Will not use because it doesn't give enough time to go into details

Question 8: Portfolios

8C: General Comments

Take a look at the following statements about portfolios. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
8.C.1	This method may be useful to determine if a candidate has sufficient experience to be admitted to the final summative examination	8	2	0
	Clarification SWW: It was wrongly indicated as admission into the final formative examination in the previous round			
8.C.3	This method is currently very fashionable but of doubtful value	0	8	2

Question 9: Assignments

(What do you mean by assignment? **Answer SWW:** Assignments in this case mean tasks given to registrars to reflect on certain topics in their specialist field and present this as part of the academic programme of the department. Consultants in the department will assess the assignment, give a mark and provide feedback to the student.)

9A: Value of assignments

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
9.A.3	The professional behaviour (including attitudes and values) of the learner	0	2	8
9.A.4	The clinical competence of the learner	0	5	5

9B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

The major reservation is control of the standard and assessment of the assignments
Will choose-Helps the student to structure thoughts and write scientifically and academically-a requirement at this level
Will not use because it is of little value

Question 10: Scripts- / Mini-dissertations

10A: Value of scripts/mini-dissertations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
10.A.2	The skills of the learner	0	3	6
	Clarification SWW: Research skills which is the most important but also writing and organisational skills.			
10.A.4	The clinical competence of the learner	0	8	2

10B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Time consuming
Will choose-Show research skills, write scientifically and academically- a requirement at this level
Not useful

10C: General Comments

Take a look at the following statements about scripts / mini-dissertations. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
10.C.5	This method gives the student the opportunity to contribute to the solution of problems and the expansion of knowledge in their field of research	8	1	1

Question 11: Mini- CEX (Mini Clinical Evaluation Exercise)

(Explanation SWW: The Mini-CEX facilitates formative assessment of core clinical skills. It is a 10-20 minute direct observation of a trainee-patient interaction. It is good for the evaluation of the different clinical skills including medical interviewing, physical examination, informed decision making, counselling and clinical judgement reasoning. The technique was developed by the American Board of Internal Medicine and they make use of a specific form to assess the candidate. For more information go to www.abim.org)

11A: Value of Mini-CEX

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
11.A.2	The clinical skills of the learner	6	4	0
11.A.3	The professional behaviour (including attitudes and values) of the learner	6	1	3
11.A.4	The clinical competence of the learner	6	3	1

11B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

"Big brother(s)" is/are watching from behind a one way mirror It is perhaps the only time in his/her life that the candidate will do it perfectly according to the handbook

Tomorrow shortcuts and sloppiness might take over But that is not the assessor's problem-the candidate knows the drill (or not!) An excellent advance!
Will choose-Assess the real world interaction of a student and patient
No experience

Question 12: Direct Observation of Procedural Skills (DOPS)

(**Explanation SWW:** DOPS is a method designed to provide feedback on procedural skills essential to provide good clinical care. This technique has been developed by the Royal College of General Practitioners and evaluates certain procedures including male genital and prostate examination. A specific form has been developed to assess the candidate's performance. For more information go to www.rcgp.org.uk)

12A: Value of DOPS

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
12.A.3	The professional behaviour (including attitudes and values) of the learner	8	1	1

12B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

A Mini-CEX is much better than a DOPS
Will choose-Assess the real world interaction of a student and patient
Learner usually very nervous. Will not use

**THIS IS THE END OF THE DELPHI PROCESS.
THANK YOU FOR THE TIME AND EFFORT YOU TOOK TO COMPLETE THE DELPHI
PROCESS.
THE RESEARCHER APPRECIATES YOUR PARTICIPATION**

APPENDIX G (INCLUDING APPENDICES G1-G2)

APPENDIX G1: FEEDBACK ON DELPHI ROUND PROCESS THREE

**APPENDIX G2: QUESTIONNAIRE FOR DELPHI PROCESS PANEL ROUND
FOUR**

FEEDBACK ON DELPHI ROUND THREE

AN ASSESSMENT MODEL FOR REGISTRARS IN UROLOGY

Dear Delphi participant,

Thank you once again for the time and effort you put in to assist me in this process. I attach the results of Round Three of the Delphi process to this letter. The aim of the feedback is to provide you with the results and information that was gained in round Three.

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After you have received your feedback, please reconsider the answer that you have given in Round Three of the Delphi process and decide if you want to stick to your answer. If you want to change the answer that you have given in Round Three, space is provided underneath the results that were given to the different options of each statement in Round Three. Please indicate your option with an X if you want to change your answer of Round Three.

For example:

		1	2	3
4.D.2	This method tests the candidate's attitude, insight and thought processes	3	6	1
		X		

Please provide me with your response to this feedback by Friday, February 6, 2012. If I do not receive any response from you by then, I will assume that you are satisfied with the responses that you have given in Round Three. In the attached feedback I have shaded all the statements where consensus has been reached. I have also included comments that were made by the participants for your information. I shall address all the comments that were made in the final chapter of this thesis and therefore I have not included my own response to your comments in this feedback paper.

I have addressed the enquiries and questions raised by the participants in Round Three to the best of my abilities. My response to your question/enquiry is indicated in bold underneath the specific statement as follows: **Clarification SWW**.

For example:

		1	2	3	Comments
5.	The purpose of assessment is to classify or rank the performance of students. Clarification SWW: This is applicable to summative assessment	2	7	1	Aim more at the student's ability than ranking in a group

In the statements where consensus was not reached, I have included the numerical values that were awarded by the participants to the different options for that specific statement.

Certain participants in the Delphi process did not answer all the questions; this will explain why some statements have less than ten responses.

Once again my sincere thanks for your participation in my research. I really appreciate your time and effort.

Kind regards,

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QUESTIONNAIRE FOR DELPHI PROCESS PANEL ROUND FOUR**SECTION B:
THE PURPOSE OF ASSESSMENT**

Part 1: In this section certain statements are made about the purpose of assessment.

Please look at the following statements and indicate how important each is according to the following scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
3.	The purpose of assessment is to give learners the opportunity to monitor their progress.	6	4	0	
5.	The purpose of assessment is to classify or rank the performance of students.	2	7	1	

**SECTION D:
QUALITY ASSURANCE IN ASSESSMENT**

This section deals with issues related to quality assurance in assessment.

Look at the following statements regarding quality assurance in assessment. Please indicate how important each of the following quality assurance mechanisms in assessment is according to the scale:

1 – Essential 2 – Useful 3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
2.	Dates of assessment must be communicated to learners in advance	7	3	0	
5.	The learning content that will be covered in the assessment must be explained to the learners	6	4	0	
6.	The type of questions that will be asked must be discussed with learners	1	6	3	
12.	Memorandums must be an integral part of all assessments	4	6	0	

**SECTION E:
PRINCIPLES OF ASSESSMENT**

This section deals with the principles of assessment.

Look at the following statements regarding certain principles of assessment. Please indicate how important each of the principles of assessment is according to the following scale:

1 – Essential

2 – Useful

3 – Unnecessary

Please mark the option you choose with an X and only mark one option.

Please add your comments where you feel that it is necessary.

Extra comments can be added on a loose piece of folio paper.

		1	2	3	Comments
2.	Assessment must focus on deep, active learning processes	5	5	0	
11.	The assessment methods should include a wide range of approaches.	6	4	0	

SECTION I:

ASSESSMENT METHODS AND THEIR APPROPRIATENESS

This section deals with assessment methods and appropriateness.

This section deals with different methods that are currently used in the assessment of registrars. Each method of assessment will be discussed separately. In the first part you will be asked to judge factors associated with the compilation of the specific type of assessment. In the second part you will be asked to rate the value of each type of assessment as an important part of the assessment process.

General comments about the specific assessment method will be added in some cases. Please give your opinion about the statement made and add appropriate comments where necessary. Extra comments can be added on a loose piece of folio paper

Question 1: Short questions

1B: Value of short questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
1.B.3	The professional behaviour (including attitudes and values) of the learner	0	7	3

1C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 2: MCQ's (Multiple Choice Questions)**2B: Value of multiple choice questions**

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
2.B.2	The skills of the learner	0	6	3

2C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 3: Essay-type questions**3A: Compilation and marking of essay-type questions**

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
3.A.1	To compile the questions for this assessment method	1	7	1

3B: Value of essay-type questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
3.B.2	The skills of the learner	0	6	3
3.B.3	The professional behaviour (including attitudes and values) of the learner	0	6	4

3C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

3D: General Comments

Take a look at the following statements about essay-type questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
3.D.2	This method test knowledge as well as comprehension, insight, logic, judgement and the ability to organise and communicate	6	4	0

	information			
3.D.5	This method exposes deficits in a candidate's knowledge	5	5	0

Question 4: Case studies (paper)

4B: Value of paper case study questions

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
4.B.2	The skills of the learner			
		4	5	0

4C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

4D: General Comments

Take a look at the following statements about paper case study questions. Give your opinion about the statement using the following scale:

1=Agree 2=Uncertain 3=Disagree

		1	2	3
4.D.2	This method tests the candidate's attitude, insight and thought processes	3	6	1

Question 5: Orals (Vivas)

5B: Value of questions for oral examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
5.B.2	The skills of the learner	3	6	0

5C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 6: Clinical cases

6A: Compilation and questions for "real life" clinical cases

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
6.A.1	To compile the questions for this assessment method	2	5	2

6C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 7: OSCE's (Objectively structured clinical examinations)

7A: Compilation of questions for OSCE examinations

Mark on a scale of 1 – 3 (1=short; 2=average; 3=long) the amount of time that you will need for the following parts of this assessment method:

		1	2	3
7.A.2	To mark this assessment	3	6	0

7B: Value of questions for OSCE examinations

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
7.B.2	The skills of the learner	3	4	2
7.B.3	The professional behaviour (including attitudes and values) of the learner	1	6	3

7C: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 9: Assignments

9A: Value of assignments

Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:

1=Good value 2=Moderate value 3=Little value

		1	2	3
9.A.4	The clinical competence of the learner	0	5	5

9B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 10: Scripts- / Mini-dissertations

10A: Value of scripts/mini-dissertations

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
10.A.2	The skills of the learner	0	3	6

10B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

Question 11: Mini- CEX (Mini Clinical Evaluation Exercise)

**Please rate the value of this assessment method to assess the following outcomes:
Use the following scale:**

1=Good value 2=Moderate value 3=Little value

		1	2	3
11.A.2	The clinical skills of the learner	6	4	0
11.A.3	The professional behaviour (including attitudes and values) of the learner	6	1	3
11.A.4	The clinical competence of the learner	6	3	1

11B: Please list the reason(s) why you will / will not choose this method as an appropriate method of assessment

**THIS IS THE END OF THE DELPHI PROCESS.
THANK YOU FOR THE TIME AND EFFORT YOU TOOK TO COMPLETE THE DELPHI
PROCESS.
THE RESEARCHER APPRECIATES YOUR PARTICIPATION.**