

**MENTORSHIP AS A STRATEGY TO  
IMPROVE RESEARCH  
OUTPUT AT TERTIARY INSTITUTIONS:  
A CASE STUDY OF UNIVERSITY OF  
JOHANNESBURG**

**REETHA NUNDULALL**

**SEPTEMBER 2010**

**MENTORSHIP AS A STRATEGY TO IMPROVE RESEARCH  
OUTPUT AT TERTIARY INSTITUTIONS: A CASE STUDY OF  
UNIVERSITY OF JOHANNESBURG**

Dissertation submitted in fulfilment of the requirements for the

**MASTER OF TECHNOLOGY**  
Public Management

**FACULTY OF MANAGEMENT SCIENCES**  
Department of Public Management

**DURBAN UNIVERSITY OF TECHNOLOGY**  
September 2010

Submitted by:

**REETHA NUNDULALL**

**APPROVED FOR FINAL SUBMISSION**

Supervisor: Prof K Reddy (LLD)

Date:

Co-supervisor: Dr N Dorasamy (PhD)

Date:

---

## DECLARATION

I, Reetha Nundulall, declare that this dissertation is my own work and has not been submitted previously for any degree in any University.

.....  
Reetha Nundulall

.....  
Prof. K Reddy  
**Supervisor**

## LIST OF ABBREVIATIONS

ASSAF	-	The Academy of Science of South Africa
CHE	-	Council on Higher Education
CSIR	-	Council for Scientific and Industrial Research
DoE	-	Department of Education
DoHET	-	Department of Higher Education and Training
DST	-	Department of Science and Technology
HE	-	Higher Education
HEQC	-	Higher Education Quality Committee
HESA	-	Higher Education South Africa
HSRC	-	Human Sciences Research Council
MRC	-	Medical Research Council
NRF	-	National Research Foundation
OECD	-	Organisation for Economic Co-operation and Development
RAU	-	Rand Afrikaanse Universiteit
RCD	-	Research Capacity Development
REMP	-	Research Mentorship Programme
TTK	-	Thuthuka
TWR	-	Technikon Witwatersrand
UJ	-	University of Johannesburg

## **ABSTRACT**

Research production is increasingly becoming a focal point in higher education transformation. Merging of higher educational institutions has produced various challenges ranging from changing the focus from purely teaching functions to both research and teaching. While novice researchers (i.e. those that are training to become researchers) are expected to develop capacity by engaging in research through various means, the aim of capacity development is to enable young researchers (i.e. those who are developing a profile as researchers) to publish in high impact publications which attracts funding in the form of subsidy from the Department of Higher Education and Training (DoHET). The manners in which tertiary educational institutions promote research output through capacity development initiatives are important from the perspective of attracting funding.

The researcher undertook this study to explore mentorship as a means to increase research output at a merged tertiary institution. A case study using a mixed method approach was adopted.

The literature reviewed indicated that mentorship was popular in many fields but there is a paucity of data evident on mentorship as a means to increase research output for researchers. The researcher obtained views and perceptions from academic staff members from sample faculties with regards to an implementation of a formal research mentorship program (REMP). Semi-structured interviews with the deans of four sample faculties and analyses of institutional documentation was also undertaken to ascertain institutional and faculty support and development for research.

The findings of this study are useful not only to the case study institution, but to all HE institutions, especially merged institutions and the public management sector.

## ACKNOWLEDGEMENTS

My sincere thanks and appreciation goes to the following people:

First and foremost, I thank my friend for over two decades, Nishi Ramrathan, for encouraging me to register for my Masters and volunteering her husband's assistance without even asking him. Off course, I knew I did not have anything to worry about. Knowing her husband, Prof. Labby Ramrathan, as a person passionate about research, is an "ever-ready battery" – who is always "ready" to help. His role as my mentor (especially at the initial stages when I was "lost" and confused), his patience and expertise smoothened the ride to my destination.

My supervisor, Prof. K Reddy (Tony) for his patience, inspiration, encouragement and guidance during the course of the research and his positive energy instilled in me the determination to persevere to the end.

Prof. Thomas auf der Heyde for recruiting me into the research department. This opportunity provided me the exposure to the research environment thus creating the foundation and focus for my study.

Ferdi van der Walt for his support, guidance and taking the responsibility for obtaining UJ clearance for my study.

My buddy for over 20 years, Kogie Pretorius, for her assistance in the final editing.

Riette Eiselen (questionnaire design), Shamala Naidoo (excel), Laurance Singh (editing and guidance), Ishwarie Hariparsad (perusing the draft questionnaire), Hettie du Plessis for her encouragement and a very close friend for over 3 decades, Ranjinee Pillay (editing). Dale Towert for always listening patiently to my studying woes!

The participants of this study who, despite their time constraints, provided valuable data that made this study possible.

The University Management for allowing me to use the institution as my case study.

My niece, Kavisha and her husband Anushay Hariram for providing the “taxi service” in Durban so I could meet with my supervisor and mentor.

My family and friends for understanding when I could not spend time with them during the course of my study, especially Mali Reed, who always encouraged me to complete my studies first, then socialise.

The best for last - the **Almighty God** for giving me the inner strength, commitment and perseverance to achieve my goal and without whom I would be lost in life!

## **DEDICATION**

I dedicate this work to my late parents, Nundulall and Kailaspathi Rampersad

As parents they had always wished to educate their children to the highest level possible. However, due to circumstances they were unable to fulfil this dream.

My achievement would have made them the proudest parents.



# TABLE OF CONTENTS

	<b>Page</b>
Declaration	i
List of Abbreviations	ii
Abstract	iii
Acknowledgements	iv
Dedication	vi
Table of Contents	vii
List of Figures	xi
List of Tables	xiii
List of Appendices	xiv
 <b>Chapter 1: Context of the Study</b>	
1.1 Introduction	1
1.2 Challenges for the higher education	3
1.3 Problem statement	5
1.4 Research objectives or questions	6
1.5 Rationale for the study	7
1.6 Scope of the study/delimitations	7
1.7 Literature review	7
1.8 Research methodology	12
1.8.1 Study type	12
1.8.2 Data collection	12
1.8.2.1 Survey	12
1.8.2.2 Sampling	13
1.8.3 Document analysis	13
1.8.4 Interviews	14
1.9 Data analysis	15
1.10 Structure of chapters	15
1.11 Conclusion	16

		<b>Page</b>
<b>Chapter 2: Literature Review</b>		
2.1	Introduction	17
2.2	Defining research and its purpose	18
2.3	Defining research output and its importance	20
2.4	Reasons for low research output	24
2.5	Factors hindering the progress towards global standards	26
2.6	Role of government in promoting research	31
2.7	Role of higher education institutions in promoting research	36
2.8	Capacity development in higher education and research	40
2.9	Mentorship	45
2.9.1	Concept of mentoring	45
2.9.2	Mentoring trends	46
2.9.3	Requirements for and benefits of a mentorship programme	54
2.9.3.1	Mentor and his/her role	54
2.9.3.2	Mentee and his/her role	55
2.9.3.3	Organisational benefits	56
2.9.3.4	Mentor benefits	56
2.9.3.5	Mentee benefits	57
2.9.3.6	Barriers to mentoring	57
2.9.3.7	Negative mentoring experiences	58
2.9.3.8	Successful mentoring	58
2.10	Conclusion	59
<b>Chapter 3: Research Methodology</b>		
3.1	Introduction	61
3.2	Objectives of the study	61
3.3	Research methodologies: case study using quantitative and qualitative techniques	62
3.4	Rationale for using this case study	64
3.5	Research design	65
3.5.1	Survey	68

		<b>Page</b>
3.5.2	Sampling techniques and description of the sample	69
3.5.3	Defining the population	71
3.5.4	Reasons for selecting this population	72
3.5.5	Defining the sample for the study	72
3.5.6	Sample size	73
3.6	Data collection	75
3.6.1	Questionnaires	77
3.6.1.1	Questionnaire design	79
3.6.1.2	Questionnaire format	81
3.6.1.3	Administering of the questionnaires	82
3.6.1.4	Pre-test of the research instrument	85
3.6.2	Interviews	86
3.6.3	Document analysis	87
3.7	Validity and reliability	87
3.8	Data analysis and interpretation	89
3.9	Statistical analysis of the questionnaire	89
3.10	Limitations of the study	90
3.11	Conclusion	91

## **Chapter 4: Data Analysis and Interpretation**

4.1	Introduction	92
4.2	<b>Part 1: Quantitative data</b>	92
	<u>Section A</u>	94
4.2.1	Biographical and background information of respondents	94
	<u>Section B</u>	100
4.2.2	Response from mentors	100
4.2.2.1	Perceptions of mentors towards mentoring	100
4.2.2.2	Profile of mentors in terms of capacity	103
4.2.2.3	Process of mentoring	114
	<u>Section C</u>	115
4.2.3	Response from mentees	115

		<b>Page</b>
4.2.3.1	Perceptions of mentees towards mentoring	115
4.2.3.2	Profile of mentees	119
4.2.3.3	Process of mentoring: mentees views	123
	<u>Section D</u>	124
4.2.4	General response	124
4.2.4.1	Aims, advantages and disadvantages of REMP	124
4.2.4.2	Existence of REMP	128
4.2.4.3	Implementation of REMP	129
4.2.5	Gap score analysis of the overall response to REMP	138
4.2.6	Summary	141
4.3	<b>Part 2: Qualitative data</b>	142
4.3.1	Document analysis	142
4.3.1.1	Institutional documentation	142
4.3.1.2	Faculty documentation	150
4.3.2	Interviews	152
4.3.2.1	Executive management of institutional research domain	152
4.3.2.2	Deans	152
4.4	Conclusion	160
	<b>Chapter 5: Conclusions and Recommendations</b>	
5.1	Conclusions	161
5.2	Recommendations	165
5.3	Future research	172
5.4	Summary	172
	<b>List of References</b>	
6.1	References	175

## LIST OF FIGURES

	Page
<b><u>Chapter 2</u></b>	
<i>Figure 1</i> – Types of research output	21
<i>Figure 2</i> – Number of FTE researchers per 1 000 total employment	25
<i>Figure 3</i> – Research output – international comparison	32
<b><u>Chapter 3</u></b>	
<i>Figure 4</i> - Methods of data collection	75
<i>Figure 5</i> - Five processes in questionnaire design	80
<b><u>Chapter 4</u></b>	
<b>Section B</b>	
<i>Figure 6</i> - Mentors' responses on the benefits of mentoring	100
<i>Figure 7</i> - Constraints as a mentor	102
<i>Figure 8</i> - Profile of mentors	104
<i>Figure 9</i> - Years of mentoring experience	105
<i>Figure 10</i> - Publication of articles in accredited journals by mentors	106
<i>Figure 11</i> - Publications by mentors in collaboration with mentees	106
<i>Figure 12</i> - Number of people mentored by a single mentor	107
<i>Figure 13</i> - NRF rating of mentors	108
<i>Figure 14</i> - Highest qualification of mentors in terms of age	110
<i>Figure 15</i> - Mentors per faculty in terms of age	112
<b>Section C</b>	
<i>Figure 16</i> - Mentees' perception towards mentoring	116
<i>Figure 17</i> - Constraints as mentees	118
<i>Figure 18</i> - Respondent's last year of being mentored	120
<i>Figure 19</i> - Number of publications by mentees in collaboration with their mentors	120

<i>Figure 20</i>	-	Number of publication as single authors	121
<i>Figure 21</i>	-	NRF rating of mentees	121
<i>Figure 22</i>	-	Bio-graphics of mentees	122

#### **Section D**

<i>Figure 23</i>	-	Aims of REMP	124
<i>Figure 24</i>	-	Advantages of REMP	125
<i>Figure 25</i>	-	Disadvantages of REMP	126
<i>Figure 26</i>	-	Response to a formal REMP	129
<i>Figure 27</i>	-	Bio-graphics of respondents in favour of a formal REMP	132
<i>Figure 28</i>	-	Level at which REMP is preferred	133
<i>Figure 29</i>	-	Participant as a mentor or mentee	134
<i>Figure 30</i>	-	Preference of mentor or mentee	135
<i>Figure 31</i>	-	Preference on the type of mentoring	136

#### **Chapter 5**

<i>Figure 32</i>	-	A model for research mentoring	169
<i>Figure 33</i>	-	Salient findings on mentorship	174

## LIST OF TABLES

		<b>Page</b>
<b><u>Chapter 3</u></b>		
<i>Table 1</i>	- Advantages and challenges on various source of data collection	76
<i>Table 2</i>	- Process in administering the questionnaire	84

## LIST OF APPENDICES

		<b>Page</b>
<b>Annexure A</b>	- Letter of informed consent and questionnaire	200
<b>Annexure B</b>	- Frequency table of questionnaire	201
<b>Annexure C</b>	- Interview questions	202
<b>Annexure D</b>	- Transcript of interview with Faculty A	203
<b>Annexure E</b>	- Transcript of interview with Faculty B	204
<b>Annexure F</b>	- Transcript of interview with Faculty C	205
<b>Annexure G</b>	- Transcript of interview with Faculty D	206
<b>Annexure H</b>	- Consent from UJ Management	207
<b>Annexure I</b>	- Consent from Faculty of Engineering	208
<b>Annexure J</b>	- Consent from Faculty of Humanities	209
<b>Annexure K</b>	- Consent from Faculty of Management	210
<b>Annexure L</b>	- Consent from Faculty of Science	211
<b>Annexure M</b>	- Clearance: UJ	212
<b>Annexure N</b>	- Clearance: Faculty of Engineering	213
<b>Annexure O</b>	- Clearance: Faculty of Humanities	214
<b>Annexure P</b>	- Clearance: Faculty of Management	215



<b>Annexure Q</b>	-	Clearance: Faculty of Science	216
<b>Annexure R</b>	-	Clearance: NRF	217

## **CHAPTER 1**

### **CONTEXT OF THE STUDY**

#### **1.1 Introduction**

In the 1980s, the traditional bureaucratic public administration model of Max Weber and Woodrow Wilson was challenged in countries such as England, Australia and New Zealand. A new model of public sector management emerged in these countries called New Public Management. New Public Management is generally inspired by the values and concepts of the private sector and was seen as a way of cutting through red tape and rigidity associated with old-style public administration (Cameron, 2009:3). Clarke & Newman 1997, Ferlie, Ashburner, Fitzgerald & Pettigrew 1996 and Pollitt & Bouckaert 2000 (as quoted by Leisyte (2006:2)) state that the recent decade have witnessed changes in public governance in Western Europe with reforms focusing on cutbacks, deregulation and privatisation. Some of these reforms have been inspired by New Public Management, which deliberately alters the structure and policy-development process in the public-sector organisation with the purpose of making them more efficient and effective.

In South Africa, during the apartheid era (pre-1994), the South African public service was isolated and out of touch with international developments (Thornhill 2008 as quoted by Cameron (2009:5)). During the transition in the early 1990s very little work was done by the African National Congress on the nature of post-apartheid administrative change. The previous Minister of the Department of Public Service and Administration, Gerald Fraser-Moleketi, stated in an interview that, "Public Service Reform was not seen as a sexy topic" (Cameron, 2009:5). However, the White Paper on Transformation of the Public Service laid down the national policy framework for the transformation of the public service. Many of its recommendations were in line with 'international best practice', although the White Paper warned against the uncritical adoption of the New Public Management framework (Bardill 2000:105 as quoted by Cameron (2009:6)).

The White Paper on Transforming Public Service Delivery (RSA 1997 as quoted by Cameron

(2009:25)) is commonly known as Batho Pele (People First) which was aimed to make service delivery a priority in the public service.

This goal was further entrenched in the Constitution of the Republic of South Africa (Act 108 of 1996) by providing clear guidelines within which government had to determine its policies and how the administration of the public sector had to be conducted. It is further stated in Chapter 10 of the Constitution 1996 that public administration has to be governed by democratic values and principles as contained in the constitution, including *inter alia*:

- promoting the efficient and effective utilisation of resources;
- development-oriented public administration;
- providing services impartially, fairly and equitably and
- obtaining accountable public administration (Thornhill, undated:3).

In order to achieve these goals, skilled human resource is required. According to Mnculwane (2008:Chapter 2.2) Section 8 of the Public Service Act No. 103 of 1994 of the Republic of South Africa, describes the public service as a phenomenon that consists of persons who are in one way or another, holding office within the establishment of government. However, Thornhill (undated:4) argues that in many cases progress or development is inhibited by a lack of sound managerial and properly trained and experienced public servants to operate within the system.

According to the White Paper on Human Resource Management in the Public Service (Department of Public Service and Administration, 1997:42) it is emphasised that the success of the public service in delivering its operational and developmental goals depends primarily on the efficiency and effectiveness with which employees carry out their duties and believes that performance management is an integral part of an effective human resource management and development strategy. The performance assessment process helps to identify strengths and weaknesses and interventions are needed to deal with these. This includes employees' future training and needs and other developmental interventions such as career counselling, coaching and mentoring.

For the purpose of this study, a focus on public service delivery was explored in the education sector, in particular the Higher Education (HE) sector. The focus is on capacity building as a strategy to develop human resources in the field of research, using mentorship.

## **1.2 Challenges for Higher Education sector**

The growth in knowledge has placed tremendous resource pressure on HE institutions competing to remain at the leading edge in teaching, learning and research. Hence, the Higher Education Act 101 of 1997 (South Africa, 1997:Preamble) aimed to “restructure and transform programmes and institutions to respond better to the human resource, economic and development needs of the Republic.” This has necessitated a new focus on practices and procedures to facilitate knowledge transfer and knowledge management within the context of powerful learning environments. In this regard, mentoring can be considered as an important vehicle driving the advancement of knowledge and scholarship while promoting optimal opportunities for learning and the full realisation of the potential of both students and employees.

The White Paper on Education and Training (Department of Education, 1995:7) emphasises that education and training are vital elements of human resource development. It can be argued that in a ‘knowledge economy’, multi-faceted approaches to education and training are needed to ensure timeous responsiveness to a dynamic learning environment. Therefore, the role of mentoring can be considered as integral not only to developing skills and competencies but also for flexibility and adaptability within the education and training environment. Mentoring can significantly contribute to lifelong learning and the development of the learner’s ability to put generic knowledge and skills into action.

With the transformational agendas of South Africa (post 1994) in progress, the education system is seen as a cornerstone in the achievement of such goals. In an interview with Dr P Ramrathan, Head: School of Education Studies, University of KwaZulu-Natal (2007) he explained that “prioritising knowledge in a knowledge led process is the key to the process of change. Knowledge production, in turn is dependent upon the research capacity of our nation.

Hence, research production is increasingly becoming a focal point in HE transformation to inform transformational processes. The previously dominant teaching function of HE institutions is now making way for the other two key competences of HE i.e. research and community engagement. Is our HE system ready for this change in emphasis?"

A similar view is expressed by Leisyte (2006:9-10) who highlights some key findings in a comparative study between English and Dutch universities on the effects of new public management on research practice. University management and external regulating agencies have increased the pressure to perform and to be accountable. It has also brought pressure to collaborate and compete for resources, especially in search for excellent human capital. However, the major concerns for academics in terms of research are the pressure for high performance in research from funding agencies and university management while tackling the ever increasing teaching loads.

The functions of HE institutions are teaching, research and community engagement. While there is a major focus on teaching, there is a shift towards promoting research at traditional universities and universities of technology. This goal is supported by the HE institutions for e.g. the University of Johannesburg (UJ), a comprehensive university offering both academic and technological study programmes, iterates that "research remains a top priority of the university as it enables the development of distinguished scholarship, the collective outcome of which must be teaching excellence. Research is also the source for new knowledge" (Research Top Priority at UJ, 2007:1).

While novice researchers (i.e. those that are training to become researchers) are expected to develop capacity by engaging in research through various means, the aim of capacity development is to enable young researchers (i.e. those who are developing a profile as researchers) to publish in high impact publications.

Research output varies in values and ranges from articles in high impact journals to books and book chapters and publication of doctoral theses. However, some research outputs are valued more than others for e.g. research published in accredited journals have a higher value

than research reports. Where the former attracts funding in the form of subsidy from the Department of Education (DoE), the other may not. The fact that we are in an economy and a knowledge led society, research in a high impact journal is favoured over other forms of research output (Ramrathan, 2007).

In order to promote research within the context of a knowledge driven society, institutions are embarking on various activities to encourage staff to be research active. For example, to promote research, the University of Pretoria has a Research Development Plan where funding is provided to novice researchers and the institution expects them to have a mentor who forms part of the application and reports (Olivier, 2007).

The manners in which HE institutions promote research output through capacity development initiatives are important for attracting funding. The purpose of this study is therefore to determine whether mentorship is a useful strategy of improving research output.

### **1.3 Problem statement**

The problem explored is the relatively low research output at a merged HE institution. The expectation of HE institutions is that every academic should publish research or produce artefacts. While some HE institutions focus on teaching and research, other institutions focus on teaching only. The challenge for those focused on teaching only will be to produce publications to meet the requirements of HE institutions.

Geber (2005:1) pointed out that there is a concern by the Commission on Higher Education (CHE) about the publication profiles of academics in South Africa. The CHE 2002/3 report reflects that there are 15 000 academic and professional staff in HE institutions but only 2000 (13.5%) are 'research active' and produce publications. Geber also mentions that academics between 35 and 40 are producing fewer publications and there is an ageing population of research active staff (45% are over 50 years old and half of all A-rated scientists are over 60 years), so there are fewer senior mentors available. Hence, there is a need for younger academics to become more research active.

Merging of higher educational institutions in the re-landscaping of higher education in South Africa has produced various challenges ranging from changing the focus from purely teaching functions to both research and teaching and to accountability. Academics are increasingly put under pressure to account for the changing performance demands. One such pressure is for academics to produce publications in high impact journals. There is also the need to find sustainable mechanisms to enhance and support research capacity which is a core function of an academic. Those in the employ of former technikons have limited or no experience in research as their focus was mainly on teaching. Therefore, this study hopes to establish a sustainable process for academic staff to improve their research output.

In order to be the cutting edge research-focused institution, research output needs to be accelerated. According to van Niekerk (as quoted by the National Research Foundation (NRF) (2007c:5)) “universities should aspire to have at least 25% of their academic staff rated by the NRF to be regarded as a research-intensive university.”

A formal Research Mentoring Programme (REMP) has been proposed by the researcher as a possible research capacity development strategy to improve research output. Before such a programme is implemented, the perceptions and views of researchers and managers regarding mentorship as a strategy to improve research output were explored.

#### **1.4 Research objectives or questions**

The objective of this study is to determine mentorship as a strategy to improve research output.

The sub-objective of the study is to:

- determine the reasons for relatively low research output at a merged HE institution;
- determine the existence of a REMP and whether HE institutions have REMP in place and the nature of such a programme and
- explore the perceptions, attitudes and preferences of researchers/academics and

managers regarding mentorship as a strategy to improve research output.

## **1.5 Rationale for the study**

This study should assist in the following ways:

- it makes a contribution to the research field by having literature on mentorship available;
- the researcher is employed in the research division. The study will assist in planning and supporting research activities and capacity development and
- in terms of higher education needs, academics need to increase research output. This study hopes to find out how it can facilitate staff capacity development to improve research output in the form of accredited publications in journals, books, book chapters and peer-reviewed conference proceedings both nationally and internationally as well as acquisition of patents.

## **1.6 Scope of the study/delimitations**

This study consisted of a case study that was carried out at a merged tertiary institution in Gauteng for convenience and easy accessibility as the researcher is a full-time permanent employee of that institution. This study involved academic staff members (excluding temporary staff members) in four of the nine faculties. The Deans, a Research Manager, Deputy Vice-Chancellor (Research, Advancement and Innovation) and Executive Director: Research and Innovation were scheduled to be interviewed. This study was treated in confidence until the final clearance was granted by UJ for public viewing on completion.

## **1.7 Literature review**

Research during the apartheid era was broad and scientifically based. In the early 1990s South Africa was conducting around 0.5% of the world's scientific research. In the HE sector universities conducted nearly 99% of research compared to the technikons. "While Universities produced 70% of South Africa's indexed research publications, nearly 80% of



these were concentrated in five institutions – the ‘white’ universities of Cape Town, Natal, Pretoria, Stellenbosch and Witwatersrand” (Study South Africa, 2007:1-2).

In the post-apartheid period, many policies and procedures had to be reviewed and in some cases new policies had to be established, such as the National Plan for Higher Education in South Africa. According to Asmal (2001:1) the vision for transforming the higher education system was articulated in Education White Paper 3: A programme for the Transformation of Higher Education (1997). The White Paper indicates the role of higher education in a knowledge-driven world as three-fold, one of which is:

“Production, acquisition and application of new knowledge: National growth and competitiveness is dependent on continuous technological improvement and innovation, driven by a well-organised, vibrant research and development system which integrates the research and training capacity of higher education with the needs of industry and of social reconstruction.”

There is also the White Paper on Science and Technology by the Department of Science and Technology (DST), as well as a National Research and Development Strategy (2002) that created the basis for the National System of Innovation to promote synergy and encourage research in line with national priorities (Study South Africa, 2007:2).

South Africa may not be producing comparatively high research output to reach global standards, but the National Commission on Higher Education (1996:1.1 Preamble) cites South Africa’s HE system as having considerable capacity in research, teaching and human resources that can play a pivotal role in the political, economic and cultural reconstruction and development of South Africa.

While some researchers are producing relatively high output, according to Power (2006b:5) a recent investigation by Professor Anastassios Pouris, Director of the Institute for Technological Innovation at the University of Pretoria, revealed that only six South African institutions make it into the world’s top 1% but only in nine of twenty two disciplines. These are the Universities of

Witwatersrand, Cape Town, Pretoria, KwaZulu-Natal, Stellenbosch and Free State. He also mentions that there are seven South African scientists who are among the world's most influential researchers of the past twenty five years and of these only three are based at universities (Power, 2006a:5). Two of the researchers are based at the University of Cape Town while the other is based at the University of KwaZulu-Natal (ISI Highly Cited Researchers, 2007:1).

A 2005/6 survey by the Human Science Research Council (HSRC) indicates that South Africa has 1.5 FTE (full-time equivalent) researchers per 1 000 total employment, marginally down from the 1.6 FTE researchers for 2004. Compared to other countries like Sweden, Japan, Norway, Australia, France, Korea, Russia, Spain and Argentina, this indicator of human resource potential for research is relatively low and needs to be monitored as the research capacity of a country significantly influences its research and development output potential (Department of Science and Technology, 2007:14).

In terms of a draft report by Auf der Heyde (2007:2) some disabling factors that constitute research barriers that could impact on research output are work-related responsibilities, personal and career satisfaction and resource provision.

“While policies call on universities to be responsive to national goals and development needs, they also warn against neglecting the traditional function of ‘basic’ research that creates new knowledge, generates an intellectual culture and high level human resources and keeps academics up to date with international scientific developments” (Study South Africa, 2007:3). This is a great challenge for many institutions due to merging, increase in student numbers, small or no increase in employment of staff per student ratio and decrease in funding. In merged comprehensive institutions, this is further exacerbated as there are two different levels of research cultures, one (universities) being a purely academic institution involved with research since inception while the other (ex-technikons), whose focus was on vocationally oriented teaching and was only introduced to degree-awarding status in 1993 in terms of the Technikon Act of 1993.

Notwithstanding the above, institutions have to find a way forward to improve research output, for e.g. looking at providing incentives such as financial rewards, staff development, improved conditions of service, proper equipment and research capacity development. Tshwane University of Technology, for instance, had developed the first stage of an initiative to support the development of individual researchers (Lourens:2005) while the North West University looked at establishing a Research Capacity Development (RCD) programme (Lourens:2007). The Vaal University of Technology had embarked on a mentorship programme in July 2007 (Pretorius:2007).

In an interview with Mr N Nsele, a Training and Development Specialist at UJ in the Human Resource Training and Development (T&D Stream) (2007) he explained that the UJ mentorship programme was a new initiative aimed at all academic, administrative and support staff, especially new and inexperienced staff and those seeking to increase their capacity to perform better at their jobs. It does not cater for researchers. According to Maistry, Head for the Post-Graduate Funding Support section (2007) there was no formal initiative/programme for RCD at the UJ and the placement of one was still in the process of being finalised.

Mentoring can be used as a capacity development initiative focusing on improving research output of individual researchers. According to Mentoring Works (2007:1) “mentoring is a synergetic relationship - two or more people engaged in a process that achieves more than each could alone.”

For this study, the primary purpose of mentoring is development. It is more about learning than teaching. It is also about how novice researchers may be ‘nurtured’ by professionals who are established in their research field.

As an agency of government responsible for promoting and supporting basic and applied research as well as innovation, the NRF piloted a mentoring programme for its Thuthuka (TTK) programme grant-holders. The mentoring programme was piloted at five institutions from March 2004 to March 2006. In terms of a report on the evaluation of the programme (NRF, 2006:4) the objective of the programme was to assist designated groups (young black

and/or women academics) to develop successful careers in research environments and to become established researchers.

Internationally, literature reviewed on mentorship indicates that many tertiary institutions focused this programme mainly for students. However, at the Monash University in Australia, the Department of Business Law and Taxation had recruited several new senior staff members since 2004 to increase research output and to provide research leadership and mentoring to junior members of staff. The University reported this as a successful mentoring strategy, with an increased number of staff commencing doctorates, producing DoE, Science and Training-recognised publications, and becoming interested in seeking research funding as a result of this mentoring (Monash University, 2008a:3).

The University of Tasmania ran a programme for nine months called Step Up. Step Up is a professional development programme designed to improve the research effectiveness, confidence and productivity of academic women in the University who have already completed their PhD. The aim of the programme was for participants to get established as academic researchers. It sought to put the participants in touch with more experienced researchers in their own and other disciplines (Currey:2007).

In reviewing the literature on research output, statistics reflect a perception that HE institutions in South Africa are lowly-rated research institutions. Although some institutions have an established RCD programme or are planning to embark on or have just embarked on such a programme there is no tangible evidence of its impact on research output.

Once again, the purpose of this study is to explore the causes of low research output and to examine perceptions on mentorship as a strategy to improve research output at HE institutions.

## **1.8 Research methodology**

### **1.8.1 Study type**

For the purpose of this study a case study approach was used. According to Gillham (2000:1) a case study can be an individual, a group, an institution or a large-scale community. A case study is one that investigates participants to answer specific research questions and which seeks a range of different kinds of evidence to get the best possible answers to the research questions.

Kothari (1990:140) cites a case study as a very popular method for qualitative analysis and involves a careful and complete observation of a social unit, be it a person, family, an institution, a cultural group or a whole community.

Currently there are 23 public HE institutions in South Africa. There is institutional diversity as a result of mergers in the HE system. This implies that the findings of a study of this nature may not necessary apply to all institutions in a generalised manner. Therefore, a case study approach was deemed most appropriate as it considers contextual factors that promote a particular way of doing things. Case studies allow for elimination of issues that are deeply rooted in every day practice within particular settings (Ramrathan, 2007).

The case study was on a merged HE institution in Gauteng which was the University of Johannesburg (UJ). The university was chosen for convenience and easy accessibility as the researcher is a permanent full-time employee at UJ.

### **1.8.2 Data collection**

#### **1.8.2.1 Survey**

Cooper and Emory (1995:269) mention that to survey, is to question people and record their responses for analysis.

A survey in the form of a questionnaire was emailed to academic staff in four faculties to get a sense of their research activity and their views on REMP. The questionnaire was a research instrument that consisted of open and closed questions.

According to Kumar (1999:110) a questionnaire is a written list of questions, the answers to which are recorded by respondents. The survey method was used as it enabled the researcher to have the confidence that the sample was not biased and the data needed from the respondents were available for a given analysis.

#### **1.8.2.2 Sampling**

The survey was administered to all academic staff members (excluding temporary staff members) from four of the nine faculties, viz. Engineering, Humanities, Management and Science.

For this study the sampling was done by purposive sampling. According to Welman, Kruger & Mitchell (2005:69) purposive sampling is where researchers rely on their experience, ingenuity and/or previous research findings to deliberately obtain units of analysis in such a manner that the sample they obtain may be regarded as being representative of the relevant population.

All academic staff members (excluding temporary staff members) from the four faculties, viz. Engineering, Humanities, Management and Science constituted the sample. These faculties were chosen as they are large in student and staff numbers in comparison to the other five faculties at the institution. Although these four faculties are large, in comparison to one another, their level of research output differs considerably for e.g. in the Faculties of Humanities and Management, one has a higher research output level as compared to the other. The same applies to the Faculties of Engineering and Science.

#### **1.8.3 Document analysis**

A document analysis of records and reports was done to ascertain what interventions the

institution was considering or implementing to promote research, identifying barriers that hindered research and enabling factors that promoted RCD.

#### **1.8.4 Interviews**

According to Melville & Goddard (1996:44) an interview involves a one-on-one verbal interaction between the researcher and the respondent.

The researcher conducted semi-structured one-on-one interviews with the Deans from the four sample faculties, a Research Manager from one of the four sample faculties (who was also present with the Dean in the capacity of Acting Vice-Dean). Interviews with the Deputy Vice-Chancellor (Research, Innovation and Advancement) and Executive Director (Research and Innovation) that were originally suggested, were not conducted due to the fact that two 2008 Research Reports provided the data that the researcher had required.

According to Welman, Kruger & Mitchell (2005:167) semi-structured interviews offer a versatile way of collecting data that can be used with all age groups. This type of interview also allows the interviewer to use probes with a view to clearing up vague responses, or to ask for elaboration of incomplete answers for e.g. “why?” to “could you elaborate on this?”

These staff members chosen were executive and senior members of staff empowered with the task of promoting research to help the university to achieve its goal of becoming a research-focused comprehensive institution. The purpose of the interviews was to ascertain their level of support for research in order to improve research output in the institution.

The interviews were recorded on tape. According to Lindlof & Taylor (2002:187) interview discourse must be recorded either by note taking or tape recording. The chief virtue of note taking is that it does not depend on mechanical devices. The advantage of using a tape recorder is that it enables the researcher to capture the interview more or less exactly as it was spoken and there is no worry about remembering a response.

## 1.9 Data analysis

Part of the analysis was focused on *A-priori* categories of analysis as well as a grounded approach to analysis. Ramrathan (2007) explained that the literature reviewed will present categories that will describe the way in which the survey instrument and part of interviews are constructed. These are referred to as *A-priori* categories. The grounded approach to analysis focused on data generated through the interviews and document analysis. The survey instrument was analysed by using the SPSS for Windows (version 17).

## 1.10 Structure of chapters

- Chapter 1** - This chapter presents the general introduction, background, problem statement and research aims and objectives.
- Chapter 2** - A review of related literature was conducted, focusing on the problems of low research output, as well as the concept of mentoring and the use of mentoring in capacity development generally and specifically in the research environment.
- Chapter 3** - This chapter outlines the design and the methodology of the research, sampling techniques and the research instrument.
- Chapter 4** - This chapter presents the data analysis, interpretation and graphical representation of the data and the research findings.
- Chapter 5** - This chapter presents the conclusions and make recommendations. It also suggests possible areas for future studies.



## **1.11 Conclusion**

This chapter has provided a comprehensive background to the study by highlighting some of the challenges facing HE institutions that have resulted in terms of numerous policies legislated by government. Policies such as the White Paper on Transforming Public Service Delivery; Constitution of the Republic of South Africa, 1996; and the White Paper on Human Resource Management in the Public Service, have all contributed to the re-landscaping of how the HE institutions operate. This has mainly impacted on merged institutions, especially those of a comprehensive nature facing the challenge of improving research output. This is followed by a brief statement on the research problem, the rationale for the study, the methodology and the analysis of data. The chapters for the study have also been outlined.

The next chapter will review national and international literature to determine the reasons for low research output at higher education institutions and what interventions have been legislated by government and implemented by higher education institutions to improve this scenario.

## **Chapter 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The previous chapter provided the background of this study. This chapter will review literature to determine the reasons for the comparatively low research output at HE institutions and the interventions that have been introduced by government and HE institutions to promote research and development. Further, it aims to determine whether HE institutions in South Africa have a REMP in place and the nature of such programmes. The reason for ascertaining the existence of REMP is to determine its viability as a sustainable strategy of capacity development of human resource to improve research output. The literature reviewed indicates that while mentorship is popular in many fields (for e.g. education, health and law) there is insufficient data to benchmark its success as many organisations are either planning to embark on or have recently commenced such programmes or existing programmes are not formally evaluated. According to Foster (2001:11) most mentoring programmes are not formally evaluated but rely heavily on anecdotal information and participant reports to determine the effectiveness of the programme. Also, there is a scarcity of data specifically regarding mentorship programmes for researchers with the aim of improving research output.

The objective of this chapter is to provide an overview of the relevant literature on research and development in an attempt to create a framework for a REMP for researchers as a sustainable strategy of research capacity development and the aim of improving research output at HE institutions.

The chapter begins with defining research and its purpose together with research output and its importance. It will further examine the possible causes for low research output and the interventions implemented by government and HE institutions to improve research productivity. Mentoring programmes at various organisations will also be highlighted. An examination of the various aspects of mentorship for e.g. its advantages and disadvantages to all participants concerned concludes this chapter.

## **2.2 Defining research and its purpose**

The word 'research' means "the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions" (The Concise Oxford Dictionary, 2001:1217).

Health 24 (2008:1) defines research as a certain way of thinking whereby it involves the way in which a problem can be investigated in a systematic and goal-orientated way to increase the sum of human knowledge that is subsequently used to devise new applications. Kayrooz & Trevitt (2005:4) concur with Health on their definition stating that research is a process of systematically collecting and analysing valid and reliable information in a given context. Similarly, Court, Hovland & Young (2005:6) consider research to be 'any systematic effort to increase the stock of knowledge.' This includes any systematic process of critical investigation and evaluation, theory building, data collection, analysis and codification related to development policy and practice.

Taflinger (1996:1) describes research as finding out what you do not already know and emphasises two basic purposes for research i.e. to learn something or to gather evidence. He elaborates that what one learns is the source of the background information used to communicate with others. Writing or speaking formally is sharing what one has learnt with others backed with evidence to show correctness. If, however, one has not learnt more than what the audience already knows, there is nothing to share. Thus, you engage in the research. The Central Bucks School District (2008:1) is of the opinion that research is a real life situation, the process of locating and evaluating information and is of the opinion that these (research) skills help to better the thinking skills and the clear expression of thoughts leads to better writing skills.

Cano (2008:1) states that the functions of research are to either create or test a theory. It is an instrument used to test whether a theory is good or not. It is a method by which data is gathered to generate or test a theory. Similarly, Kidd (1992:27) is also of the view that research is usually considered to be a studious inquiry or examination, especially investigation or experimentation aimed at the discovery and interpretation of facts or the revision of accepted theories or laws in the light of new facts.

The purpose of research can range from formulating a problem to planning for the future and monitoring progress on, or evaluating an intervention (Kayrooz & Trevitt, 2005:104). One of the purposes of research is to provide new knowledge. Wenger (1998:4 as quoted by Christiansen & Slammert (2005:1050)) defines knowledge as 'a matter of competence with respect to valued enterprises'. This implies that knowledge is relative to the particular enterprise, though always depending on broader constellations surrounding this.

In South Africa research is essential in giving shape to critical outcomes. At the broadest level these include the urgency of the need to combat poverty, create jobs, promote equity, and be globally competitive and driven by critical values (Higher Education South Africa (HESA), 2006:4). In the arena of health care the National Institute of Mental Health regards the role of research as providing support to research into the causes, diagnosis, prevention and treatment of anxiety disorders and other mental illness (National Institute of Mental Health, 2008:1).

According to Christiansen & Slammert (2005:1047-8) research serves to question and challenge existing solutions, perspectives, habits and politics. Research plays a part in developing society socially, culturally, psychologically, educationally, physically and politically.

Regarding the purpose of research in the case of HE institutions, the core function of higher education is highlighted in the Education White Paper 3, i.e. for the production, advancement and dissemination of knowledge and the development of high-level human resources. It is emphasised that research plays a key role in both these functions (Department of Education, 1997a:2.82). The White Paper further reiterates that research is the principal tool for creating new knowledge, which is disseminated through teaching and collaboration in research and is also the principal tool for developing academic and research staff through postgraduate study and training

In terms of the draft National Plan for Higher Education in South Africa, it is argued that the value of and importance of research cannot be over-emphasised. Research engenders the values of inquiry, critical thinking, creativity and open-mindedness, which are fundamental in building a strong, democratic ethos in society (Ministry of Education, 2001:61). It further states that it also creates communities of scholars who build

collegiality and networks across geographic and disciplinary boundaries. It also makes it possible for growth of an innovative culture and contributes to the global accumulation of knowledge and places our nation amongst those nations who have active programmes of knowledge generation.

On the other hand O'Brien (2008:1) is of the opinion that most people would accept that research is an essential component for a well-rounded academic culture in any HE institution as it contributes extensively to knowledge bases and is good for the individual researcher's profile, work satisfaction and career development. He further adds that it should also be good for the employing institution's profile and contributes, either directly or indirectly, to its income generation. However, he has expressed concern in the role of research in enhancing our own ability to teach our own students. This concern is supported by Potter (2008:1) who states that although the purpose of research is to create new knowledge and thereby contribute to higher learning, the research enterprise often is vulnerable to the criticism that "we are talking to ourselves, sharing our new learning with a small group of specialists who already know most of what we have to say." He further poses the question of how this new knowledge should be made more accessible to others and how teaching and learning can be applied to audiences in broader society. He follows this question with a suggestion that research can contribute directly to learning by engaging in a new form of scholarship, marshalling what is known about learning as a process and applying it to the education of students.

An overview on the different roles of research indicates the primary purpose of research is to acquire a knowledge base. For the purpose of this study, research is viewed as a vital means of training academics to become publishers of acquired knowledge in order to gain recognition.

### **2.3 Defining research output and its importance**

In South Africa, research output is defined as textual output where research is understood as an original, systematic investigation undertaken in order to gain new knowledge and understanding (Department of Education, 1997b:1). The DoE recognises publications of articles in accredited journals, peer-reviewed books and book chapters and conference proceedings for subsidy purposes.

Van Raan (2005:5 as quoted by Madue (2006:34-35)) defines research output as the number of articles of the institute as far as covered by the CI indexes. He considers the following publication types as articles:

- normal articles (including conference proceedings and articles published in journals)
- letters and
- notes and reviews (this excludes meeting abstracts, obituaries, editorials, etc.).

His definition of research output does not include books, chapters in books, patents and artefacts. Research output is reflected in Figure 1.

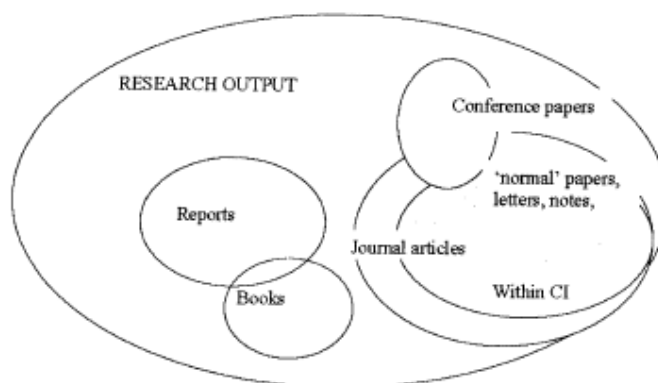


Figure: 2.1. Types of research output

**Figure 1 – Types of research output**

The Academy of Science of South Africa (ASSAF) cites research publications as highly significant outputs of research activity, together with dissertations (a proxy for the number of newly qualified researchers), patents, technical reports and applications in society (Academy of Science of South Africa, 2006:xxvi).

With globalisation on the increase, it is not only affecting the shape and mode of operation of HE institutions but also their purpose. HE institutions in South Africa are no exception to this challenge as they too are now under pressure to meet global standards in order to be able to compete with the best in the world. Alt (2002:9) adds that increasing globalisation of higher education and the consequent extension of 'competition' beyond regional and national boundaries will make it inevitable for HE institutions in South Africa to look at practice in other countries to inform their decisions i.e. institutions will have to benchmark. Benchmarking is regarded as a reference or

criterion against which something can be measured (Jackson 1998:3 as quoted by Alt (2002:10)). This is further supported by van Jaarsveld (as quoted by the NRF (2007c:4)) stating that “to measure oneself against the best in the world is the only benchmark for a science system that aspires to become globally competitive.”

Academic publications are recognised as a benchmark for research quality (Gevers 2006 as quoted by Lategan & Dessels (2007:59)). Jeenah & Pouris (2008:1) agree by stating that the quality and quantity of research publications are used as benchmarks to monitor performance of South Africa’s national system of innovation. Although not official, many HE institutions use their publication output as a measurement tool to assess their research productivity. For example, the University of Cape Town’s (2007:21) benchmarking practice is informed by internationally accepted indicators such as the number and quality of peer-reviewed journal articles and books in conjunction with other factors such as the success rate and quality of postgraduate students. The importance of research output is emphasised by Waghid & le Grange (2003:6) who point out that if South African higher education is going to make any significant contribution to research and development on the African continent, then it has to produce scholars whose work merits is recognised by their peers i.e. researchers need to produce work of high quality such as published academic articles in prestigious journals, highly acclaimed books and presentation of papers at international conferences.

ASSAF advocates that “research publishing plays a key role in training by furnishing the most rigorous tests of resolve and originality. It also connects the people carrying the science system of a country with the best of their international counterparts and helps to establish a country’s reputation to attract investment and foreign support.” ASSAF further purports that the ability of scholarly and scientific journals to reach their target audience and to become internationally visible, to a large extent determines their long-term significance throughout the world (Academy of Science of South Africa, 2006:vii-9).

Prior to 2001, both universities and technikons (technikons, now referred to as Universities of Technologies (UoTs)) were funded using the old SAPSE formula that was based on the head count of enrolled students. In 1998 the formula was refined and was computed on 50% Full Time Equivalent (FTE) enrolment and 50% FTE pass norms. In 2001, the proposed new funding framework for public higher education

advocated one set of funding policies and mechanisms for the higher education system i.e. universities and universities of technologies. The funding allocation is based on three windows, one of which is Research and Development. The funding for this category is of paramount concern. Earlier subsidies made to tertiary institutions for 'blind research funding' has fallen away as it is now output driven (Jinabhai, 2003:54-56). Therefore, academic publications in the form of articles in high impact journals to books and book chapters and publication of doctoral theses are highly significant outputs of research activity as it not only reveals new knowledge but it also influences funding for higher education in South Africa.

Apart from influencing subsidy funding by the DoE, publications are also used as criteria by the NRF to evaluate and rate researchers. NRF evaluation and rating is a benchmarking system dependent on expert reviewers who base their opinions on the quality and impact of each applicant's research output and achievements (NRF, 2007c:16). According to Pouris (undated:1) an analysis on the NRF's rating and evaluating system on the research publications of social sciences researchers in South Africa indicates a positive impact. The NRF was also in the process of refining a new Multi-Criteria Decision Making tool that will link rating to funding with the proposed implementation date being 2009 (NRF, 2007c:16-25). However, Chetty (2003:13) is of the opinion that funding agencies need to rethink the way they evaluate research output and rating. For example, researchers in the humanities are being rated in a manner similar to the way in which researchers in the natural sciences are rated. He suggests that the rating of researchers should take into account their contribution to understanding local problems, their innovative teaching strategies, novel approaches to contributing knowledge in their discipline and not just a quantitative analysis of conference proceedings and accredited publications. Pouris'(2007:5) investigation into why scientists let their rating lapse showed that according to some respondents the NRF's rating system is compromised when a rated researcher is supported financially to a limited extent or not at all while unrated researchers are generously supported. However, recent information on the Multi-Criteria Decision Making project revealed that this project is still on hold and has not been introduced to the HE institutions (van der Walt, 2010a:1).

The next section discusses the reasons for low research output at HE institutions.

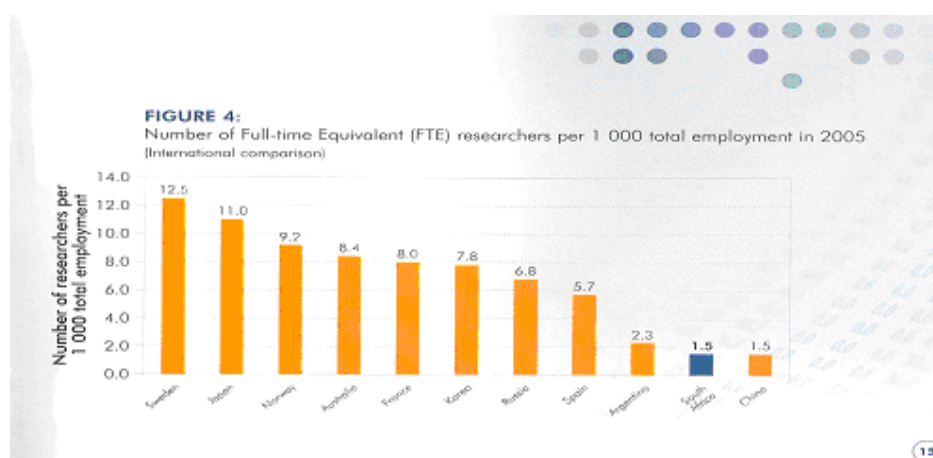


## **2.4 Reasons for low research output**

Despite the strong emphasis placed on the need to develop research capacity and output in the White Paper, the current capacity, distribution and outcomes of the higher education research system remains a cause for concern (Ministry of Education, 2001:61). Although there is an increase in research output in South Africa, global standards have not been met. This was re-affirmed by Pandor (2007:3-4) in her speech stating that while there was an increase in publications over the past three years, the level of productivity per academic staff member is still below benchmark. A lot remains to be done and that the encouragement of local publications is one way to improve the international ranking of our universities. However, delegates to the Southern African Research and Innovation Management Association (SARIMA) conference held in June 2008 decried the criteria used for ranking universities. Budanani Tacheba of Botswana's Department of Research, Science and Technology stated that universities of poor countries lack strong funding and human resource bases for research programmes and are therefore unable to compete with their counterparts in rich nations (Research Africa, 2008a:5).

According to Gevers (2006:xiii) South Africa occupies the paradoxical position in the arena of research publishing of being a dwarf internationally and a giant on the African continent. There are 16 000 researchers publishing about 7 000 papers a year or on average about 0.4 papers per researcher per year. In comparison to other countries, the output of academic research in Africa remains weak. In 1995, Africa was responsible for just 5 839 published academic papers while regions like South Asia had 15 995 publications and Latin America and the Caribbean had 14 426 publications (Bloom, Canning & Chan, 2005:6). Jeenah & Pouris (2008:5) iterate that South Africa compares unfavourably with two countries from the group of developing nations that are considered innovative i.e. India and Brazil, and is of the opinion that the high volumes of publications by these countries can be partially attributed to them having more researchers and spending more money on research and development than South Africa. Although South Africa is the dominant producer of research publications on the African continent, it is outranked by Egypt in chemistry, engineering and materials science and Nigeria in agricultural science. Compared to Kenya, a much smaller country with fewer resources, South Africa is outranked in 14 disciplines in terms of discipline-specific citations (Jeenah & Pouris, 2008:6).

As illustrated in Figure 2, the 2005/6 survey indicates that South Africa has 1.5 FTE (Full-time equivalent) researchers per 1 000 total employment, marginally down from the 1.6 FTE researchers for 2004. In comparison to other countries like Sweden (12.5), Japan (11.0), Norway (9.2), Australia (8.4), France (8.0), Korea (7.8), Russia (6.8), Spain (5.7) and Argentina (2.3) which showed an increase in FTE researchers per 1 000 employment. The indicator for South Africa of human resource potential for research is relatively low and needs to be monitored as the research capacity of a country significantly influences its research and development output potential (Department of Science and Technology, 2007:14).



**Figure 2 – Number of FTE researchers per 1 000 total employment** (Department of Science and Technology, 2007:15).

The latest 2006/7 survey results indicate that the statistic of 1.5 FTE per 1 000 total employment in South Africa is stagnant i.e. the statistics are the same as reflected in the 2005/6 survey report indicated in Figure 2. This is a cause for concern as this indicator of human resource potential for research is relatively low compared to other countries (Department of Science and Technology, 2008:14).

South Africa, although in the top 500 of world university rankings by Shanghai Jiao Tong, is unable to compete against the best across all fields. The 23 universities in South Africa, although often large in terms of student numbers, are very small in terms of research capacity, making it difficult to compete with the best universities in the world, which have competitive resources (MacGregor, 2008d:1).

## **2.5 Factors hindering the progress towards global standards**

The literature reviewed has highlighted below some of the hindering factors contributing to South Africa's slow progress in meeting global standards:

- one of the major concerns is that South Africa is experiencing an ageing and shrinking scientific population and that the human resource is not being adequately developed and renewed. Currently, there is less than one researcher for every thousand members of the workforce as compared with 8.4 in Australia and 11 in Japan. The key indicators show that black and women scientists, technologists and engineers are not entering the academic ranks and that the key research infrastructure is composed of people who will soon retire. In 1990, the percentage of scientific publications produced by researchers 50 years of age and older was 18% (one in five) but by 1998 this figure increased alarmingly to 45% (one in two). Over the same period the percentage of publications by black scientists rose only very slightly from 3.5% to 8% (less than one in ten). Participation by women has not changed over the 1990s with publications output being about 10% (Department of Science and Technology, 2002:21).
- migration of scientists could also be another attributing factor to slow progress of research. This is attested in a report released by the United Kingdom parliamentary office of science and technology on global migration of scientists focusing on how this affects the developing world. The report cites that in Africa, causes of migration include the weakness of HE institutions as well as political and economic instability. Scientists leave their home countries because of low wages, limited career choices and lack of funding, poor infrastructure and political instability (Research Africa, 2008b:5);
- another concern is the effects of the re-landscaping of the higher education sector where educational reform is viewed as complex, non-linear, frequently arbitrary and always highly political. It is also rife with unpredictable shifts and fragmented initiatives (Fullan 1992:2 as quoted by the NRF (2007b:1));
- In terms of the Higher Education Act No. 101 of 1997 the Minister of Education restructured the higher education system that resulted in the merger of HE

institutions. Asmal (as quoted by South Africa Info (2003:1)) stated that tertiary institutions were to be downsized from 36 to 23 through institutional mergers, comprising of 11 universities, 6 technikons and 6 comprehensive institutions (offering both university and technikon programmes). The uncertainties after the mergers and the changing climate under which HE institutions must operate affected the very essence of what a university education stands for in the post-apartheid democracy (Ramrathan, 2007).

The Chair of HESA and North West University Vice-Chancellor, Theuns Eloff (as quoted by FINWEEK (2008:18)) adds that “uncertainty (about jobs) is the biggest enemy in ‘merger’ and affects staff morale and productivity.” In hindsight, the African National Congress is now planning a review of HE institutions formed as a result of mergers. Some mergers could be reversed while others could be in for management and operational overhauls. New institutions could also be planned to meet demands. The review will assess the entire education system with a view to making it contribute more to economic growth and poverty alleviation (FINWEEK, 2008:17).

Until the African National Congress’s plan on reviewing the merger materialises, the current impacts and challenges of mergers cannot be ignored. A greater challenge is that for comprehensive institutions. There are two levels of research culture, one (Universities) being an academic institution involved in pure research since inception while the other (ex-technikons) focused on vocationally-oriented teaching and was only introduced to degree-awarding status in 1993 in terms of the Technikon Act of 1993. Academics in ex-technikons who focused mainly on teaching had to include a research portfolio which they had very little or no knowledge of or training for and are also required to publish outputs (Ramrathan, 2007).

- another negative effect of the merger relates to a decline in the status of professoriate and volume and quality of research output. Many institutions now have to deal with the pressure of employment equity and the need to advance black scholars within the institutions rather than lose them to the lucrative public and private sectors. The instrument of choice under these circumstances has been to give away professorial status. However, there is a problem with

professorial status being awarded to young black academics without any record of scholarship, research and without any credibility in the competitive world or research journals and conferences. The destructive effects are that these young academics now have no motivation to develop the kind of scholarship profile needed. They assume responsibility for supervising post-graduate students without intellectual depth to build a strong cadre of new students. Ultimately, this affects the production of possible good researchers who could contribute to the research output in the form of publications (Jansen, 2003:9);

- the decline in volume and quality of research output could be attributed to the fact that the strategy for capacity building was flawed by making limited short-term investments in a large number of people as well as it was assumed that the institutional conditions were such as to nurture, support and promote these trainee scholars. It simply did not happen (Jansen, 2003:10);
- another contributing factor to low research output is a decline in research and development in the private sector. Global statistics show that the real determinant of technology-driven economic development is a sustained high level of research and innovation by the indigenous private sector, by firms of all sizes. However, in South Africa research and development undertaken by large South African companies has shown a significant measurable decline (Department of Science and Technology, 2002:21);
- low research output is attributed to a decline in spending on research and development by government. For example, according to Habib & Morrow (2007:114) the academic, scholarly and applied social research is in crisis in South Africa due to a decline in spending on research and development from 1.1% of Gross Domestic Product in 1990 to 0.7% in 1994 as indicated in the Department of Science and Technology's National Research and Development Strategy.

In comparison, the Organisation for Economic Co-operation and Development's (OECD) country expenditure is 2.15%. For example, Finland with an economy the same size of South Africa spends 3.5% on research and development. South Africa's share of the global research output has been declining for over a

decade from 0.8% in 1990 to 0.5% by 2001. Independent assessments of South Africa's public research sector publications suggest that scientific output has been stagnating for the last decade and a half. Evidence of investing in research globally can be positive as can be confirmed in the case of universities in China where the research budget was increased twenty-fold. This resulted in an impressive increase in the nation's research output where in the case of one institution it had one International Science Index publication and no patents in 1994. By 2007 it boasted 2 000 International Science Index publications and 549 patent applications. Hence, boosting research output and innovation requires significant increase in research expenditure and the creation of an enabling research environment within universities (Habib, 2008b:1);

- the performance of human resources in research productivity is also influenced by the working conditions. For most university academics working conditions have deteriorated. Habib & Morrow (2007:113) state that some of the related barriers to research productivity in South Africa are:
  - > inadequate academic remuneration and onerous working conditions;
  - > the tension that seems to have emerged between advancing equity and realising academic excellence;
  - > obstacles that undermine institutional collaboration within the higher education and science council sectors and
  - > the poor quality of senior managers in the knowledge system.

However, in comparison to Ghana, Malawi and Uganda, South African academics together with those in Botswana and Lesotho work under better conditions than their colleagues elsewhere on the continent. Although working conditions influence research productivity, it need not necessarily be the primary factor. For example, despite poorer working conditions, research productivity in Nigeria and Ghana is higher than in most Southern African countries (Naidoo & Savage, 1998:192). Research culture, need for experience among academics, publishing outlets and professional associations also influences research productivity. Poor working conditions for e.g. dealing with crowded classrooms and budget cuts at Universities in Florida has also impacted negatively by threatening research programmes and loss of top researchers. Some

researchers and professors were lured by offers of more research dollars, bigger salaries and better resources by other universities (Miller, 2008:1-2). This situation is no different at UJ. Although there is no data available to provide confirmed statistics, the researcher has observed that many academics with expertise leave the academic environment for industry because of higher salary;

- a shift in research focus towards strategic and applied research emphasising socio-economic and industry-related issues and a concomitant decline in basic research is also a likely explanation. Data from the South African Knowledge base indicates a shift towards more health and applied natural science research and a shift from general humanities research to more applied social science research. This shift has been influenced by the increased availability of resources for contract research both from government and the private sector. However, this research is often not published in accredited journals or in other formally recognised output measures (Ministry of Education, 2001:61). The shift in research focus can be attested by Pouris' research (as quoted by MacGregor (2008d:2)) that has led him to conclude that South Africa was not effectively supporting fields of research in which it excels because the government is not sufficiently focused on areas of established excellence, is not 'pumping' enough money into university-based research and is not properly implementing research priorities that it identifies;
- alarming high university student drop out rates is a threat to South Africa's future and it also has an impact on the graduate throughput (i.e. the number of students that graduate which is shown as a percentage of the number of students in the programme) of possible researchers. According to MacGregor (2008c:1) there is a shocking 40% of South African students who drop out of university in their first year, especially among the country's large pool of poor black students. According to Letseka (2008:3) South Africa's university graduation of 15% is one of the lowest in the world. A HSRC study led by Letseka shows that higher education also reflects broader inequalities with the graduation rate for white students more than double than that of black students. According to the NRF (2008:4) only one PhD is produced out of 528 under-graduates enrolled and

- another concern as expressed by Mangena (2008:1) is that the number of school-leavers, who have science as a grade 12 subject, remains low. The concern is that if these young minds are lost, the National System of Innovation will be rendered completely ineffectual and the infrastructure, environment and economy will suffer. He also emphasised that skills development in the fields of science and technology remained a key challenge for the country's science system.

Whatever the reasons for low research output are for e.g. the lack of adequate funding and competitive resources; ageing and shrinking scientist population mainly white males; lack of black and women scientists, technologists and engineers entering the academic ranks; migration of scientists due to political instability and the effects of re-landscaping of higher education institutions; employment equity and granting of professorial status without record of scholarship; decline in spending in research and a shift in research focus, the need to assess the ability and role of government and HE institutions to meet the research and development agenda of the country is critical.

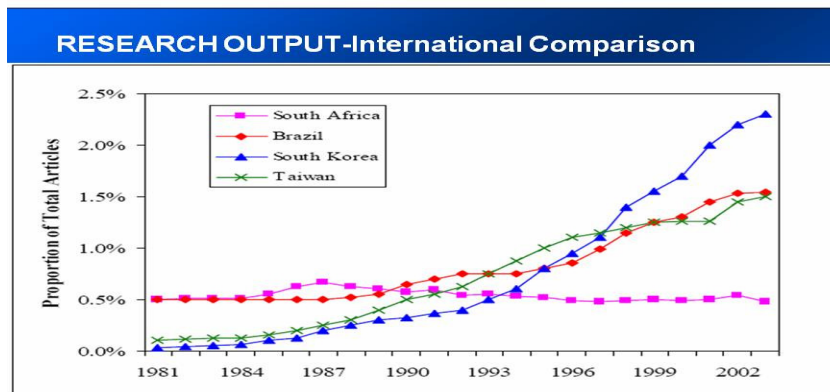
The role of government in promoting research is explored in the section below.

## **2.6 Role of government in promoting research**

Government's concern about the evidence of low research output in South Africa has prompted them to implement interventions with the view to meeting national research goals. It should be noted that the Government deals with an infinite number of tasks related to their citizens and generally researchers would not be aware of the full extent and complexity of government's work. What is more often declared, is policy announcement, legislation and its implementation (Desai & Potter, 2006:88).

With South Africa conducting around 0.5% as illustrated in Figure 3 (NRF, 2008:6) of the world's scientific research, the government has brought into place many policies and strategies to address the promotion of research.





**Figure 3 – Research output – international comparison** (NRF, 2008:6)

The White Paper on Science and Technology by the Department of Science and Technology (DST), as well as a National Research and Development Strategy, created the basis for a National System of Innovation to promote synergy and encourage research in line with national priorities. In the White Paper on Science and Technology (Department of Arts, Culture, Science and Technology, 1996:Chapter 3(2)) the government's view is that innovation is an encompassing notion based on continuous production of new knowledge and its creative applications. This viewpoint holds that the promotion of research, both applied and basic, in the natural and social sciences is crucial to innovation and hence to both social and economic development.

Government has recommitted itself to the Research and Development Strategy of 1% gross domestic product to be invested by both public and private sectors by 2008. Mangena (2008:1) mentions that South Africa is well on track to reach its research and development spending of 1% of gross domestic product by the end of 2008 as the intensity of research and development is currently at 0.9%. The department continues to develop strategies in new areas of knowledge and technology. Strategies for indigenous knowledge, nano-technology, astronomy and intellectual property derived from publicly funded research have been developed.

Another intervention was the establishment of the NRF in 1999 as a result of the National Research Foundation Act, No 23 of 1998. As an independent government agency, the role of the NRF is to promote and support research through funding, human resource development and the provision of the necessary facilities in order to facilitate

the creation of knowledge, innovation and development, in all fields of the sciences and technology, including indigenous knowledge and thereby to contribute to the improvement of the quality of life of all the people of the Republic (NRF, 2007a:7). Their mission is to contribute to the knowledge economy of South Africa by attaining at least 2% of global research and development output by 2015 (NRF, 2007a:11).

The DST also supports innovation via the Technology for Human Resource for Industry Programme (THRIP) with the aim to increase participation by small, micro and medium enterprises, black economic empowerment entities, black and women researchers and students. The innovation fund was created to promote technological innovation, increase networking and cross-sectoral collaboration. The RCD programme seeks to boost historically black universities by supporting individual researchers and encouraging a postdoctoral research culture.

There are national research facilities managed by the NRF responsible for promoting and supporting basic and applied research. Science Councils like the Council for Scientific and Industrial Research, Mintek, Human Science Research Council (HSRC), Medical Research Council, Agricultural Research Council, Council of Geo-science, South African Bureau of Standards, together with other research bodies such as The South African National Antarctic Programme, Mine Safety Research, Energy Research, Agricultural Research, Water Research, Coastal and Marine Research and Environmental Research, all make their relevant contribution towards the development and promotion of research in South Africa (Department of Science and Technology, 2005:165-174).

The DST has also signed many bilateral intergovernmental agreements in the fields of Science & Technology to promote research through collaborative projects. An agreement was also signed with the EU to facilitate South Africa's participation in their framework and it was further elaborated that in the nature of global research, South African scientists will more likely remain in the country if they can easily connect with their peers and be linked to the most excellent global research nodes (Department of Science and Technology, 2002:35). Countries where there are agreements being implemented include Argentina, China, Cuba, Czech Republic, Flanders, France, Germany, Hungary, India, India-Brazil, Indonesia, Italy, Japan, Mozambique, Netherlands, Norway, Poland, Romania, Russia, SADC, Slovakia, Spain, Sweden,

Switzerland, United Kingdom and the United States of America (Seymour, 2010:1).

The DST is also working towards the creation and establishment of the Technology Innovation Agency (a public funding agency) to bridge the innovation gap between the local knowledge base and the productive economy (Mangena, 2008:1). South Africa is also currently working toward winning the bid to host the Square Kilometre Array (SKA). It will be of benefit to Southern Africa through a major boost in radio astronomy research, more student training and infrastructure. The SKA will be a mega radio telescope. The previous South African President, Thabo Mbeki had passed the Astronomy Geographic Advantage Bill, strengthening the country's bid to host the SKA. This legislation would help protect astronomy facilities as the requirement of the bid is that the area with the SKA has to have minimum radio interference (Research Africa, 2008b:6).

According to Habib & Morrow (2007:115-116) government recognised that South Africa's share of global research output has steadily declined over the last fifteen years and was increasingly worried about the implications for economic development, political democracy and higher education. This crisis galvanised government into action to revitalise research in South Africa. One such initiative was the Human Resources for Knowledge Production in South Africa conference in June 2005, organised for the DST by the Africa Institute and the HSRC whereby the plan of action advocated:

- recruitment and retention of high-level scientific and technological personnel, promotion of partnerships between universities, research councils and industry;
- careful attention to the support of advanced study, to its form and content and appropriate incentives;
- linking research agenda to national priorities and allocating funds accordingly;
- increasing national investment in research in ways that also leverage quality overseas and domestic involvement and
- engaging with scientific globalisation so that South Africa becomes a hub in appropriate research areas and attracts talented researchers.

The South African government can seek guidelines from international practices. With the globalisation of the market economy on the increase, changes in national research policies can be expected. For example, countries such as Australia, Canada, the

United States and the United Kingdom have developed national policies to promote targeted or commercial research rather than pure curiosity-driven research (Slaughter & Leslie 1997 as quoted by Kivinen & Kaipainen (2002:63)). In Finland the government whose goal was to increase the research and development input to 2.9% of the gross national product, allocated funds gained from privatisation of state-owned companies to supplement funding for science and technology. In 1999 their goal was exceeded as the research and development input was already 3.1% of the gross national product. Funding allocated to basic research has been negative (0.01%), while funds for applied research have increased significantly (20.8%) (Kolu 1999 as quoted by Kivinen & Kaipainen (2002:63)). However, Brend Huber an economist and the new chairman of the League of European Research Universities, also the new champion for basic academic research, challenge this. He said that “politicians had placed too much emphasis on applied research, reflected for instance in the controversial establishment of the European Institute of Innovation and Technology”. He is of the view that basic research has both direct and indirect economic effects that are very important for the future of society and he strongly believes that funding basic research is “exactly the kind of research support that is a role model for the future” (Nuthall, 2008:1).

The European University Association advocates that while universities need to be encouraged to develop in different forms and to generate funds from a variety of sources, government must empower institutions to strengthen their essential autonomy. This can be achieved by providing stable legal and funding environments thus ensuring that universities have the capability to manage themselves in a dynamic way and the freedom to seize opportunities that are offered to them (European University Association, 2004:V(15)).

However, a preliminary finding in an international comparative study of research policy influence on the basic units of knowledge production in biotechnology and history at public research universities show that reforms inspired by new public management do influence researchers in biotechnology and medieval studies in the area of problem choice in research, research output, types of research and division between teaching and research (Leisyte, 2006:2-9).

Government may declare policies and pass legislation to promote research and development however, the success of these policies and legislation will depend on its

implementation. Hence, agencies are needed for such implementation to assist government in realising its goals. The HE institutions are one such agency that can assist government to achieve this and its role is examined below.

The next section therefore examines the role of HE institutions.

## **2.7 Role of higher education institutions in promoting research**

With government revising old or implementing new policies regarding research and development, HE institutions are under pressure to help government realise its goals.

National growth and competitiveness is dependent on continuous improvement and innovation. Therefore, well-trained research and development human capital is required. From evidence of South Africa's researchers being mainly white, male and ageing, the matter of renewing human resource in research needs urgent attention or it will result in a decline in South Africa's research profile and structure in the coming years.

HE institutions are seen as the source for providing knowledgeable and skilled human resource. According to the Annual Report (Council on Higher Education (CHE) 2003/2004, 2004a:1) high quality higher education has a crucial contribution to make to social equity, economic and social development. Without higher education producing knowledgeable, competent and skilled graduates, research and knowledge and undertaking responsive knowledge-based community service and equity, democracy and development will be constrained.

The importance of HE institutions is further supported in a report for HESA (2007:1-2) which indicates that the role of higher education has been well documented in many parts of the world and the importance of HE and research was recognised by the South African government in its new macroeconomic strategy. Examples of the possible impact that it might have on the economy are:

- providing skilled workers to the economy and
- generating and supporting scientific communities that enable innovation and industrial diversification and therefore economic growth and development.

According to Lillejord (2005:1317) universities have for a long time maintained monopoly on the academic forms of knowledge. In the middle ages, universities produced master and doctoral candidates for the church and the civil administration and bureaucracy. However, later development of universities related to social, political and economic changes. These changes are similarly supported by Higgs (2002:11) who on the continuous debate on the place of South African universities in a democratic, non-racist and non-sexist society, highlights that it has become evident that the dominant issue governing many proposals for university transformation is social transformation i.e. the principal task of a university is seen as contributing to the establishment of a democratic society, serving the needs of the state and the economy. In other words, the role of the university is determined by the requirements implicit in the provision of high-level manpower and the objectives of its teaching and research programmes are directed at vocational needs, the establishment of a just South African society and the creation of wealth.

In many countries, HE institutions are or aspire to be focused on academic research with little practical orientation. Institutions with practical orientation often become more academic while teaching-focused institutions become more research oriented. In some universities relevance plays an integral part of their mission, even as they aspire to be at the cutting edge of research. For example, the Massachusetts Institute of Technology encourages research focused on areas with a significant expected impact while in contrast to senior academics in other countries like the United Kingdom their performance is evaluated according to their scientific publications (Hatakenaka, 2008:1). In Europe, due to growing competition, universities need a diverse spectrum of research institutions, all of which are based on the link between teaching and research and fulfilling key research training and knowledge transfer functions (European University Association, 2004:IV(9)).

The role of higher education, previously dominated by teaching, is also making way for community engagement, meeting global standards and accountability. This is re-affirmed by Auf der Heyde (as quoted by MacGregor (2008a:1-2)) stating that there are at least three ways in which universities give expression to their 'public role':

- one of which is being the driver of community engagement:
- another is accountability to their government and community and the

- third is innovative response to globalisation and underpinning the ‘knowledge economy’.

Auf der Heyde (as quoted by MacGregor (2008b:1)) also states that South African universities are still grappling conceptually with community engagement and greater understanding of its rationale is needed. However these concepts are not only restricted to South Africa. According to Mohamed (2005:1) throughout the world, HE institutions are facing the challenge of engaging more closely with surrounding communities, developing an intellectual foundation for such engagement and integrating the key aspects of the university’s mission: teaching, research and service. According to MacGregor (2008b:1) the Higher Education Quality Committee (HEQC) of the CHE defines community engagement as “initiatives and processes through which the expertise of HE institutions in areas of teaching and research are applied to address issues relevant to its community.”

Around the world, community engagement is widely accepted as one of the core functions of public universities along with teaching and learning whereby most institutions regard it as a moral rather than a strategic imperative, with few institutional returns. With tides turning in favour of community engagement, the central role of universities in the ‘knowledge economy’ and trends in knowledge production, are obliging universities to develop more systematic approaches to community engagement (University World News, 2008b:1). This demand is no exception to HE institutions in South Africa who are now also challenged with the responsibility of community engagement. In recent years, several HE institutions have developed institutional policies, guidelines and strategies for community engagement. For example, universities in South Africa have a tradition of progressive interaction with communities and Non-Governmental Organisations positioned between community needs and intellectual and technical resources. Some institutions such as Free State and Rhodes universities are institutionalising the management of engagement. At UJ, community engagement in the form of service learning and community-based research is a core academic function of the university. The goals are needs-based services to the community, student and staff experiential learning, the enhancement of existing knowledge, the creation of new knowledge and the sharing of such knowledge (University of Johannesburg, 2009:4).

Internationally, in America, Campus Compact represents six million students dedicated to furthering the public purposes of higher education; social service placement for graduates in Scotland; storefront classes in Canada; and student volunteers in African schools are some of the numerous university programmes moving community engagement out of the closet and into the mainstream of higher education alongside teaching and research (MacGregor, 2008a:1-2).

Research therefore has a role to play in the context of community engagement.

However, according to Pandor (2008:1) in 1997 Lord Dearing reviewed the higher education system in the United Kingdom and suggested that universities not only 'do' teaching, research and community engagement but should also have a social goal.

Although South African education policies place priority on addressing historical education imbalances, they should also be sensitive to the demands of an ever-increasing global knowledge-driven environment. The educational system cannot be dominated by the needs of the domestic educational system of South Africa, ignoring the trends exerted by the global world (OECD Annual Report 2004:44 as quoted by Steynberg, Grundling, de Jager & Ekulugo (2005:1267)).

Globalisation is an all-embracing process in which the spread of language, culture, ideas and knowledge play a significant role. Although the concept of globalisation is embedded in the economic field, it is not foreign to education in view of the fact that economic growth leans heavily on current research trends. According to van Niekerk & Venter (2002:102) globalisation has influenced higher education in more than one way, for instance, the relationship between government and individual institutions is tighter and more hierarchic. HE institutions are bound to centrally determined policy and funding guidelines by a variety of accountable mechanisms while at the same time being given autonomy to determine own priorities and raise money. Universities must now raise an increasing proportion of their own funding, seeking a competitive edge from wherever they can find it.

In HE institutions academics have always been warned that they must 'publish or perish' (Gawe & de Kock, 2002:37-39). Chetty (2003:13) argues that the demand for publications and the tension to publish for the sake of survival in academia has had



negative consequences as there is a strong focus on the publication of research rather than its impact. It encourages the view that: “the more publications produced the better, the more words written the better, the more times a paper is cited, is better, single authorship is preferable to multiple scholarship and academic journals read by researchers are more valued than professional journals” (Bassey 1995:128 as quoted by Chetty (2003:13)).

Hence, the challenge for HE institutions in South Africa is how they will cope with the tension between the universal claims of global science on the one hand, and on the other, the equally compelling claims to recover the African past (Scott 1997:18 as quoted by le Grange (2002:67)). This necessitates a discussion on capacity development, which is outlined below.

## **2.8 Capacity development in higher education and research**

Capacity development holds different meanings for different people. Boyd & Fresen (undated:12) define capacity development as “enhancing skills to achieve specific results.” They are of the opinion that the type of capacity building should be very simple, non-threatening and supportive of initiatives focusing on how to improve ‘the way one does things’.

Developing countries face significant new challenges in the global environment, affecting not only the shape and mode of operation but also the purpose of their HE education system. HE institutions are called upon to play a vital capacity building role in support of economic growth and poverty reduction (Salmi, 2006:1-6).

This can be attested by a World Bank long-term perspective study on Sub-Saharan Africa that highlighted the need to build human and institutional capacity in virtually all sectors and countries. The need is exacerbated by the rapid rate of change in technology that increases the challenge of acquiring the knowledge and skills that enhance ability and capacity to adapt to change (Senge 1990; Barth & Bartenstein 1998; Davenport, De Long & Beers 1998; Senge, Kleiner, Roberts, Ross & Smith 1999 as quoted by Breen, Jaganyi, van Wilgen & van Wyk (2004:429)). In South Africa, the establishment of a democratic government in 1994 saw increased emphasis placed on capacity building. This led to the revision of policies and legislation directing human

resources development (Breen, *et. al.*, 2004:429).

The building of research capacity and infrastructure is cumulative and occurs in a long time frame. It is dependent not only on the availability of resources but also more critically on the development of an academic environment and culture that is conducive to and actively promotes research (Ministry of Education, 2001:62). According to Kongolo (2008:1) capacity development is informed by national and international priorities, needs and other inputs including the strategies of the research programmes and other crosscutting units, institutional key performance indicators and individual key result areas.

Major trends and changes for tertiary education institutions call upon them to play a vital role in capacity development to support economic growth, poverty alleviation and research. Waghid & le Grange (2003:5) are of the opinion that research and development has become a primary focus of the higher education landscape in South Africa, particularly focusing on producing 'knowledge interests' which takes seriously the advancement of academic research and the construction of knowledge for social relevance while development is usually associated with research capacity enhancement of academics. Development focuses on the construction and application of knowledge, the enhancement of human capacity and the provision of research opportunities and other conditions that make possible the actualisation of the potentiality of critical inquirers (Hamlyn 1998:144 as quoted by Waghid & le Grange (2003:5)).

With HE institutions becoming more dependent than ever on their academic staff for their future survival and success, not all institutions are equipped to meet these challenges. For example, Universities of Technologies (UoTs), especially previously disadvantaged UoTs, have witnessed a dramatic change in their scholarly ethos and have yet to transcend their primary mission of teaching and shift towards scholarly productivity with the emphasis on research and publications. They have staff complements that are generally under-qualified. Institutions need to advocate a more rigorous research development programme that ensures credentials, as well as career development (Chetty, 2003:9–12).

In trying to meet the challenge of globalisation and national needs, HE institutions have to find a way forward in terms of capacity building to meet these challenges for e.g.

looking at providing incentives such as financial rewards, staff development, improved conditions of service, proper infrastructure and research capacity to promote research and development.

In South Africa, capacity development is commonly equated with providing opportunities for individuals from previously disadvantaged sectors. It is a means to improve efficiency of performance and production. Capacity building is not the sole responsibility of the researcher but a shared responsibility with the institutions that promote research (Breen, *et. al.*, 2004:430-431).

The Council on Higher Education's HEQC (2004b:140-141) reported that in first world countries such as Norway, Holland and Australia, training of higher education academics has become a common practice. In the United States of America, it is gaining momentum while the United Kingdom experienced a significant increase in staff development training programmes and enrolment. In South Africa, the transformation of the HE system demands a professional corps of academic staff and academic development and support staff who can meet the demands of the new policy environment.

Being increasingly influenced by national policies and global trends, staff development can no longer be considered primarily an institutional responsibility operational within an institutional context but should respond to the demands of policies and trends. Ultimately, HE institutions in South Africa should provide resources and incentives for their staff to meet their own professional goals and to contribute to the realisation of institutional missions. Staff development should be an integral part of an institution's human resource development strategy.

Various means of capacity development can be used to promote research and development skills for researches for e.g. proposal writing, academic writing skills, publication writing skills, computer literacy, post-graduate supervision, funding application, literature referencing, analysis of data, writing a research report and mentorship programmes.

In the case of academic writing skills it requires practice and continuous revision but very little attention is given to this. Naidoo & Tshivhase (2003:226) state that although

the primary function of a postgraduate promoter is to support the candidate's content knowledge, attention is seldom given to the novice researcher's writing ability. They suggest a programme of mentored academic writing whereby junior promoters are trained to support novice researchers' social and cultural contexts of writing. This is reiterated by Geber (as quoted by Megginson, Clutterbuck, Garvey, Stokes & Garrett-Harris (2006:97)) that it may be difficult for early-career academics to publish their work without sufficient mentoring in the writing and publishing process.

To give support to Geber's statement one could look at ASSAF as an example. ASSAF, as a recognised organisation by government, representing South Africa in the international community of science academies, in collaboration with the Inter-Academy Medical Panel, hosted a workshop on science writing aimed at young science scholars and professionals in the Southern African Developing Countries region. Participants were from the medical science field from South Africa, Botswana, Lesotho, Namibia, Swaziland and Mauritius. The significance of developing scientific writing skills specifically within the medical fraternity together with the challenges currently limiting the recording and dissemination of ongoing scientific activities and developments on the continent, were highlighted (Science for Society, 2008:13).

Other initiatives for capacity building are those of the NRF supported by DST. They have embarked on a South African PhD Project as a new initiative striving to address local human capital requirements by increasing the number of qualified post-graduate professionals in South Africa (NRF, 2007e:2). This project is crucial for the country or South Africa could be in a similar situation like universities in Sub-Saharan Africa where they are 'lucky' to have 10 PhDs in their ranks. In Kenya, with the exception of the University of Nairobi where about 50% of the faculties have PhDs or equivalent qualifications, doctorate cadres are thinly spread in 24 accredited and licensed universities (University World News, 2008a:1). The NRF has also developed South African Research Chair Initiative to retain and attract qualified research scientists, reverse the decline in the country's research output, focus on capacity at publicly-funded HE institutions, science councils and research institutions and to contribute to stimulating strategic research across the knowledge spectrum. The main aim of the initiative is to grow high-level research capital and production capacity in the higher education sector (Mangena as quoted by the NRF (2007d:1)). The NRF also has the TTK Programme, which aims specifically to accelerate the development of young, black

and female researchers. It also invests in mentoring for novice researchers to help develop a new generation of internationally competitive researchers (NRF, 2005:25) while the HSRC capacity development unit is focusing on research and human capital development that will address the need to develop individual and institutional research capacity for social and human sciences (Kongolo, 2008:1).

Attempts are also made by international organisations to strengthen capacity development. For example, according to Snewin (2008:6-7) the Wellcome Trust in the United Kingdom, the largest medical research charity is strengthening research capacity in developing countries. The aim is to enable more experienced researchers in developing and restructuring countries to act as role models to enthuse younger researchers, leading to expansion of research capacity and development of a critical mass. Snewin further states that the aim is also to ensure that talented researchers can access the training and experience needed to conduct research at world-class level and that attractive career pathways are available to provide an incentive for them to build their careers locally. They have two recent initiatives:

- firstly, the Health Research Capacity Strengthening Initiative in Kenya and Malawi where the overall goal is to generate and use local research output to improve the quality of healthcare interventions for the Kenyan and Malawian people and
- secondly, at its first meeting on 'Capacity Strengthening in African Institutions' held in Kenya, they launched a call for proposals for a new Research Capacity in Africa initiative. This scheme aims to provide funding to support the creation of consortia and networks that will link African universities and research institutes with institutions in the United Kingdom or in other countries with a developed market economy. It is their belief that nurturing the best and brightest researchers is the key to building a critical mass of sustainable research capacity in the developing world.

According to Thulstrup, Hansen & Gaardhoje (2006:3-4) establishing capacity is not enough; it must also be used to create development. Higher education research and development must be useful to society and lead to good employment opportunities for graduates. They are of the opinion that universities must be part of the surrounding

society and not isolated ivory towers. With 'knowledge sharing' becoming a key phrase, those with useful knowledge (for e.g. good universities) must share it with those who need it (for e.g. industry, public sector or the public in general).

For the purpose of this study the researcher will focus on the exploration of mentorship as a possible sustainable RCD initiative to improve research and development with a view to increase research output at a merged tertiary institution.

## **2.9 Mentorship**

This section will examine the concept of mentoring, mentoring trends, as well as the requirements for and benefits of a mentorship programme.

### **2.9.1 Concept of mentoring**

"Mentoring is a synergetic relationship - two or more people engaged in a process that achieves more than each could alone" (Rolfe, 2008:1). According to Crosby (2008:1) "mentoring is a brain to pick, an ear to listen, and a push in the right direction."

The concept of mentorship has been long known and tracked in history. The origin of the term 'mentor' comes from Greek mythology. According to Miller (2002:24) "in the Homer's *Odyssey*, Odysseus prepares to fight in the Trojan War and entrusts his friend, Mentor, with the care of his son, Telemachus. Mentor was responsible as a wise and trusted adviser for guiding all aspects of the boy's development. Later Athena, Goddess of both war and wisdom assumed the form of Mentor to offer prudent counsel."

The concept of mentoring also takes various forms in different cultures and periods of history. The Ancient Greeks had the concept of pederasty, in which teachers could hone young men to greatness. The Hindu and Buddhist religions have the concept of the guru, where a wise, religious man serves as the spiritual guide while in Judaism and Christianity, the concept of discipleship, as clergies guide their respective followers. In the medieval guilds, the economic system was built for apprentices to learn from guild masters and thus ensure the longevity of their respective crafts. Examples of famous mentor-mentee relationships are those of Socrates, Plato and Aristotle where Socrates

was the mentor of Plato and Plato was the Mentor of Aristotle and Aristotle was the mentor of Alexander the Great (Mentoring, 2007:1).

A mentoring programme is a framework for growth, development and succession planning as skills and knowledge is passed down. Wasserfall (2002:2) states that the aim of mentorship as part of an integrated corporate career development programme is to enable individuals to develop their potential and consequently to reach career goals within the shortest possible time. The University of Leeds concur that mentoring should be a developmental process that can also be more informal and ongoing, occurring as part of day-to-day research activities and interactions between colleagues and is of the opinion that it should be available throughout a research career and adapted to the individual's experience and expertise (University of Leeds, 2007:2).

For this study the primary purpose of mentoring is development. It is more about learning than teaching. It is also about how novice researchers may be 'nurtured' by professionals who are established and/or rated in their research field. **Mentorship** refers to the *provision of research assistance and guidance to novice researchers in either an informal or formal basis*. A **mentor provides assistance and guidance** while a **mentee** (or protégé) is the person being mentored i.e. **receives assistance and guidance**.

### 2.9.2 Mentoring trends

Knowledge transfer from one generation of employees to the next is emerging as a key organisational issue. With large numbers of employees reaching retirement soon, organisations must devise strategies to fill the vacuum. Mentoring is one of the methods to transfer skills and support continuous learning (Cooney, 2008:1).

The mentoring programme can focus on a range of fields like developing an academic career, community engagement, youth development, prevention of juvenile behaviour or developing researchers and can be conducted either independently or in collaboration with mutual partners. Charoux (1990:69 as quoted by Blunt & Conolly (2006:199)) considers mentoring as a voluntary relationship and feels that to try and enforce mentoring as being compulsory is not only futile but also dangerous as much psychological harm could come from 'forcing' such an issue.

Before delving into mentorship as a strategy of capacity development with the aim of improving research output, it is important to explore practices of other institutions (nationally and internationally) to make an informed decision about such an initiative.

Reviewed literature on mentorship indicates that although not a new concept, mentorship still has to gain momentum in South Africa, especially at HE institutions. However, there are various other capacity development initiatives in the process of being explored or being implemented in order to promote research and development. For example, according to Auf der Heyde (2008:3-5) strategic research development interventions have gathered pace at UJ and with regard to increasing research output, it needs to be tackled with interventions that seek to incentivise and support researchers toward greater productivity thus proposing a draft incentive policy. The University of Stellenbosch (2007:1) has motivated for the establishment of a mentor programme for new lecturers at the university. The goal of the programme is to facilitate and enhance the teaching and research profile of young and inexperienced academics.

International literature reviewed on mentorship, especially in the academic sector, indicated its popularity. Some of these examples are outlined below. However, there is a lack of evidence on the success of such a programme. This can be attested by Rex Marine Genomics (2006:3) stating that in the academic world statistics are harder to come by and to their knowledge there is no study yet available on the success of mentoring programmes for the European Union or for individual European Union states.

Attempts made to build research capacity through mentoring are, for example, those by Universities of Witwatersrand and Cape Town. University of Witwatersrand has secured funding for three-years for a Mellon Retiree Mentorship Scheme where the university wishes to provide a mechanism by which those persons reaching the end of their careers are able to continue to mentor and pass their skills to the next generation of researchers (Burns, 2006:1) while the University of Cape Town has established an Emerging Researcher Programme offering support to those launching out on their research. Established researchers are to maintain a competitive edge, drawing on the store of knowledge of senior researchers and outside experts. University of Cape Town's support thrust aims to build new capacity and sustain existing research excellence (Research 2003, 2008:1).



In its endeavour to optimise skills development, the DST launched an Internship Programme in 2006 with the objective to increase the pool of human resources available to Science Councils, Science Institutions and National System of Innovation. The envisaged outcome of Internship Programme is the Science System being able to attract and retain suitable candidates from the pool of interns thus addressing the shortage of skills (Department of Science and Technology, 2006:1-2).

Internationally, as a research-intensive Australian university, Melbourne scores strongly against every national research indicator. The University of Melbourne, which is one of only two Australian universities to be ranked in the top 100 in the prestigious Jiao Tong Index (78) and ranks in the top 10 for peer review in the Times Higher Education Supplement rankings has established a Strategic Research Initiatives Fund to support priority projects that encourage more intensive cross-disciplinary research across networks of academic departments, industry and other tertiary institutions. From 2007-2009 the university will recruit an outstanding group of Future Generation Professors and Fellows to lead collaborative research. The university will also strengthen its existing, highly successful programme for attracting Nobel Laureates and other world-renowned scholars. Throughout 2006 the Research and Research Training Taskforce examined ways to improve the quality and impact of University research and research training by carrying out audit research projects and staff research profile across the University, reviewing progress in quality and impact against international as well as national benchmarks, paying particular attention to the weight given to citations in several high profile international university ranking systems (University of Melbourne, 2007:1).

At the University of Leeds (2007:4) in the School of English, the school's research committee on its annual research review, decided to provide a proactive system of mentoring with all colleagues being paired with a mentor who will provide specific support for research-progress and wider research plan. The school recognised mentoring as an essential aid for all staff members, especially those new to the profession and is keen to see it as a continuous process and not just one that is restricted to the period of review. In the case of new junior colleagues, the mentoring system will be part of a probation process but with the emphasis on the continuity of research and the way in which it co-exists with the demands of teaching and administration. In the case of established and senior colleagues, the mentoring process

aims to maximise the benefit of the work already produced and to continue to ensure that work is of the highest quality.

While in the case of the Business School at the same university, a research-mentoring scheme was introduced in November 2003 for all academic staff with a research element in their contract. The role of the mentor is that of support, advice and encouragement to staff to fulfil their potential and to promote their research careers (University of Leeds, 2007:4).

An initiative, similar to University of Melbourne, was being undertaken by the Caucasus Research Resource Centres, Georgia where the centre planned to establish a mentorship programme for more experienced international researchers with young scholars from the South Caucasus with the purpose of encouraging professional cross-border relationships and the exchange and development of knowledge (Caucasus Research Resource Centres, Georgia, 2006:1).

The effort of the University of Oxford has resulted in a pilot-mentoring scheme named Career Accelerator Programme for postgraduate research students and contract research staff wishing to develop academic careers. The pilot programme was run from 2007-8 which aimed to put 15 researchers in touch with mentors. The Career Accelerator Programme also aimed to link Oxford alumni working at other universities with postgraduate researcher students or contract researchers at Oxford (The Oxford Learning Institute, 2006-7:2). The University of California's graduate division has a Graduate Research Mentorship Programme with a distinctive purpose of assisting recipients in acquiring and developing sophisticated research skills under faculty mentorship. The goal of the programme is to increase the number of students who persist toward the doctoral degree and show promise as candidates for faculty appointments (University of California, 2008:1).

At some institutions in the United States of America such as Cleveland State University (2006:1) the University Research Council observed a need among faculty consultation and expert advice in statistical and research methodology and created a statistical mentoring network for Cleveland State University researchers. The benefits of this programme will provide mentors and mentees opportunities for possible research collaboration and support a creative environment in which academic research and

scholarship can thrive.

In the medical field various types of mentoring is held. For example, the Academy of Medical Sciences has a mentoring scheme aimed to assist the clinician scientists (mentees) with their personal and professional development by enabling them to benefit from the experience of more senior people in allied areas of research (mentors) but who are independent of the clinician scientists' place of work and of their supervisor/line manager (Academy of Medical Sciences, 2005:1-2). The mentoring programme at the American College of Nuclear Physicians (2006:1) aims to assist the nuclear medicine trainees in fully developing their professional career through a support system that augments guidance by nuclear medicine residency programme directors. The National Institute of Health is placing new emphasis on mentoring where the researchers are now evaluated specifically on their mentoring skills when they come up for review. The aim is for mentors to train junior researchers in a wide range of skills: scientific investigation, communication, personal interaction, scientific responsibility and career planning (Mohan-Ram, 1999:1).

The Research & Training Centre on family support and children's mental health at the Portland State University in Oregon has the Underrepresented Researchers Mentoring Project. It is aimed at students of colour and disabilities. The programme is designed to encourage students to pursue an interest in research and to acquire a variety of research skills and experience. In addition to learning about the field of children's mental health at academic and practice-based levels, participants will also gain an understanding of the expectations, demands, role requirements and necessary strategies within research as an academic profession (Jivanjee, 2006:1). In South Africa, the Medical Research Council (2008:1) offers Research Training Internship with the purpose of training and mentoring young black researchers and to prepare them up to a level of suitability to be appointed as researchers and to increase the human resource base of health researchers in the country.

Mentorship also plays a vital role in community engagement. For example, in New York it is estimated to have over 2 500 mentoring programmes in operation, providing essential services to over 50 000 children each year. Research continues to show positive outcomes of these programmes (New York City, 2005:1) while the Office of Juvenile Justice is administering a Juvenile Mentoring and Delinquency Prevention

programmes, designed to reduce juvenile delinquency and gang participation, improve academic performance and reduce school dropout rates. This was done in recognition of mentoring as a potential tool for addressing two critical concerns with regard to America's children poor school performance and delinquency (Grossman & Garry, 1997:2).

Mentoring is also considered an appropriate means to address equity in research, as can be seen in the case at Swiss universities. *FrauschaftWissen* (a mentoring programme) is aimed at women in sciences to foster and support PhD students, post-doctoral students and senior researchers on their way to professorships. *FrauschaftWissen* encompasses a group of researchers from a broad variety of disciplines and focuses on training of particular skills by offering specific workshops and development of scientific networks (Bolliger, Schneeberger & Rohde, 2005:1). Similarly, in support of equal opportunity for women, the Monash University's Women's Leadership and Advancement Scheme in Australia runs a formal mentoring scheme for academic and general female staff bi-annually with the hope of increasing women's access to mentoring relationships. The scheme is skill focused and task-based and complements other professional development at the university (Monash University, 2008b:2).

In South Africa, as an agency of government responsible for promoting and supporting basic and applied research as well as innovation, the NRF piloted a mentoring programme for its TTK programme grant-holders. In terms of the NRF study, it was found that the programme's aim of contributing to the sustainable research capacity development of the designated research group has helped mentees to prioritise, stay focused and structure their research. Many skills, such as time management, project planning, negotiation, communication, administration, leadership and people skills were gained. However, some mentees felt that they did not gain any additional skills particularly as a result of the programme, while there were others who felt that they had broadened their focus, gained in confidence and initiated their own projects. The programme's aim of building research capacity formed part of a research culture (NRF, 2006:12).

In general, the mentor-mentee relationship functioned well with only a few mentors and mentees wishing to change the way their relationships were progressing. The majority

of the participants wished to continue their relationship after the programme ended, while some participants ended their relationships for various reasons such as the lack of interest and/or commitment, or because the match did not work, mainly due to the patronising and dominant role of the mentors or because the mentees had left the institution (NRF, 2006:12).

Mentoring is also useful to develop leadership skills as in the case of the Young Arab Leaders, which initiated a mentorship programme in Amman to help members develop leadership skills with an aim of having similar schemes in the United Arab Emirates, Saudi Arabia, Lebanon, Morocco and Egypt (Badran, 2005:1). In Australia, the Australian Society of Archivists (2007:1) embarked on a mentorship programme in January 2007 for archivists to become active professionals.

From the examples cited, the following trends emerge:

- in the case of HE institutions, resources from within the institution may be applied by using retirees (as in the case of University of Witwatersrand) or existing experienced staff (as in the case of University of Cape Town). The utilisation of outside experts may also be considered for e.g. University of Melbourne has a successful programme in place to attract Nobel Laureates and other world-renowned scholars. A strategy may be adopted to encourage the use of cross-border and cross-disciplinary mentor-mentee relationships (as in the case of University of Melbourne and the Caucasus Research Resource Centres) by linking alumni working at other universities with postgraduate research students or contract researchers as in the case of Oxford University;
- mentoring may be aimed at specific components of the research, for instance at the statistical component or the methodology component (Cleveland State University), while in other cases it may be aimed at personal and professional development (Academy of Medical Sciences and The American College of Nuclear Physicians). It may also be aimed at achieving equity in respect of race and gender (Medical Research Council, Swiss University, Monash University and NRF) and

- mentoring could play a vital role in the community with regards to rehabilitation of youth, especially children (New York State and the Office of Juvenile Justice) as well as in the development of leadership skills amongst youth (Young Arab Leaders).

Mentors who come from various fields are specialists (i.e. senior researchers with many years of experience and have the required skill in their field). Those that are in need of mentoring (mentees) are inexperienced, young people who may just be embarking on their careers, while in some cases they may be older people lacking the necessary skills or children who are in need of rehabilitation from juvenile misbehaviour.

An observation on the various mentoring programmes proposed or implemented seems to have a common goal where mentoring is viewed as a potential tool and a positive initiative to achieve the goals of each of these respective organisations. The overall aim is to equip individuals with the necessary skills to meet their personal and professional needs as well as organisational and community needs.

Lessons that one can take from the examples cited in order to implement such programmes in South Africa, especially at HE institutions are:

- first, ascertain the availability of skilled human resources both internally and externally for possible mentors;
- incentives can be used to attract mentors;
- specific needs of the individual must be identified before deciding on the type of mentorship programme to be initiated;
- there must be commitment from the mentor and mentee for the programme to be successful;
- there must be sufficient funding secured to sustain the programme and
- mentoring should be voluntary and non-threatening.

When embarking on a mentorship programme one needs to take cognisance of the requirements for such a programme. The role of the mentor and mentee as well as their responsibilities and attributes must be clarified. The benefits to all concerned (mentor, mentee, organisation) must be weighed. Factors that may contribute to the success of the programme or may be barriers must also be taken into consideration.

### 2.9.3 Requirements for and benefits of a mentorship programme

The objective of a mentoring programme is to provide a source of skills, career guidance, support and assist with the development of researchers.

In order for mentoring to be accepted as a viable strategy to achieve organisational and personal goals, the various stakeholders, their roles and requirements need to be clearly defined. Failing which, negative experiences could be the result as was the case of *Growing our own Timber* mentoring programme at the University of Witwatersrand. It was established to enable aspiring black academics to pursue the completion of their studies and introduce them to the academic workplace. However, its aims were partially met. There was a lack of clarity about the role of academic mentors. Mentees were asked if their mentors fulfilled the roles of collaborative teacher, publisher and co-enquirer for research. Between a third and a half of all mentees in this programme did not benefit from these roles (Geber as quoted by Megginson *et. al.* (2006:97)).

The concepts of mentor and mentee will now be discussed.

#### 2.9.3.1 Mentor and his/her role

A mentor is someone who takes a special interest in helping another person to develop into a successful professional. In the research context, mentoring includes any support for the individual to develop and maintain their research profile and activities (University of Leeds, 2007:2).

The mentor should have the following responsibilities and attributes (TDL IRT 2005 Mentoring Program, 2005:7).

#### ***Responsibilities:***

- transfer skills to the mentee;
- counsel by providing advice and helpful problem-solving hints;
- facilitate the mentee's professional growth;
- support and encourage the mentee;
- monitor the progress and provide feedback to the mentee and

- provide information, guidance and constructive comments.

***Attributes:***

- have the ability to listen, be open and committed;
- be knowledgeable in his/her specific field;
- be honest and able to give constructive advice;
- have the ability to motivate and demonstrate leadership and
- be a good time manager and self-manager.

**2.9.3.2 Mentee and his/her role**

A mentee is an inexperienced person on a journey of self-development with the accompaniment of the mentor (Cohen & Galbraith 1995 as quoted by Wasserfall (2002:12)).

According to the University of Southern Queensland (2006:1) the mentee's role in the programme is as follows:

- the mentee should take advantage of opportunities offered to them by the mentor;
- the mentee should develop good listening and communication skills;
- the mentee must drive the mentoring relationship by developing discussion points for the mentor to comment on;
- the mentee should build a rapport with the mentor;
- the mentee should ask the right question and seek relevant information and utilise networks given by the mentor and
- the mentee must keep appointments.

It is further iterated that to achieve the above role the effective mentee should possess the following qualities (University of California, Berkeley, 2005:un-numbered):

- the mentee should work hard and challenge him/herself;
- the mentee must be flexible and willing to accept criticism;



- the mentee must be resourceful and take initiative;
- the mentee should not be afraid to ask questions;
- the mentee must be honest and unafraid and
- the mentee should be patient with self as well as with the process.

According to the Georgia Department of Technical & Adult Education (2008:1) research in mentoring literature demonstrates that all participants (mentors, mentees and organisations) gain in mentoring relationships.

### **2.9.3.3 Organisational benefits**

The organisation benefits from mentorship in the following ways:

- improves morale and greater career satisfaction for both the mentor and mentee;
- enhances the competence of mentor and mentee which directly increases the organisation's efficiency;
- promotes the positive image of the organisation and reflects employee-centred values and
- increases employee commitment and loyalty (Schalekamp, 2005:1).

However, according to Shelton (Undated:iv) the benefits are not always 'clear cut' as in a case study where a formal mentoring programme was implemented within two South African organisations of a different nature as a tool to develop people in the organisation. An evaluation of the programme revealed that the differences in the perceived success of the programme lay in the goals of the programme relating to the broader goals and culture of the organisation. It was recommended that future research investigate the impact of organisational culture on the effectiveness of the mentoring programme.

### **2.9.3.4 Mentor benefits**

Mentoring is an add-on job. If a mentor is given no money, little release time and must assume new responsibilities for the effective induction of a new member into the profession, why would an already overburdened experienced professional say 'yes' to such an additional role? McKenna's study (as quoted by Gray (2005:1-2)) revealed that

mentors felt a sense of pride in passing the skills of the profession to the next generation; felt that they were helping the organisation, being rejuvenated, challenged and reinforced in their own professional identity; analysed their own skills more and received stimulating ideas; were reaffirmed that they could work with other people; were honoured to have been selected and felt important when asked for advice.

#### **2.9.3.5        Mentee benefits**

When a mentor-mentee relationship succeeds, behaviours and attitude change for the better. When mentees part company with their mentors, they often are more articulate, skilled, focused, trustworthy, self-aware, resilient, positive and sensitive. They are also more open to differences of opinions and better able to recognise opportunities (Nigro, 2003:240).

Mentee's benefits were evident in the case of a meta-analysis (a statistical technique that combines results from numerous studies to give an 'average') find in 2004. It was found that in 43 studies, those individuals who had been mentored had better career outcomes from both career-related and psychosocial mentoring; they were more satisfied with and committed to their careers (Simmering, 2007:2).

#### **2.9.3.6        Barriers to mentoring**

Mentoring, like employment equity and skills development is not a natural process. According to Meyer & Mabaso (2002:5-6) few mentors will deny the fact that they have to manage change in order to be effective but highlight some of the reasons why mentoring fails:

- the lack of commitment towards mentoring;
- the lack of planning the mentoring process;
- ineffective communication;
- insufficient training of mentors;
- resistance to change and
- diversity related problems.

### **2.9.3.7 Negative mentoring experiences**

Although there are numerous potential benefits of mentoring for all parties concerned, according to Simmering (2007:4) it is not always a positive experience and has identified the following negative experiences:

- the mentor delegates too much work to the mentee;
- the mentor abuses his/her power over the mentee;
- the mentor inappropriately takes credit for the mentee's work;
- the mentor attempts to sabotage the mentee and intentionally deceive the mentee;
- the mentor is intentionally unavailable or excludes the mentee;
- the mentor is too pre-occupied with his/her own career progress;
- the mentor lacks technical skills and cannot guide the mentee;
- there may be a poor fit in personality between mentor and mentee;
- there may be a bad attitude about the organisation or job;
- the mentor may sexually harass the mentee and
- the mentor cannot mentor effectively due to personal problems.

### **2.9.3.8 Successful mentoring**

According to Mentor (2006:1) a negative feedback is that as many as half of volunteer mentoring relationships terminate within the first few months. However, Shamsuddin (2003:4) is of the opinion that for a mentoring programme to be successful, it should have the following guidelines:

- objectives of the programme must be clearly defined;
- frequency and length of meetings must be determined;
- trust and open communication is essential;
- the type of communication must be determined and
- the need for a review process must be identified.

An example of a successful mentoring programme was at the University of East London (2005:1) where their Disability Mentoring Scheme linked their disabled students with

mentors from industry, public and voluntary sector organisations. Another success story of a mentorship programme was at the Dublin City University and Junior Chamber International Mentorship Programme. The joint mentorship programme was set-up as a pilot programme in 2003 and it involved mentoring of second year Dublin City University students by local business people. The programme provided students with the opportunity of directly accessing current work practices and received targeted career advice from an experienced person in the field. Due to the success of the pilot programme, graduates from Dublin City University had also become mentors (Dublin City University, 2005:1).

## **2.10 Conclusion**

Compared globally, South Africa has yet to meet global standards regarding research. This is evident from the literature reviewed on research development and research output, which confirms that it is stagnant and comparatively low. The reasons for this scenario can be attributed to arguments such as poor countries lacking strong funding and human resource bases for research programmes and are therefore unable to compete with their counterparts in rich nations. Another reason could be that South Africa is small in terms of research capacity, making it difficult to compete with the best in the world. It could also be attributed to the fact that other developing nations such as India and Brazil, having more researchers and spending more money on research and development than South Africa.

Government and HE institutions have expressed concerns with regard to this scenario. This has resulted in government having to revise old and implement new policies and strategies to sustain research and development with the aim of building capacity and improving research output with special emphasis on publishing in accredited publications. HE institutions have a critical role in assisting government realise its goal by producing knowledge and innovation through skilled labour while at the same time not ignoring the social needs of the country.

According to Blunt & Conolly (2006:196) in a country like South Africa, where there is priority in employment equity in higher education and competition by the public and private sectors for candidates, mentorship is one of the most powerful ways of retaining promising post-graduate students to become the new generation of university teachers

and researchers. Mentorship is an evolutionary process that requires time and effort to develop and it is all about learning and encouraging self-growth. If managed well, it is an effective means of capacity development.

Reviewed literature on mentorship indicates that mentorship is popular as it is recognised as an effective strategy whereby individuals can significantly grow, develop and share their skills. It is also evidently focused on a wide range of fields like community engagement and career and professional development in the academic and non-academic sectors. Although there is a wide range of literature on mentorship, in contrast there is little evidence of mentorship programmes for researchers with the aim of improving research output. Also, the success of existing programmes cannot be benchmarked as there is a paucity of evidence of any study on this aspect.

These factors supported the purpose of this study to explore mentorship as a sustainable research capacity development initiative with the aim of improving research output at a merged tertiary institution, in particular at UJ. The purpose of this study was further supported by a report of the Department of Higher Education and Training (DoHET), stating that judging by weighted research output it is apparent that some institutions require research capacity development rather than just support on their research output (Department of Higher Education and Training, 2010:7).

The next chapter outlines the methodology on the collection of data.

## **Chapter 3**

### **RESEARCH METHODOLOGY**

#### **3.1. Introduction**

The previous chapter highlighted the various definitions of research and its roles. According to The Concise Oxford Dictionary (2001:1217) research is “the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions”. An overview of the different roles of research indicated that the primary purpose of research is to acquire a knowledge base. For the purpose of this study, research is viewed as a vital means of ascertaining the possibility of training researchers via a mentorship programme to become publishers of accredited articles, chapters of books and books in order to gain recognition and accreditation.

This chapter outlines the theoretical framework for this research that is informed by using a case study adopting the qualitative and quantitative techniques. Arguments for this mixed method approach to the research methodology are presented together with the techniques or a process for data collection. The sampling design and the justification are also discussed.

#### **3.2 Objectives of the study**

The main objective of this study was to determine mentorship as a possible sustainable strategy to improve research output. In order to investigate the possibility of such a programme, this study will:

- determine the reasons for comparatively low research output at a merged HE institution;
- determine the existence of a REMP, if HE institutions have REMP in place and the nature of such a programme and
- explore the perceptions, attitudes and preferences of researchers/academics and

managers regarding mentorship as a possible sustainable strategy to improve research output.

To achieve the above objectives, the researcher then designed the study in order to collect data in a systematic and logical manner. The selected design had to be valid and reliable.

### **3.3 Research methodologies: case study using quantitative and qualitative techniques**

Research methods are a variety of techniques that are used when studying a given phenomenon. They are planned, scientific and value-neutral. Research methods are deliberately employed in a way that is designed to maximize the accuracy of the results (Methods Tutorial, 2008:1). Ramrathan (2005:36) states that research methodology underpins the philosophy within which the data is collected. Ramrathan further iterates that a case study is one example of a qualitative research methodology that is underpinned by a philosophy of obtaining in-depth understanding of a single phenomenon highlighting nuances within a particular context.

According to Yin (1994:13) a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and content are not clearly evident. Coldwell & Herbst (2004:61) are of the opinion that case studies are particularly useful in depicting a holistic account of a client's experiences and results regarding a programme. It is also used to organise a wide range of information about a case and then analyse the contents by seeking patterns and themes in the data. Gillham (2000:1) states that a case can be an individual; it can be a group; it can be an institution or it can be a large-scale community. A case study is one which investigates the above to answer specific research questions and which seeks a range of different kinds of evidence to get the best possible answers to the research questions.

For the purpose of this study, a case study using the mixed method in a HE institution – UJ was adopted. As there are 23 institutions (some merged) in South Africa, there is institutional

diversity as a result of changes in the higher education system. This means that the findings of a study of this nature may not necessarily apply to all institutions in a generalised manner. Therefore, a case study approach is most appropriate as it considers contextual factors that promote a particular way of doing things. Case studies allow for illumination of issues that are deeply rooted in every day practice within particular settings.

The justification for this methodology can be supported by Mouton (2001:150 as quoted by Ramrathan (2005:37)) who states that case studies allow for in-depth analysis of a single event or institution in order to illuminate particularities of this event or institution. It is not intended for generalisation rather through its illumination, issues could be conceptualised, interrogated and further researched to explore its impact on a wider scale.

The advantage of a case study approach is that it allows the use of a variety of research methods. It also fosters the use of multiple sources of data which in turn facilitates the validation of data. This approach can fit in well with the needs of small-scale research through concentrating effort on one research site or just a few sites (Denscombe, 2003:38).

With regards to using the mixed method i.e. quantitative and qualitative methods, there are strengths and limitations. According to Hathaway (1995:554 as quoted by Schulze (2003:12)) quantitative research systematically overlooks critical features of human phenomena so that results are often of limited value i.e. criticised as being dehumanising. Qualitative research techniques can overcome these shortcomings. On the other hand, qualitative research may appear to be fraught with subjectivism and questionable precision, rigour or credibility. Quantitative research is suited to theory testing and developing universal statements while qualitative research provides the researcher with in-depth knowledge, although this is not generalised. Combining the two approaches builds on the strengths of both and concurs with Lotter's view (1995:4 as quoted by Schulze (2003:12)) that quantitative and qualitative research is, in fact a complex continuum.



### **3.4 Rationale for using this case study**

The rationale for using this case study of University of Johannesburg (UJ) was chosen for convenience of easy accessibility as the researcher is a permanent full time employee at UJ for many years. For the past 6 years the researcher worked in the Department of Research and Innovation. The duties, in addition to the overall administrative support to researchers, include the management of submission of research outputs to the DoE for subsidy purposes. Statistics indicate that for 2005 UJ's total research output was 4.53%. Although UJ is rated among the top 10 universities in South Africa, the 4.53% is low in comparison to the top five universities whose outputs are between 10.57 to 15.29% (Venter, 2007:1).

In terms of Section 23 (1) of the Higher Education Act, 1997 (Act No.101 of 1997) the Minister of Education, Professor Kader Asmal, declared the merging of Technikon Witwatersrand (TWR) and the Rand Afrikaans University (RAU) into a single public HE institution as from 1 January 2005 (South Africa, 2003:31). This was achieved in 2005 hence, the emergence of UJ.

The new comprehensive institution is a challenge for UJ as the merger has resulted in the 'marrying' of two very different cultures and academic backgrounds. Ex-RAU (included the incorporation of the East Rand and Soweto campuses of Vista University) was a historically white Afrikaans university that was purely academic, involved in research and teaching whereas the ex-TWR was involved with teaching and industry liaison. Research at the ex-TWR was fairly young as technikons were only allowed to award degrees since 1993 in terms of the Technikon Act of 1993, and the Research Office was established only in 1997. To ascertain the level of research intensiveness at the ex-RAU and ex-TWR, research publications are used as a measurement of comparison between these two institutions. For example, in 2005, journal publications for the ex-RAU were 258 author units, while the ex-TWR produced 42 author units. In terms of book publication, the ex-TWR had none and for conference proceedings, the ex-RAU produced 68 author units, while the ex-TWR had 15 author units. These figures indicate the lack of research capacity that existed at the ex-TWR (University of Johannesburg: 2005).

In August 2009, UJ went through an institutional audit process which was undertaken by the CHE's Quality Committee. Habib (2008a:6) advocates that one of the visions of the UJ is to advance freedom, democracy, equality and human dignity as high ideals of humanity through distinguished scholarship and through reputable research and innovation. It is the avowed intention of UJ to establish itself within the next four to six years as a research-focused comprehensive institution. Habib further iterates that the Vice-Chancellor listed research as one of the institution's major strategic priorities. The University's Strategic Plan, which provides for ten strategic goals, states the third goal as:

“To establish the UJ among the top research universities in the country in terms of nationally and internationally accepted research criteria.”

This however, is not a goal that can be achieved overnight. In order to achieve such a goal, high volumes of research output is required in the form of accredited publications in journals, books, peer-reviewed conference proceedings both nationally and internationally and the acquisition of patents. Hence, there is a need to ascertain strategies to improve research output in order to help realise the institution's goal. Mentorship was looked at as a possible sustainable research capacity developmental strategy.

### **3.5 Research design**

According to Trochim (2006:1) research design provides the glue that holds the research project together. A design is used to structure the research i.e. to show how all the major parts of the research project work together to try to address the central research questions.

Kerlinger (1986:279 as quoted by Kumar (2005:84)) defines research design as a plan, structure and strategy of investigation to obtain answers to research questions or problems. The plan is the complete scheme or program of the research. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of data. Selltitz, *et. al.* (1962:50 as quoted by Kumar (2005:84)) define research design as the arrangement of conditions for collection and analysis of data in a manner that

aims to combine relevance to the research purpose with economy in procedure.

Kothari (1990:39-41) concurs by describing research design as the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data. Research design is needed to facilitate the smooth sailing of the various research operations, making research as efficient as possible while yielding maximal information with minimal expenditure of efforts, time and money. In essence research design stands for the advance planning of the methods to be adopted for collecting the relevant data and the techniques to be used in their analysis, keeping in view the objective of the research. A good research design is often characterized by its flexibility, appropriateness, efficiency and economy.

In using the case study methodology, two approaches were used to collect data viz., a survey via questionnaires (quantitative approach) and semi-structured interviews and document analysis (qualitative approach). This can be referred to as a mixed method study.

According to Tashakkori & Teddlie (1998:17) mixed method studies are those that combine the qualitative and quantitative approaches into the research methodology of a single or multiphase study. de Vos (1998:361) agrees by stating that in mixed methodology the researcher would mix aspects of the qualitative and quantitative paradigm at all or many methodological steps in the design.

UK Geocities (2007:2-3) overview of the mixed methods and its advantages is that qualitative research generates rich, detailed and valid data that contribute to in-depth understanding of the context. Quantitative research generates reliable population based and general data and is well suited to establishing cause-and-effect relationships. The advantages of the mixed method research include:

- increased validity: confirmation of results by means of different data sources;
- complementary: adding information i.e. words to numbers and vice-versa;
- research development: one approach is used to inform the other, such as using

- qualitative research to develop an instrument to be used in quantitative research and
- creating new lines of thinking by the emergence of fresh perspectives and contradictions.

According to de Vos (1998:15) qualitative research deals with data that are principally verbal while quantitative research deals with data that are principally numerical. Google (2007:1) defines quantitative research as a study that aims to quantify attitudes or behaviours, measure variables on which they hinge, compare and point out correlations. It is most often conducted via a survey on a sampling that must be representative so that the results can be extrapolated to the entire population studied. It requires the development of standardised and codifiable measurement instruments (structured questionnaires). Lake (2007:1) defines qualitative research as a method of advertising research that emphasises the quality of meaning in consumer perceptions and attitudes for e.g. in-depth interviews or focus groups. Hammersley (as quoted by Sarantakos (2007b:213)) is of the view that the time when qualitative research was an apparently unified movement ranged in opposition to quantitative research, has largely gone. As it has established a secure place in many fields, qualitative researchers are free to disagree amongst themselves and this freedom is being fully exercised.

The survey and interview approach provide the primary source of information. According to University of Fort Hare (2008:1) a primary source of information gives you original research that is presented for the first time i.e. new findings and theories. McNeill & Chapman (2005:131) define primary data as being collected first hand mainly through the use of research methods such as surveys, interviews or participant observation.

Document analysis provides a secondary source of information. According to McNeill & Chapman (2005:131) secondary data is evidence used that has been produced either by organisations such as the state or by individuals which usually takes the form of official statistics and various types of documents. University of Fort Hare (2008:1) states that secondary source information does not present new information or research but provides information or evaluations of previously presented research.

Stewart & Kamins (1993:5) are of the view that secondary information has some distinct advantages over primary data collection efforts. The most significant of these advantages are related to time and cost. It is much less expensive especially when answers to questions are required quickly and if there are stringent budget and time constraints imposed on primary research high-quality data from secondary source can be obtained. Consultation of secondary sources provides a means for increasing efficiency of the research dollar by targeting real gaps and oversights in knowledge. Secondary data also provide a useful comparative tool i.e. new data may be compared to existing data.

### **3.5.1 Survey**

According to Cooper and Emory (1995:269) to survey is to question people and record their responses for analysis. The survey method enables one to have the confidence that the sample is not biased and the data needed from respondents are available for a given analysis while McNeill & Chapman (2005:28) define survey as a method of obtaining large amounts of data from a large number of people in a relatively short time and usually takes the form of a self-completion questionnaire. Schnetler, Stoker, Dixon, Herbst & Geldenhuys (1989:2) are of the opinion that a survey is considered the best method available compared with other approaches to research, to describe certain characteristics of large populations and generally accepted that this will remain the case until an alternative method yielding the same information can be found.

For the purpose of this study, a survey via questionnaires was chosen as one of the instruments to collect data. The questionnaire was designed to obtain information from academics on their perceptions, attitudes and preferences of a mentorship programme at UJ as a possible sustainable strategy to improve research output. The survey method was extensively used to assist the researcher in ascertaining UJ's potential to implement such a programme.

### **3.5.2 Sampling techniques and description of the sample**

As it is sometimes not possible to conduct a research on an entire population, a sample of the population may be used. Coldwell & Herbst (2004:74-75) define sampling as a process or technique of selecting a representative part of a population for the purpose of determining characteristics of the whole population and highlights the following reasons for sampling:

- economy – taking a sample requires fewer resources than a census;
- timelines – sample may provide the needed information quickly;
- the large size of many populations – many populations about which inferences must be made are quite large. This could lead to inaccessibility of a particular population hence selecting a representative sample may be the only practical way to get the information; and
- accuracy/precision – a sample may be more accurate than a census. A sloppily conducted census can provide less reliable information than a carefully obtained sample.

Kothari (1990:187) concurs that a sample should be truly representative of population characteristics without any bias so that it may result in valid and reliable conclusions and highlights the need for sampling as follows:

- sampling can save time and money. A sample study is usually less expensive than a census study and produces results at a relatively faster speed;
- sampling remains the only way when the population contains infinitely many members and
- sampling usually enables one to estimate the sampling errors and thus assists in obtaining information concerning some characteristics of the population.

There are basically two types of sampling techniques - random and non-random. Random sampling techniques give the most reliable representation of the whole population, while non-random techniques, relying on the judgement of the researcher or on accident cannot

generally be used to make generalisations about the whole population (Walliman, 2005:276).

Similarly, Cohen, Manion & Morrison (2000:99) are of the view that there are two main methods of sampling i.e. probability sampling (also known as random sampling) and non-probability sampling (also known as purposive sampling). The difference between them is that in probability sampling the chances of members of the wider population being selected for the sample are known, whereas in a non-probability sample the chances of the members of the wider population being selected for the sample are unknown. In probability sampling every member of the wider population has an equal chance of being included in the sample. In non-probability sampling some members of the wider population will definitely be excluded and others definitely included.

Fox & Bayat (2007:54) are of the view that both the probability and non-probability sampling techniques have their uses. In the case of probability sampling, probability theory (a sub-section of statistics) may be used and inferences (deductions) made of the population. Non-probability sampling gives rise to many problems because probability theory cannot be used and inferences cannot be made about the population.

For this study, purposive sampling was used. Academic staff members in the four faculties were chosen as the sample as it is considered a fair representation of all academic staff in the nine faculties at UJ.

According to Cohen, *et. al.* (2000:103) in purposive sampling, researchers handpick the cases to be included in the sample on the basis of their judgement of their typicality that helps to build up a sample that is satisfactory to their specific needs. The sample has been chosen for a specific purpose. Walliman (2005:279) agrees with the definition stating that purposive sampling is where the researcher selects what he/she thinks is a 'typical' sample.

The definition of purposive sampling is similarly supported by many authors such as DePoy & Gitlin (2005:153) who cite that purposive sampling (also called 'judgmental sampling') involves the deliberate selection of individuals by the researcher based on predefined criteria; McNeill

& Chapman (2005:50) state that purposive sampling occurs when a researcher chooses a particular group or place to study because it is what is required. Silverman (2006:306) is of the view that purposive sampling allows us to choose a case because it illustrates some feature or process in which we are interested. It also demands that that we think critically about the parameters of the population we are interested in and choose our sample case carefully on this basis.

However, Welman, Kruger & Mitchell (2005:69) are of the opinion that purposive sampling is the most important type of non-probability sampling but state that the problem with this kind of sampling is that different researchers may proceed in different ways to obtain such a sample and therefore make it impossible to evaluate the extent to which such a sample is representative of the relevant population.

### **3.5.3 Defining the population**

Schofield (as quoted by Sapsford & Jupp (2006:27)) states that the first step to sampling is to define the population of interest clearly and accurately. According to Goddard & Melville (2001:34-35) a population is any group that is the subject of research interest while the sample is a representative of the population being studied while Bless, Higson-Smith & Kagee (2008:99) view population as the set of elements that the research focuses upon and to which the results obtained by testing the sample should be generalised. According to Fox & Bayat (2007:52) any group of individuals, events or objects that share a common characteristic and represent the whole or sum total of a case involved in a study is called the *universum* or *population*. The separate individuals or objects belonging to the population are called the elements of that population. A population can be finite i.e. all the elements can be ordered and counted.

For this study the total population chosen were all academic staff members in nine faculties and key senior managers involved in research management in a single merged HE institution.



### **3.5.4 Reasons for selecting this population**

Outputs are generally regarded as scholarly outputs. Hence, this population of academic staff members were chosen as they are regarded as scholars who 'produce' research outputs in HE institutions. With regards to non-academic staff members at HE institutions, their output production is few and far between. For example, in 2007 the non-academic staff members' outputs at UJ were 2.33 units in comparison with the academic staff members whose output exceeded 300 units (Research & Innovation, 2008:1).

### **3.5.5 Defining the sample for the study**

According to Schofield (as quoted by Sapsford & Jupp (2006:26)) a sample is a set of elements selected in some way from a population with the aim of saving time and effort and also to obtain consistent and unbiased estimates of the population status in terms of whatever is being researched. However, the 'unbiased estimates' in Schofield's opinion is in contradiction to Kumar (2005:164) who is of the opinion that the process of selecting a sample from the total population has its advantages and disadvantages. The advantages (similar to Schofield's theory) are that it saves time, financial and human resources. But the disadvantage is that one does not find out the information about the population's characteristics of interest but can only estimate or predict them. Hence, the possibility of an error in estimation exists.

A researcher has to work with a sample of a subject instead of a full population. However, people are interested in the population rather than the sample. Therefore the sample must be a representative of the population. If not, then selection bias is a possibility. A sample is biased if it represents only a specific subgroup of the population or if particular subgroups are over-or under-represented. Hence, when choosing the sample the researcher must be careful in ensuring that the sample is a representative sample if the findings are to be generalised.

According to Bless, *et.al.* (2008:99) good sampling implies:

- a well-defined population;
- an adequately chosen sample and
- an estimate of how representative of the whole population the sample is.

All academic staff members from four of nine faculties i.e. Humanities, Management, Engineering and Science were selected and provided the sample of the category to be studied. These faculties were chosen as they are large in student and staff numbers in comparison to the other five faculties at the institution. Although the four faculties are large in comparison to each other, their level of research output differs considerably for e.g. in the discipline of Humanities and Management one has a higher research output level as compared to the other. The same applies to the Engineering and Science faculties.

### **3.5.6 Sample size**

The issue of how many subjects to study is crucial. According to Hopkins (2000:5) the type of research design has a major impact on the sample size. Descriptive studies need hundreds of subjects to give acceptable confidence intervals or to ensure statistical significance for small effect. Experiments generally need a lot less as it is easier to see changes within subjects than differences between groups of subjects. Devlin (2006:57) concurs with Hopkins' view that the issue of sample size is intimately connected with the power of a research design and that a larger number of participants are required in correlation research. DePoy & Gitlin (2005:154) are of the view that determining the number of participants in the study or the size of the sample is a critical issue that often causes difficulty for new investigators. A common suggestion is to obtain as many subjects as the researcher can afford. However, a large sample size is not always the best policy and is often unnecessary so the sample size needs to be carefully thought out so that external validity can be maximised.

According to Welman, *et. al.* (2005:71-72) in order to determine the sample size, the following four factors should be kept in mind:

- **firstly** – to determine the size of the sample ( $n$ ), one should bear in mind the size of the population ( $N$ ). The smaller the total population, the relatively larger the sample should be to ensure satisfactory results;
- **secondly** – the desired sample size does not depend on the size of the population only but also on the variance (heterogeneity) of the variable. The larger the variance of the variable, the larger the sample is required;
- **thirdly** - if each stratum of a highly heterogeneous population is relatively homogeneous, a relatively smaller stratified sample is required. If the strata differ in size and heterogeneity, then the size of the respective samples taken from them must be adjusted accordingly and
- **fourthly** – in determining the sample size, one should bear in mind that the number of units of analysis from which one eventually obtains usable data may be much smaller than the number that was originally drawn. Therefore it is usually advisable to draw a larger sample than the one for which complete data is desired in the end.

In this study, the population was made up of all academic staff members in the nine faculties. A total of **1 544** academics constituted the population. **788** staff members provided the sample of the institution as follows:

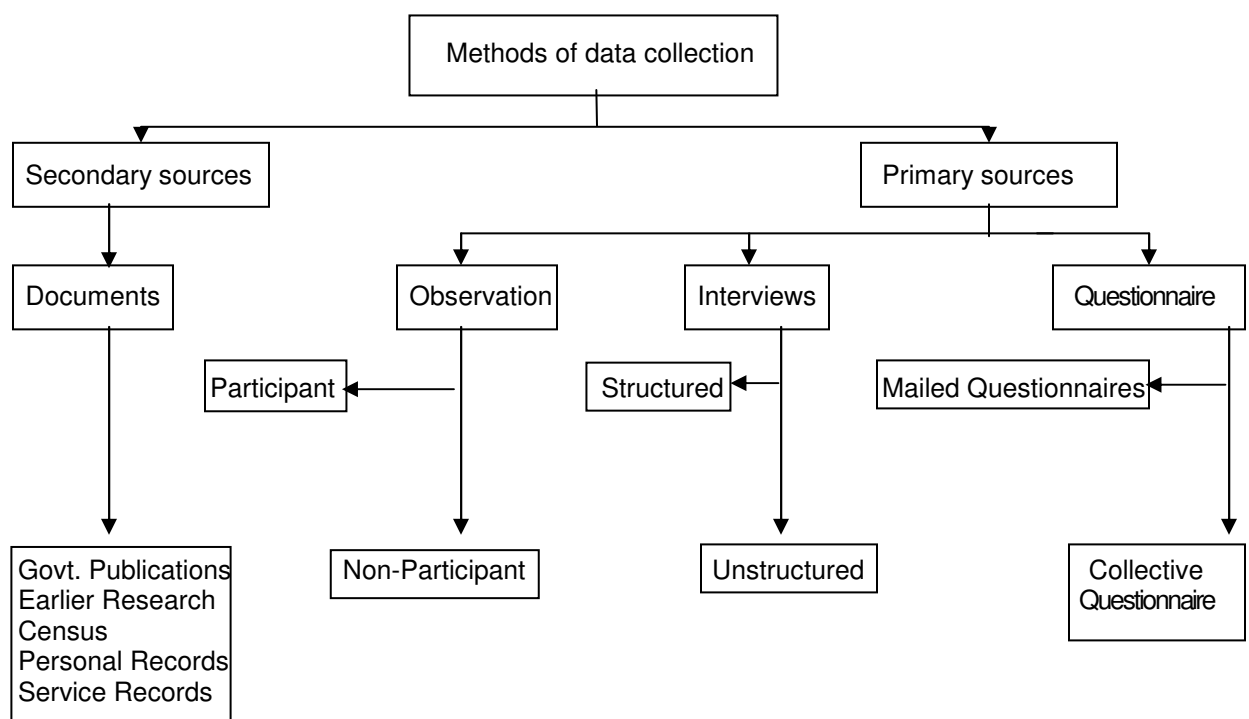
Faculty of Engineering and Built Environment:	137
Faculty of Humanities:	184
Faculty of Management:	286
Faculty of Science:	<u>181</u>
<b>Total:</b>	<b><u>788</u></b>

Data was limited to lecturing and research staff members. Non-lecturing academic staff members for example, Deans and a Research Manager, were accommodated in interviews. All the temporary staff members names provided in the data were excluded for the survey due to the difficulty of obtaining accurate data.

### 3.6 Data collection

Data is basically pieces of information collected by the researcher. They are answers to survey questions, responses to experimental stimuli, parts of texts, actions or behaviour options in a context observation and reactions to situations within a focus group discussion. Data are collected using methods such as experiments, content analysis and mostly through surveys i.e. interviews and questionnaires. These raw data are quantifiable and further prepared for analysis using coding. Coding is the procedure of converting raw data into numbers, with each number representing a code and a code standing for a value or category (Sarantakos, 2007a:1).

According to Kumar (2005:118) there are two major approaches of gathering data i.e. primary data and secondary data and the various methods are illustrated in Figure 4.



**Figure 4: Methods of data collection** Kumar (2005:118)

To summarise the above, primary data may be collected via questionnaires, interviews and data, while secondary data may be obtained via documents.

Coldwell & Herbst (2004:48) highlight some of the advantages and challenges of some of the various sources of data collection as reflected in Table 1.

Source of Evidence	Advantages	Challenges
Documentation Review	*Get comprehensive and historical information	*Often takes too much time
	*Information already exists	*Information may be incomplete
	* Few biases in information	*Not a flexible means to get data: data is restricted to what already exists
Interviews	*Get full range and depth of information	*Time consuming
	*Develop relationship with client	*Can be costly
	*Questions can be explained	*Interviewer can be biased
		*Can be hard to analyse and compare
Surveys	*Can be completed anonymously	*Might not get careful feedback
	*Inexpensive to administer	*Wording can bias client's response
	*Can get lots of data	*Are impersonal
	*Easy to compare and analyse	*Does not get full story
	*Can be administered to many people	*May need sampling expert
Case Studies	*Fully depicts client's experiences in the programme input, process and results	*Usually quite time-consuming to collect, organise and describe

**Table 1 – Advantages and challenges on various source of data collection** Coldwell & Herbst (2004:48)

According to DePoy & Gitlin (2005:168) three basic principles characterise the process of collecting information:

- the aim is to obtain data that are both relevant and sufficient to answer a research question;
- choice of data collection is based on a researcher's paradigm, nature of research problem, type of design and practical limitations or resources available to the investigator and
- the use of more than one process in order to answer the research question more fully.

Data collection for case study relies on many sources. For this study, data was collected through a survey via questionnaires, semi-structured interviews and documentation analysis. Yin (1994:80) is of the view that no single source has a complete advantage over all the others. He also states that various sources are highly complementary and a good case study will want to use as many sources as possible. This is supported by Gillham (2000:2) who is also of the view that no one kind of source of evidence is likely to be sufficient or sufficiently valid on its own. The use of multiple sources of evidence, each with its strengths and weaknesses, is a key characteristic of a case study research.

### **3.6.1 Questionnaires**

A questionnaire is usually considered as more superficial than an interview. According to Kumar (2005:126) a questionnaire is a written list of questions, the answers to which are recorded by respondents. Similarly DePoy & Gitlin (2005:170) describe questionnaires as written instruments that may be administered face-to-face, by proxy or through the mail and the questions may be structured or unstructured.

Questionnaires rely on written information supplied directly by people in response to questions asked by the researcher. The information from questionnaires tends to fall into two broad categories i.e. 'facts' and 'opinions'. It is vital that at all stages of using questionnaires the researcher is clear about whether the information being sought is to do with facts or opinions (Denscombe, 2003:145-146).

According to Rugg & Petre (2007:144) in principle questionnaires are good for finding out how widespread something is. For example, if a researcher is interested in near-death experiences and may have found some very interesting results in the initial work with interviews but now wants to find out how many people across the country have experienced the same things as the respondents. The researcher knows what to ask and why; now he/she just wants to know how widespread a particular thing is. Questionnaires can be very useful for tackling this sort of problem.

Questionnaires are also useful for collecting ancillary data. For example, some students were investigating correlations between objective features of a digitised image and subjective features such as respondents' opinions of how attractive the image was. Questionnaires were considered the most sensible way of collecting information. However, the situation is different if the questionnaire is being used as the main source of data collection. The response rates to questionnaires are low.

Despite the questionnaire having some negative aspects such as inflexibility, the possibility of it being ignored by the individual or not receiving information in great depth, this instrument is chosen as an appropriate means to collect data as it yielded the following advantages as cited by Kumar (2005:130):

- it is less expensive as respondents are not interviewed and the researcher saves on time, human and financial resources. Hence, it is comparatively convenient and inexpensive especially when it is administered collectively to a study population and
- it offers greater anonymity as there is no face-to-face interaction. In some situations when sensitive questions are asked it helps to increase the likelihood of obtaining accurate information.

These advantages are similarly expressed by McNeill & Chapman (2005:44) who also state that:

- distributing questionnaires is a reasonably quick way of conducting research. They

take less time and effort to complete especially if the questions are of closed variety;

- embarrassing questions are more likely to be answered than being face-to-face with someone and
- questionnaires also involve minimal interaction with the researcher and therefore there is seen to be less opportunity for subjective bias.

However, the negative aspect of inflexibility of the questionnaire as cited by Kumar above is in contradiction to Walliman (2005:281) whose opinion is that the questionnaire is a very flexible tool as a method of data collection but it must be used carefully in order to fulfil the requirements of a particular piece of research.

### **3.6.1.1 Questionnaire design**

Rugg & Petre (2007:145) state that questionnaires take time to fill in, time to analyse and is of the opinion that most students ask more questions than they need to. As this wastes the time of everyone involved, two things should be asked about each question:

- what will this question give the student? and
- what literature or evidence can be used to justify the inclusion of this question?

Frazer & Lawley (2000:2) state that questionnaire design and administration is a critical component of many research projects. A well-designed and administered questionnaire can provide the data necessary to address research questions while poorly designed and administered questionnaire will result in useless information. Many researchers still debate whether question design is an art or a science and as there is no widely accepted theory of questionnaire design; researchers use a diversity of approaches when designing questionnaires.

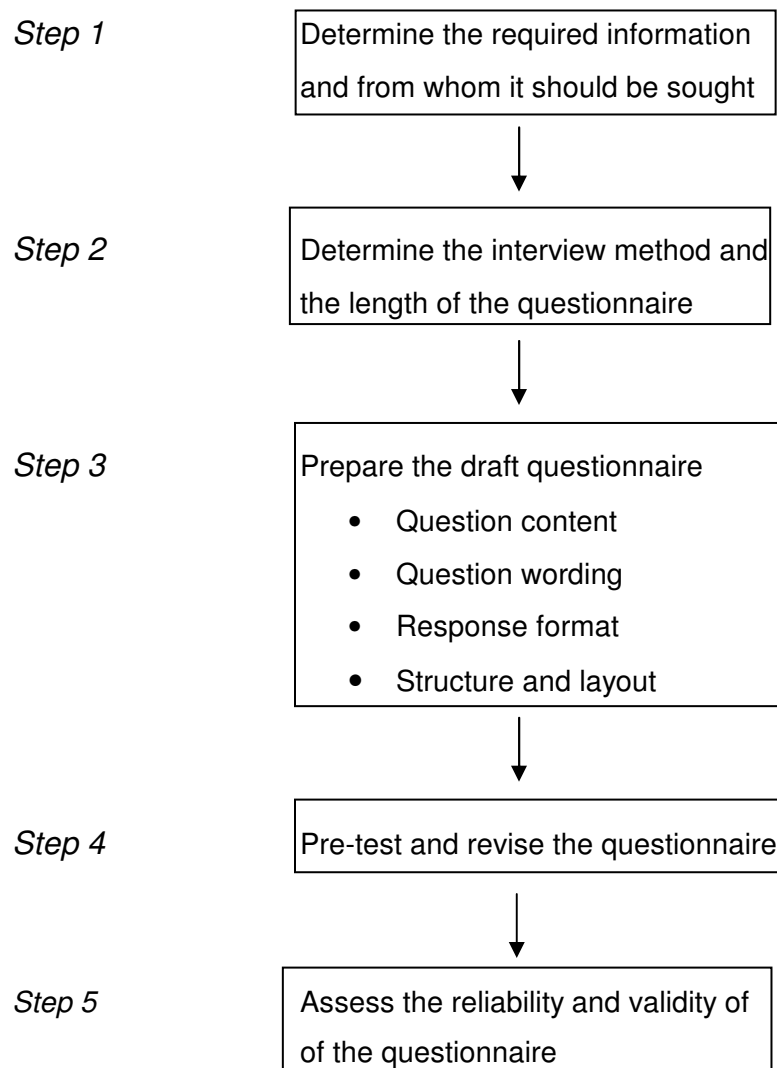
According to Warwick & Lininger (1975:127) there are two basic goals in questionnaire design:

- to obtain information relevant to the purposes of the survey and



- to collect this information with maximal reliability and validity.

These goals can be called relevance and accuracy. To ensure relevance, the researcher must be clear about the exact kind of data required in the study. Accuracy is enhanced when the wording and sequence of the questions are designed to motivate the respondent and to facilitate recall. Co-operation will be highest and distortion lowest when the questionnaire is interesting, simple, not time-consuming, embarrassing or personally threatening. However, a major constraint in questionnaire design is respect for the dignity and privacy of the respondent. When designing a questionnaire there are five processes that should be followed as reflected in Figure 5 (Frazer & Lawley, 2000:19):



**Figure 5: Five processes in questionnaire design** (Frazer & Lawley, 2000:19)

For this study, the questionnaire was divided into four sections and questions focused on obtaining the following information:

**Section A:** Biographical and background information (information on race, gender, age, qualification, etc was requested) that is essential for statistical reasons;

**Section B:** For Mentors. This section was relevant to those academic staff members who had mentored or are mentoring in order to gain insight into their perception and attitude towards mentoring;

**Section C:** For Mentees. This section was essential to those who were mentored or are being mentored in order to assess their experiences and opinions about mentoring and

**Section D:** Mentorship Programme. This section was aimed at obtaining the respondents' views on a formal REMP at UJ.

### 3.6.1.2 Questionnaire format

According to Cano (2009:3) the questionnaire should be uncluttered and spread out. A clear format must be chosen for the respondent to record their responses.

According to Denscombe (2003:155) from the onset some thought should be given on whether the overall questionnaire will benefit from using a variety of questions or whether it is better to aim for a consistent style throughout. Variety has two potential advantages. **First**, it stops the respondent from becoming bored. **Second**, it stops the respondent falling into a 'pattern' of answers. For e.g. on a scale of 1 to 5 he or she puts 4 down to all questions. Consistent style of question allows the respondent to get used to the kind of questions so that they can be answered quickly and possibly with less confusion and misunderstanding.

Questions could be open-ended or closed-ended questions. Open questions let the respondent decide on the wording, length and kind of matters to be raised in the answer. The questions tend to be short and answers tend to be long Denscombe (2003:155). Russell (2009:1) concurs stating that open-ended questions allow the respondent to answer in a freewheeling format.

According to Denscombe (2003:156) the advantage of 'open' questions is that the information gathered is more likely to reflect the full richness and complexity of the views held by the respondents. The disadvantages are that more effort on the part of the respondents and the researcher is left with data which are quite 'raw' and require a lot of time-consuming analysis. Denscombe further states that closed questions structure the answers and instruct the respondent to answer by selecting from a range of two or more options supplied on the questionnaire. The advantage of this type of questions is that they provide the researcher with information which is uniform and can be quantified and compared. It can also be easily analysed. The disadvantage is that the respondents might get frustrated by not being allowed to express their views fully. Russell (2009:1) is of the opinion that close-ended questions are the simplest form of data acquisition.

In this study, semi-structured questionnaires comprising of open and closed ended questions were used. This approach was chosen because the advantages of using open-ended questions are that they allow the respondents to express themselves freely resulting in a greater variety of information. This virtually eliminates the possibility of investigator bias while the advantages of the closed-ended questions ensure that the information required by the researcher is obtained and is easy to code and analyse. On the other hand, one must also take note of the drawbacks of these types of questions. In the case of open-ended questions, analysis of data is more difficult while in the case of closed-ended questions, the information obtained lacks depth and variety (Kumar, 2005:135).

The questionnaire focused on gathering biographical data and to explore the perceptions, attitudes and preferences of researchers/academics and managers regarding mentorship as a possible sustainable strategy to improve research output. Experiences of and suggestions from mentors and mentees were also sought.

### **3.6.1.3 Administering of the questionnaires**

The four most common methods of data collection in the sample survey include questionnaires administered by an interviewer in the presence of the respondent, the

telephone interview, the mail questionnaire and the self-administered questionnaire completed in group sessions, as in a classroom or office (Warwick & Lininger, 1975:128). According to Walliman (2005:282) there are two basic methods of delivering questionnaires, personally and by post. The advantages of personal delivery are that a respondent can be helped to overcome difficulties with questions and a personal persuasion by the researcher can ensure a higher response rate. The limitations are that the personal involvement of the researcher enables more complicated questions to be devised and the problems in time and geographic location limit the scope and extent to which this method of delivery can be used. Postal questionnaires do not have these limitations but the serious problem is that the response rate is difficult to predict or control. The non-response can have a serious effect on the validity of the sample by introducing bias into the data collected.

For this study, questionnaires were administered to all academic staff in four of nine faculties via the Internet. Frazer & Lawley (2000:92) are of the view that the use of Internet questionnaires is still in an early state of acceptance. He also states that questionnaires via the Internet are very similar to mail questionnaires in relation to administration with the key difference being electronic delivery rather than hard copy delivery.

<b>STEP</b>	<b>TIMING</b>	<b>PROCEDURE</b>	<b>CONTENTS</b>
<b>1</b>	Before Administration	Compiled mailing list and ensured questionnaire site was operational	*E-mail list of respondents *URL for questionnaires
<b>2</b>	Commencement	Sent e-mail to sample inviting response & provided hyperlink to questionnaire URL. Given one week to respond.	*Internet questionnaire link *Letter of intent *Copy of Dean's Approval email
<b>3</b>	After Week 1	Emailed 1 <sup>st</sup> request again to recipients constituting the sample together with a combined 'thank you' to those who have completed the questionnaire and a reminder to those who would have still liked to complete the question	*Internet questionnaire link *Letter of intent *Copy of Dean's Approval *Thank you/reminder email
<b>4</b>	After Week 2	Telephonic calls were made to a few known researchers in order to increase the number of returns	*Verbal liaison

***Table 2: Process in administering the questionnaire***

The researcher carried out the process as outlined in Table 2. In summation, the researcher sent emails to the entire sample by attaching the letter of intent, copy of the respective faculty Deans' approval and provided a hyperlink to complete the questionnaire. A request was made to return the completed questionnaire via a hyperlink for anonymity. The time frame given to complete the questionnaire was one week. After the first week a thank you email was sent to those who completed the questionnaire and a reminder to those who would have still liked to complete the questionnaire. In order to increase the number of returns a few telephonic calls were made to some known researchers which proved positive.

This approach was used as an alternative approach of giving the sample one notice and three weeks to complete to the questionnaire, as it is viewed as a more successful means.

An option of offering an incentive to the respondents with a view to increase the response rate was looked at. However, this idea was discarded. Due to the anonymity aspect of the questionnaire, it was not possible to determine who the respondents were.

This survey method was chosen as it was a quick and easy means to reach a large group at a relatively low cost and in a short space of time.

#### **3.6.1.4 Pre-test of the research instrument**

McNeill & Chapman (2005:45) are of the opinion that in a questionnaire-based research, this stage of conducting a pilot survey should never be omitted. If there are any problems with the wording of the draft questionnaire then it should show up at this stage and can be corrected before the real investigation starts. This is supported by Kothari (1990:125) who suggests that it is advisable to conduct a 'pilot study' for testing the questionnaires which brings to light the weaknesses, if any, of the questionnaires and also the survey technique and how improvements can be effected. Pilot survey is the replica and rehearsal of the main survey. Fox & Bayat (2007:102) are of a similar view stating that a pilot study is a trial run of an investigation conducted on a small scale to determine whether the research design and methodology are relative and effective. The best way to determine the adequacy of the research design is to pre-test it i.e. to conduct a pilot study. Fox & Bayat further state that conducting a pilot study makes it easy to correct areas of misunderstanding or confusion without wasting time or money. This is one way of improving the reliability of the project. Based on a pre-testing a researcher may:

- delete or rewrite questions;
- change open-ended questions to closed-ended questions or vice-versa and
- verify that all response options have been provided.

For this study, prior to sending the finalised questionnaire, a pre-test of the research instrument was done. The reason for carrying out this exercise was to test the questionnaire for clarity and/or problems. It was also done to ascertain if the questions were simple and easily understood.

Ten academic staff members from the four non-sampled faculties were approached. The staff members were selected as they were similar to the sample chosen for the actual research.

Six of the ten members indicated their willingness to participate. Only four of the six respondents submitted their input. Suggestions of wordings and sequence of two questions were recommended by the respondents. These were considered by the researcher and included in the questionnaire. The questionnaire was finalised for circulation.

### **3.6.2 Interviews**

According to Goddard & Melville (2001:49) an interview involves a one-on-one verbal interaction between the researcher and the respondent. DePoy & Gitlin (2005:169) describe interviews as a verbal communication with one individual or a group or couples, families and workgroups that can be either structured or unstructured.

Interviews are considered as one of the major sources of data collection and it is also one of the most difficult to get right. Interview data can be used in a variety of ways and for a variety of specialist purposes depending on the background of the researcher and the context in which the interview occurs. As an information-gathering tool, the interview lends itself to being used alongside other methods as a way of supplementing data, adding detail and depth (Denscombe, 2003:165-166).

The researcher conducted semi-structured one-on-one interviews with the Deans from the four sample faculties, a Research Manager from one of the four sample faculties, who was also present with the Dean in the capacity of Acting Vice-Dean. The interviews were recorded on tape. Interviews with the Deputy Vice-Chancellor (Research, Innovation and Advancement) and Executive Director (Research and Innovation) that were originally suggested, did not take place because the researcher had acquired the data needed from two Research Reports of 2008. The report is outlined under Document Analysis in Chapter 4 (4.3.1).

The option of an interview was chosen because the executive and senior members of staff have very busy schedules. The executive and senior members of staff are empowered with the task of promoting research to help the university to achieve its goal of becoming a

research-focused institution. The purpose of the interviews was to ascertain their level of support for research in order to improve research output in the institution.

### **3.6.3 Document analysis**

Documentary information is likely to be relevant in every case study topic and can take many forms as outlined below:

- letters, memorandums and other communiqués;
- administrative documents – proposals, progress reports and other internal documents (for e.g. policies) and
- newspaper clippings and other articles appearing in the mass media.

For case studies, the important use of documents is to corroborate and augment evidence from other sources. Documents play a systematic role in any data collection (Yin, 1994:81). The first step in the document analysis was to obtain the relevant official documentation from the institution such as policies relevant to research and development. The four sample faculties were also approached for official documents of which only one faculty had documentation. The other three faculties had used the institutional policies as guidelines for research and development.

An analysis of UJ's records and reports was undertaken to ascertain the institution's role and endeavours in promoting research, identifying barriers that hinder research and enabling factors promoting RCD.

### **3.7 Validity and reliability**

The final important issue in questionnaire design is whether the instrument accurately and consistently measure what is supposed to measure i.e. the questionnaire should be valid and reliable. A questionnaire is valid if it measures what it is supposed to measure and is reliable if the responses are consistent and stable (Frazer & Lawley, 2000:35).



Hopkins (2000:5) states that validity represents how well a variable measure what it is supposed to while reliability indicate how reproducible the measure is on a retest. Similarly, Hammersley (as quoted by Silverman (2006:46-289)) states that reliability refers to the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on a different occasion while validity refers to the extent to which an account accurately represents the social phenomena to which it refers. Tashakkori & Teddlie (1998:82) view reliability as the degree to which the results of a measurement accurately represents the true magnitude or quality of a construct.

Cohen, *et.al.* (2000:105-117) are of the view that it is impossible for research to be 100 percent valid i.e. he describes this as the optimism of perfection. In quantitative research there is a measure of standard error while in qualitative research it is subjective to respondents, their opinions and attitudes that contribute to a degree of bias. Therefore, validity should be seen as a matter of degree rather than as an absolute state. His view on reliability concurs with the authors quoted in the above paragraph stating that reliability is a measure of consistency over time and over similar samples i.e. a reliable instrument for a piece of research will yield similar data from similar respondents over time.

Reliability was established through means of pre-testing the research instrument i.e. the questionnaire with a few academic staff members from the non-sampling faculties. The aim was to determine if there was consistency. On completion of the pre-testing, the questionnaire was refined and administered to all the academic staff of the faculties that constituted the sample.

According to Graziano & Raulin (2004 as quoted by Marczyk, DeMatteo & Festinger (2005:158)) validity refers to the conceptual and scientific soundness of a research study. Its primary purpose is to increase the accuracy and usefulness of findings by eliminating or controlling as many confounding variables as possible, which allows for greater confidence in the findings of a given study.

### **3.8. Data analysis and interpretation**

One of the most challenging and rewarding task in survey research comes after the data has been collected and the coding, editing and preliminary processing has been completed. This is the statistical analysis and interpretation of the data. The aim of this step is to provide a summary of the findings that satisfies the objectives of the research (Warwick & Lininger, 1975:292).

Welman, *et. al.* (2005:241-242) state that after the research is conducted according to the planned design the obtained results must be interpreted. The design of the study also concerns the statistical analysis and interpretation of the appropriate data. Qualitative data analysis often involves analysing interviews and doing content analysis. Quantitative data analysis involves statistical analysis of the obtained data. These procedures include the mode, median, mean, frequencies and correlation. Statistical investigations can be represented graphically by means of bar charts and pie charts.

Part of the analysis also focused on *a-priori* categories of analysis as well as a grounded approach to analysis. Ramrathan (2007) explained that the literature reviewed will present categories that will inform the way in which the survey instrument and part of interviews is constructed. These are referred to as *a-priori* categories. The grounded approach to analysis focused on data generated through the interviews and document analysis. Silverman (2006:96) views grounded theory methods as a method that try to generate theories through data rather than through prior hypotheses. At best, grounded theory offers an approximation of the creative activity of theory building found in good observational work compared to the dire abstracted empiricism present in the most wooden statistical studies.

### **3.9. Statistical analysis of the questionnaire**

For this study, the survey instrument was analysed using the SPSS for Windows (version 17). SPSS is one of many computer software programs employed by researchers and students when conducting computer assisted data analysis. SPSS stands for Statistical Package for

the Social Sciences. SAS and Minitab are another two popular programs but SPSS is most common and is available for Windows as well as for Mac OS X.

SPSS is a dynamic, diverse and well-integrated computer program. The basic version focuses on data analysis but offers a lot more, for instance it assists in planning of the study, data collection and data preparation and reporting. It also provides access to powerful, fast, valid and reliable statistical analysis. Speed and reliability are two criteria that make SPSS the only way even for the experienced statisticians. Access to variety forms of tabular and graphical presentation of the data and of reporting methods make SPSS even more practical and more useful for all users (Sarantakos, 2007a:3-4).

For the purpose of this study a basic descriptive statistical analysis was done using frequencies and cross-tabulation data.

### **3.10 Limitations of the study**

Although research output affect all HE institutions as it influences funding, this study focused on one single merged HE institution i.e. UJ and that limited the scope of the study. UJ is a complex organizational system due to its status of being a comprehensive institution where a 'marriage' of different cultures and academic backgrounds took place. This merger took place in terms of Section 23(1) of the Higher Education Act, 1997 (Act No.101 of 1997). UJ has nine faculties offering diploma and degree courses and as limitation to this study, only four faculties (viz. Engineering, Humanities, Management and Science) were chosen for this research. The choice of four faculties was chosen in order to meet the scope of a Masters' dissertation research.

The limitation in choosing these faculties is that the non-sample faculties could not be included in the study as they were not as research intensive as the sample faculties. This is due to the fact that some of the non-sample faculties' main function is teaching and they have only recently changed their focus to include research.

### **3.11. Conclusion**

This chapter outlined the research method and design that was adopted for this study. A rationale was developed to use the case study approach. The sample was obtained by using purposive sampling and consisted of all academic staff in four of nine faculties and key senior and executive staff members tasked with promoting research in the institution. The justification of this sample was that these are the large faculties in comparison to the other five (non-sampled) faculties of the population. Two approaches were used to collect data. A survey via questionnaires (quantitative approach) was used to explore the academics views regarding a mentorship programme while interviews with key senior personnel and analysis of institutional documents (qualitative approach) was done to ascertain the level of support to improve research in the institution. The interviews were audio-recorded and transcribed with the permission from the interviewees. The questionnaires were analysed using the SPSS for Windows (version 17).

The findings of the data produced via these various techniques are presented in Chapter 4.

## **Chapter 4**

### **DATA ANALYSIS AND INTERPRETATION**

#### **4.1 Introduction**

The previous chapter outlined the theoretical framework for this research that was informed by using a case study adopting the qualitative and quantitative techniques.

This chapter presents the analysis of data gathered from a survey and interviews that were conducted together with document analysis to determine mentorship as a possible strategy to improve research output at a HE institution with the following sub-objectives:

- determine the reasons for the comparatively low research output at a HE institution;
- determine the existence of a REMP and whether HE institutions have REMP in place and the nature of such a programme and
- explore the perceptions, attitude and preferences of researchers/academics and managers regarding mentorship as a possible sustainable strategy to improve research output.

The analysis was done in 2 parts. Part 1 was the analysis of quantitative data obtained from questionnaires completed by 144 participants. Part 2 was the analysis of qualitative data obtained from semi-structured interviews and document analysis.

#### **4.2 Part 1: Quantitative data**

For the purpose of this study, a survey via a questionnaire was chosen as one of the instruments to collect data. The questionnaire was designed to obtain information from academics on their perceptions, attitude and preferences of a mentorship programme at UJ, as a possible sustainable strategy to improve research output. The survey method was extensively used to assist the researcher in ascertaining UJ's potential to implement such a programme.

The questionnaire was administered to all academic staff members (excluding temporary staff and senior management) in four of nine faculties with a sample of 788.

The questionnaire did not deliver to approximately 80 recipients' email addresses. In total data was collected from 144 (20%) participants.

Two verbal feedbacks were received on the limitations of the questionnaire. From one respondent the comments were that, there was insufficient space provided for comments and the space provided for a question in **Section A, Q.A12** - "the number of students supervised", was insufficient. Space was only provided for a two digit response.

The second verbal comment received was that there was not enough scope to test the verification of the response i.e. whether respondents were reading or merely ticking answers. Also the result may be skewed as the questionnaire seemed to lean more to the positive side.

The questionnaire was designed with 4 sections as follows:

Section A - to obtain data on biographical and background information of respondents.

Section B – to obtain insight into the mentors' perception towards mentoring.

Section C – to assess mentees' experiences and opinions about mentoring.

Section D – to obtain information about academic employees' views on a research mentorship programme at UJ.

The questionnaire, together with the letter of informed consent, is attached as **Annexure A.**

In order to explore one of the sub-objectives (reflected below) of this study, the questionnaire was administered to all academic staff members (excluding temporary staff and senior management) in the four sample faculties, viz. Engineering, Humanities, Management and Science. Semi-structured interviews were conducted with Deans. The analysis of the questionnaire is outlined below:

**Explore the perceptions, attitude and preferences of researchers/ academics and managers regarding mentorship as a possible sustainable strategy to improve research output.**

## SECTION A

### 4.2.1 Biographical and background information of respondents

This section presents the biographical statistics of all respondents.

*Table 4.2.1.1: Gender of respondents*

	<b>Percent</b>
Male	54.20
Female	45.10
No response	0.70
Total	100.00

Table 4.2.1.1 indicate that of the 144 respondents 54.20% were males and 45.10 % were females.

*Table 4.2.1.2: Race of respondents*

	<b>Percent</b>
African	15.30
Coloured	1.40
Asian	10.40
White	72.20
No response	0.70
Total	100.00

Table 4.2.1.2 shows a majority response from the white race (72.20%) with 15.30% from African respondents, 10.40% and 1.40% from Asian and Coloured respondents respectively.

*Table 4.2.1.3: Age of respondents*

	<b>Percent</b>
Younger than 25	1.40
25 to 34 years	19.40
35 to 44 years	38.90
45 to 54 years	21.50
55 to 64 years	13.20
65 or older	4.90
No Response	0.70
Total	100.00

Table 4.2.1.3 indicate that only 1.40% of the respondents were younger than 25 years. The respondents between 25 to 34 years accounted for 19.40% of the response; the

highest response of 38.90% was received from respondents aged between 35 to 44 years followed by 21.50 % aged between 45 to 54 years. For the 55 to 65 years category there were only 13.20% respondents and 4.90% who were 65 years or older.

*Table 4.2.1.4: Completed years of employment of respondents*

	<b>Percent</b>
Less than 1 year	11.80
From 1 - 3 years	17.40
From 4 - 6 years	20.80
From 7 - 9 years	14.60
From 10 - 15 years	15.30
More than 15 years	18.80
No response	1.30
Total	100.00

Table 4.2.1.4 indicates 11.80% of the respondents have less than 1 completed year of employment at UJ while 17.40% have from 1 - 3 completed years of service at UJ. Participants from 4 – 6 completed years at UJ accounted for 20.80% of the response while 14.60% of the respondents have from 7 – 9 completed years of employment. There are 15.30% who have from 10 – 15 completed years of employment and 18.80% of the respondents have more than 15 completed years of employment at UJ.

*Table 4.2.1.5: Nature of Employment of respondents*

	<b>Percent</b>
Permanent and full-time at 40 hours per week	79.20
Temporary and full-time for 40 hours per week	7.60
Contract	10.40
Other (please specify)	0.70
No response	2.10
Total	100.00

Table 4.2.1.5 indicates that the majority of the respondents (79.20%) are employed on a permanent and full-time basis at UJ with 7.60% on a temporary and full-time basis. There are 10.40% % of respondents on contract basis while 0.70% is employed in the “other” category. Respondents for the “other” category gave no details although provision was made for respondents to specify.



*Table 4.2.1.6: Highest qualification completed by respondents*

	Percent
Three-year diploma	
Three-year degree	
Four-year diploma (e.g. B Tech degree)	3.50
Four-year degree (e.g. Honours degree)	10.40
Masters degree	39.60
Doctorate	45.10
No response	1.40
Total	100.00

Table 4.2.1.6 indicates that there were no undergraduate respondents. Responses of 3.50% were those with a B Tech degree and 10.40% had Honours Degree. The difference between the four-year diploma and degree is that the B Tech degree is offered at Universities of Technology and Comprehensive institutions e.g. UJ while the Honours Degree is offered at universities. Those with completed Masters Qualification accounted for 39.60% of the response while 45.10% had a Doctoral qualification.

*Table 4.2.1.7: Year highest qualification was obtained*

	Percent
Prior to 2005	66.70
From 2005-2009	27.10
No response	6.20
Total	100.00

Table 4.2.1.7 indicates that the majority of the respondents had obtained their highest qualification prior to 2005 (66.70%) while 27.10% had obtained their qualification from 2005 – 2009.

*Table 4.2.1.8: Faculty affiliation of respondents*

	Percent
Faculty of Engineering & the Built Environment	21.50
Faculty of Humanities	22.20
Faculty of Management	22.20
Faculty of Science	31.90
No response	2.20
Total	100.00

Table 4.2.1.8 shows that 21.50% of the response was received from the Faculty of Engineering while there was a similar percentage (22.20%) response from Humanities and Management. The highest response was received from Science (31.90%).

*Table 4.2.1.9: Current position of respondents in the faculties*

	Percent
Junior lecturer	3.50
Lecturer	38.20
Senior lecturer	33.30
Associate professor	6.90
Professor	11.10
Other (please specify)	4.20
No response	2.80
Total	100.00

Table 4.2.1.9 shows that 3.50% of the respondents were junior lecturers while majority of the respondents were lecturers (38.0%) and 33.30% were senior lecturers. There was a 6.90% response from associate professors and 11.10% from professors. The response of 4.20% from the “other” category were Heads of Department, Junior Researcher, Part-time lecturer, and Post-Doc Researcher, Researcher, Senior Researcher, Student Mentor and Vice-Dean.

*4.2.1.10: Years of employment in current position*

	Percent
Less than 1 year	16.00
From 1 - 3 years	34.00
From 4 - 6 years	20.80
From 7 - 9 years	10.40
From 10 - 15 years	9.00
More than 15 years	7.60
No response	2.20
Total	100.00

Table 4.2.1.10 indicates that more than two thirds of the respondents (70.80%) are 6 years or less in their current position. One third of the respondents (27.00%) have between 6 and 15 or more years of employment in their current position.

#### 4.2.1.11: Level of students supervised from 2005-8.

	<b>Response</b>	<b>No-Response</b>	<b>Total %</b>
B Tech level	19.40	80.60	100.00
Honours level	32.60	67.40	100.00
Extra-curricular course level	9.00	91.00	100.00
Masters level (course-work)	18.00	82.00	100.00
Masters level (research master's)	42.40	57.60	100.00
Doctoral students	25.70	74.30	100.00

Table 4.2.1.11 indicates that at each of the level of students supervised 19.40% were at B Tech level while 32.60% were at Honours level (2<sup>nd</sup> highest). 9.00% of the respondents supervised at Extra-curricular course level and 18.00% supervised at Course Work Masters level. The highest level of students supervised was at the Research Master's level with 42.40% while 25.70% of the respondents supervised were at Doctoral level (3<sup>rd</sup> highest).

*Table 4.2.1.12: Number of students supervised from 2005-8*

	<b>Response</b>	<b>No-Response</b>	<b>Total %</b>
B Tech	23.60	76.40	100.00
Honours	36.80	63.20	100.00
Course-Work Masters	24.30	75.70	100.00
Research Masters	48.60	51.40	100.00
Doctoral	30.60	69.40	100.00

Table 4.2.1.12 indicates that 23.60% B Tech students and 36.80% of Honours students were supervised. The majority of the students (48.60%) supervised were at Research Masters' level. 24.30% students were supervised at Course Work Masters level while 30.60% were Doctoral students.

*Table 4.2.1.13: Registration for further qualification*

	<b>Percent</b>
Yes	28.50
No	70.10
No response	1.40
Total	100.00

Table 4.2.1.13 indicates that only 28.50% of the respondents are currently registered for further qualifications in contrast to 70.10% who are not.

*Table 4.2.1.14: Registration of qualification level*

	Percent
B Tech degree	0.70
Masters degree	9.00
Doctorate	27.10
No response	63.20
Total	100.00

Table 4.2.1.14 indicates that 0.70% of the respondents are registered for the B Tech Degree. 9.00% are registered for the Masters' level of study and 27.10% of respondents are registered for their Doctorate.

*Table 4.2.1.15: Are/were you a mentor?*

	Percent
Yes	50.00
No	47.20
No response	2.80
Total	100.00

Table 4.2.1.15 shows a response of 50.00% who are/were mentors while 47.20% did not mentor.

#### **4.2.1.16 Summary of Analysis**

Of the 144 responses received over 50% were males. The majority of the responses were from the white race category (72.20%) and 38.90% of the respondents were between the ages of 35 to 44 years. 50% of the respondents are employed for 6 years or less at UJ with 79.20% employed on a full time permanent basis. The majority of the respondents were qualified with a Doctorate Degree (45.10%). The highest response was received from the Faculty of Science with 32.60%. The majority of the respondents were lecturers (38.20%) followed by senior lecturers (33.30%). 70.80% are 6 years or less in their current position. The majority of the respondents supervised at Research Masters' level (42.40%).

The highest numbers of students supervised were Research Masters students (48.60%). There are 27.10% respondents that are currently registered for further qualifications of which 73.60% are registered for their Doctorate. 50% of the respondents indicated that they are/were mentors.

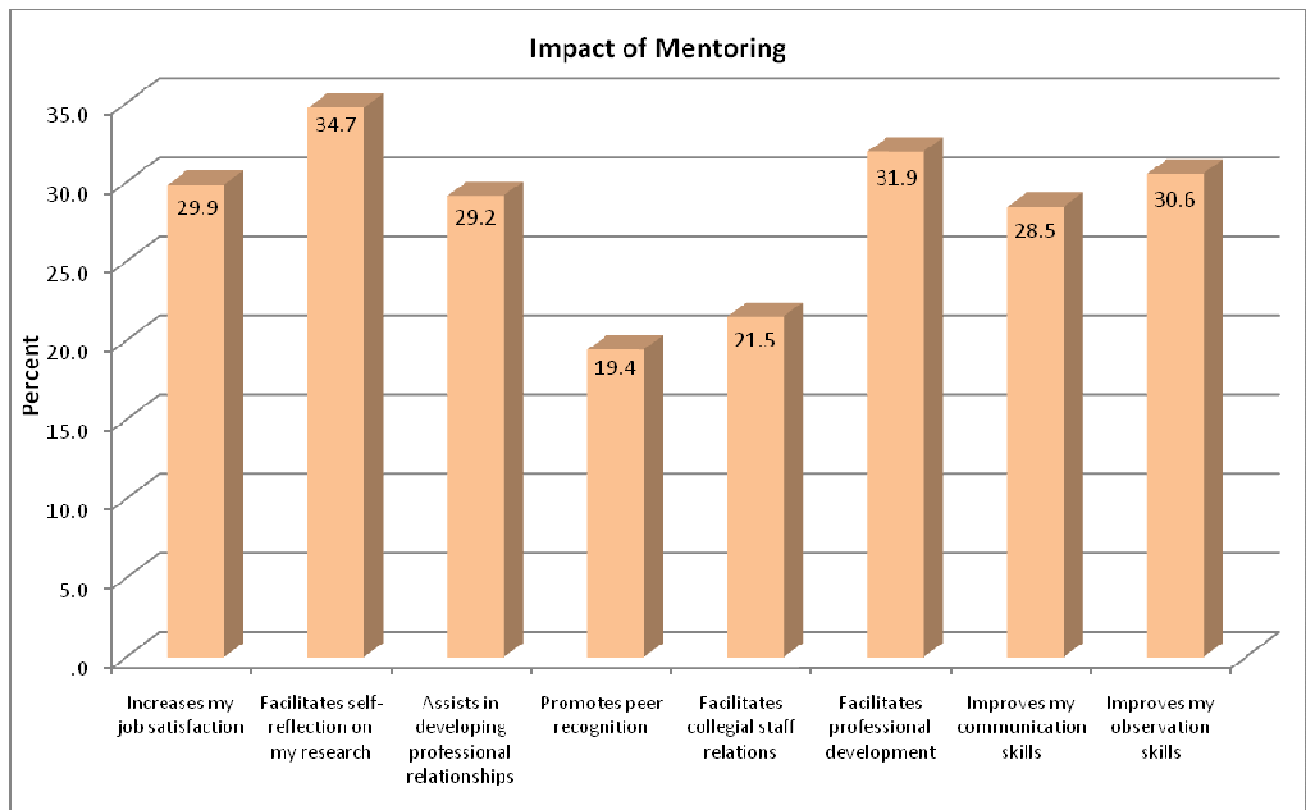
## SECTION B

### 4.2.2 Response from mentors

This section of the questionnaire was aimed at obtaining insight into the mentors' perception towards mentoring. The researcher also evaluated the profile of the mentors in terms of capacity to ascertain the institution's potential to offer REMP and on what basis did mentors undertake mentoring.

#### 4.2.2.1 Perceptions of mentors towards mentoring

The implementation and success or failure of a mentoring programme is dependent on the mentors' responses towards such a programme. It was therefore considered important to gauge the perceptions of the mentors as they can either promote or stifle the programme. Their perceptions were ascertained from responses received on what factors they considered were most beneficial or as constraints to them.



**Figure 6: Mentors' responses on the benefits of mentoring**

Figure 6 indicates that the benefits of REMP for mentors were on average 28% positive. Mentors benefitted especially in term of mentoring as follows:

- mentoring facilitates self-reflection on my research (34.7%);
- mentoring facilitates professional development (31.9%);
- mentoring improves my observation skills (30.6%);
- mentoring increases my job satisfaction (29.9%);
- mentoring assists in developing professional relationships (29.2%) and
- mentoring improves my communication skills (28.5%).

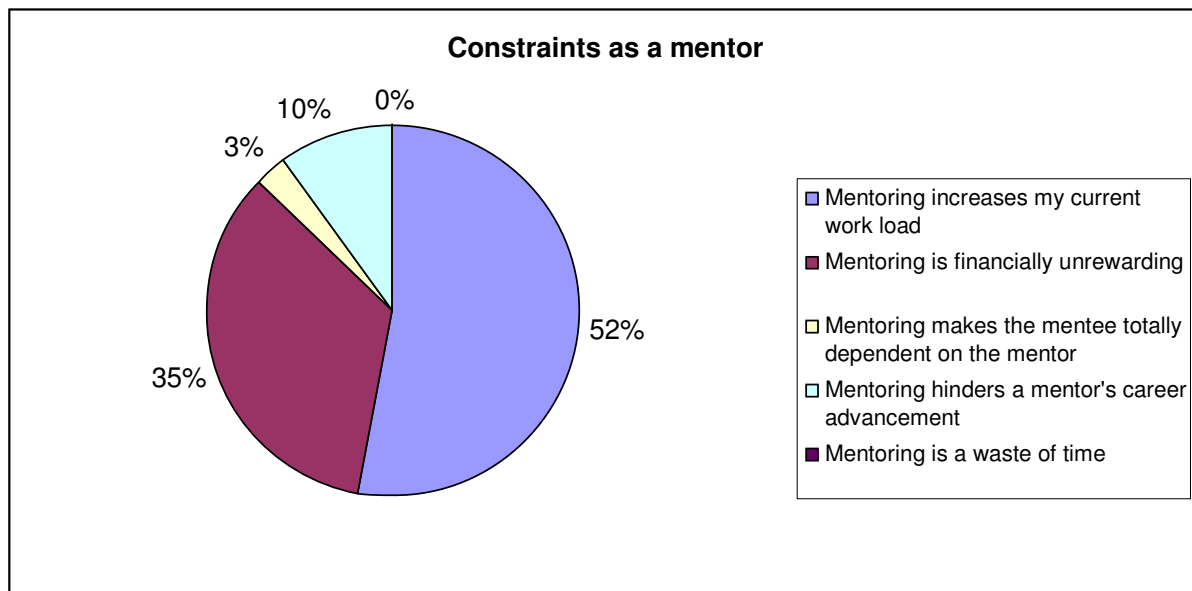
The benefits of mentoring to the mentor are in line with Erikson's theory (as quoted by Schulze 2009:34) in that the advantages for the mentors include personal satisfaction derived from seeing protégés develop into competent colleagues. The creative synergy often becomes a source of novel ideas that spark rejuvenation in the lives of the mentors. When mentors create new connections for students, they develop their own. They are also more motivated to remain up to date with new developments (Henry, Stockdale, Hall & Deniston 1994:38; Johnson 2007:12-12; Pierce 1998:4 as quoted by Schulze (2009:34)).

### ***Other benefits as a mentor***

A few mentors indicated the following as other benefits experienced as a mentor. However, it did not make a significant impact on the overall data analysis. Each benefit was stated by only 0.70% of the mentors:

- contribution to skills development;
- form of personal social investment;
- I learn more about myself;
- in order to train postgraduate students I find mentoring is necessary;
- increase skills development and knowledge transfer from experienced academics to upcoming profession;
- increases research group efficiency;
- it assists to build capacity in South Africa;
- M Tech mentoring will result in subsidising of research in the Department;
- personal development and contacts with industry;
- promotes the overall quality of the research within a group and at a university;
- the most important aspect – it helps the students and

- watching students grow and develop – about them, not me.



**Figure 7: Constraints as a mentor**

While the mentors experienced the benefits of mentoring from the mentoring process, they also indicated some constraints that affected them as mentors as indicated in Figure 7.

The two important points of concern were:

- mentoring increases my current work load (52%) and
- mentoring is financially unrewarding (35%).

The issue of work load is also indicated in the questionnaire, Section D, Q.D12 – “*The workload becomes too much.*” **Annexure B.**

However, these two findings are qualified by the fact that none of the mentors stated that mentoring was a waste of time (0%).

### ***Other constraints as a mentor***

A few mentors indicated the following as other constraints experienced as a mentor. However, it did not make a significant impact on the overall data analysis. Each constraint was stated by only 0.70% of the mentors:

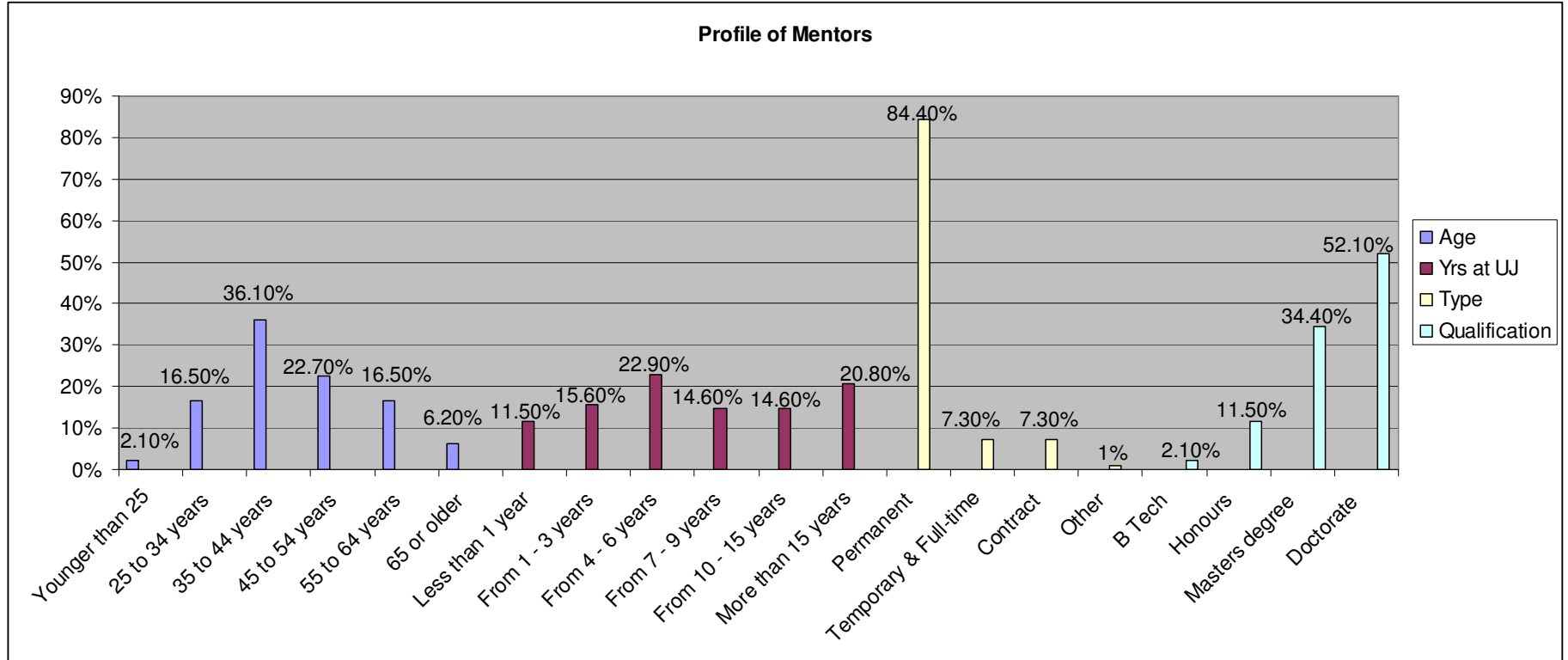
- I have too much work, especially with undergraduate teaching and so mentoring does add to the load;
- it is a huge responsibility and it leads to reluctance in taking on new students;
- low levels of acceptance of benefit by mentees;
- no understanding of the role that technological research in my field plays - only academic research;
- stipends for mentees are not attractive;
- the administrative rules and regulations are a nightmare. It feels like a paper war;
- the five options do not fit the question and
- the physical space for graduate students at UJ is wholly inadequate. Inadequate seminar room space.

#### **4.2.2.2 Profile of mentors in terms of capacity**

In order to ascertain the institution's potential to offer a REMP, it was necessary to determine the attributes of good mentors. An analysis was done on the mentors' profiles in terms of age, qualification, and years and type of employment, years of experience as a mentor, NRF ratings and publications.

A cross analysis was also done on mentors in terms of age and qualification and in terms of age per faculty.

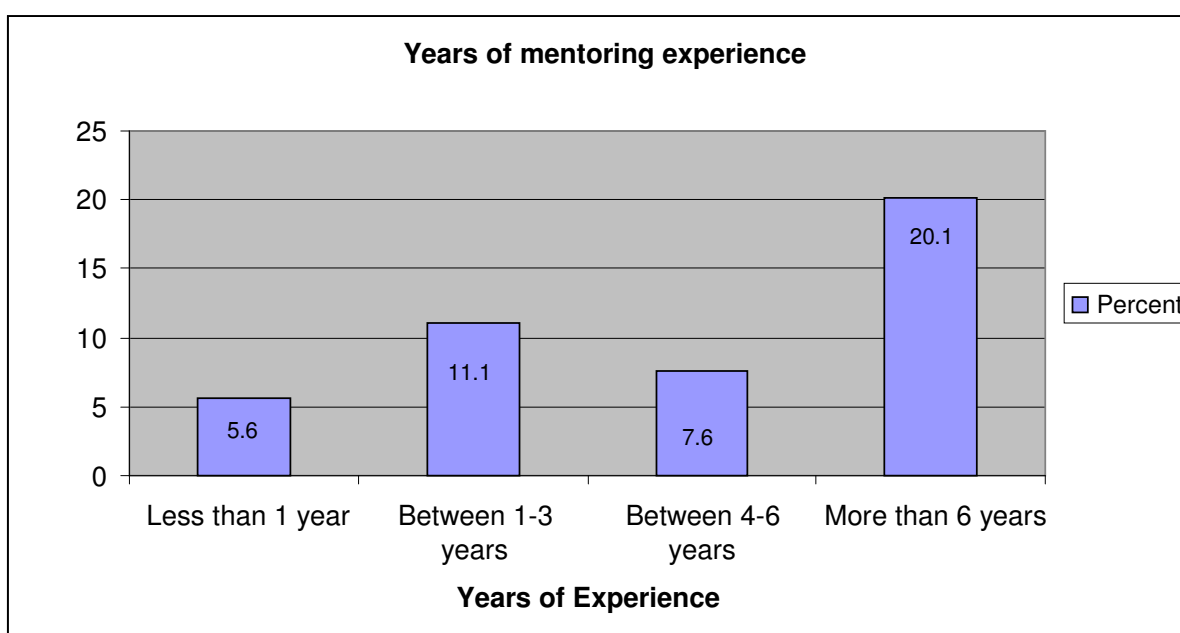




**Figure 8: Profile of mentors**

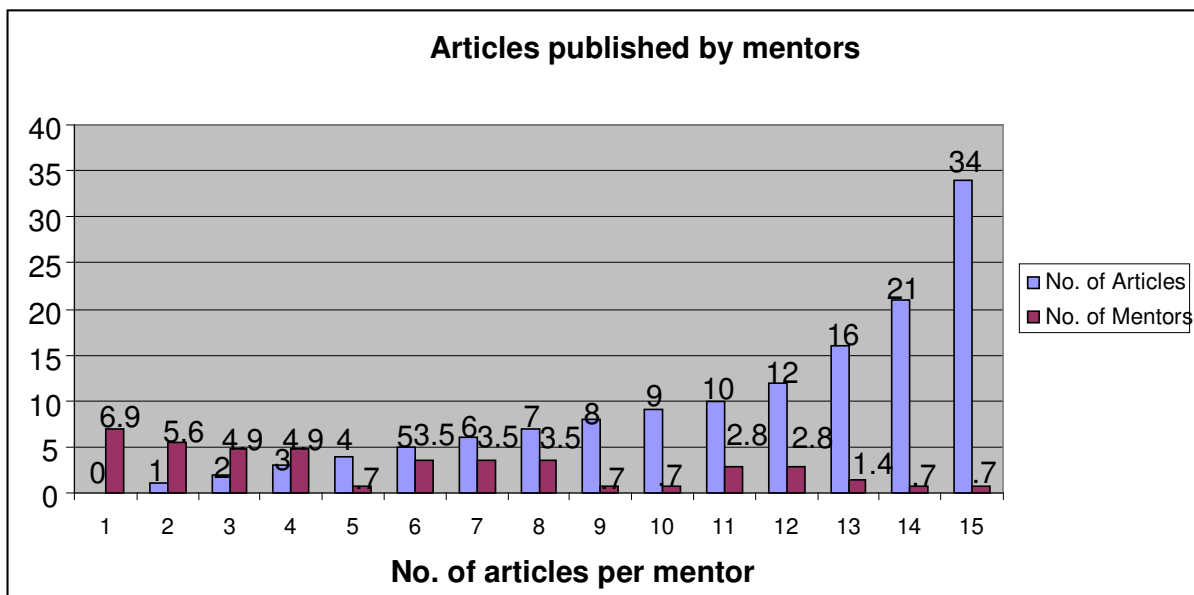
Figure 8 indicates the overall profile of the mentors as follows:

- the majority of the mentors are between the 35-44 age groups (36.10%). This suggests that many of the mentors are active in research and can support research and development;
- with 84.40% of the mentors employed on a permanent basis, it suggests that the institution need not be severely impacted should a high turn-over occur;
- 22.90% of the mentors having between 4-6 years of employment at UJ suggests that the mentors should already be au-fait with the culture of the institution and
- in order to be a good mentor it is important to have the highest qualification i.e. a Doctorate. Data shows that majority of the mentors do have a Doctoral qualification suggesting that the institution has mentors.



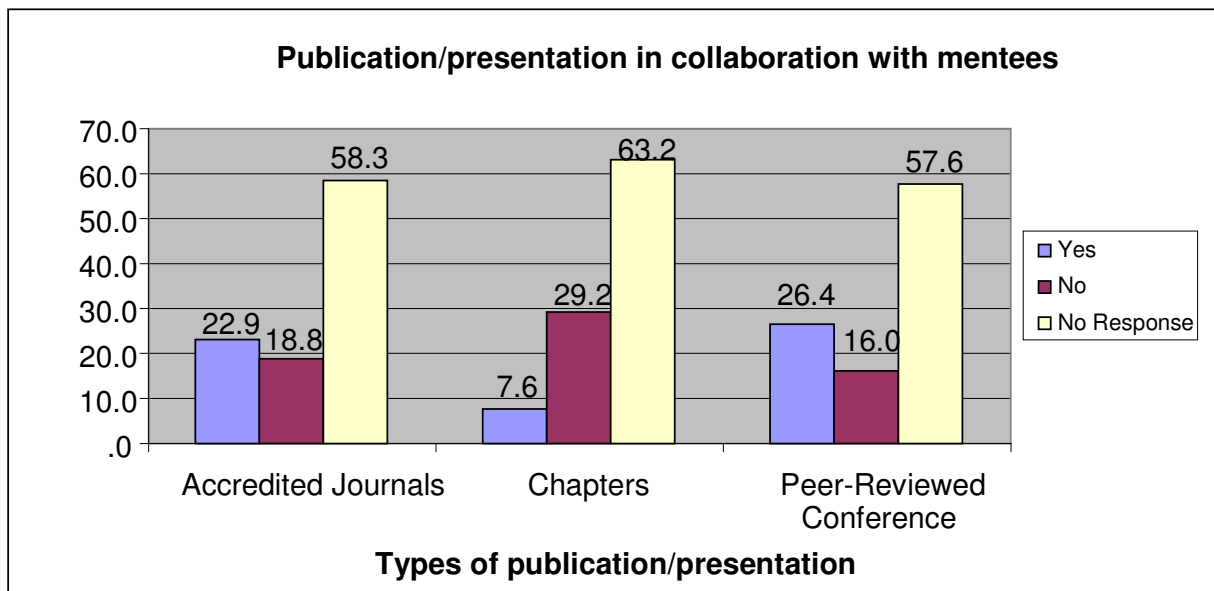
**Figure 9: Years of mentoring experience**

35.4% of the mentors are of the opinion that it takes between 1-3 years to mentor a researcher (**Table 4.2.2.3.2**). Figure 9 indicates that there are mentors who have between 1-3 years of experience (11.1%) with some mentors having more than 6 years of experience (20.1%). Hence, there is capacity in terms of experienced mentors to implement a REMP.



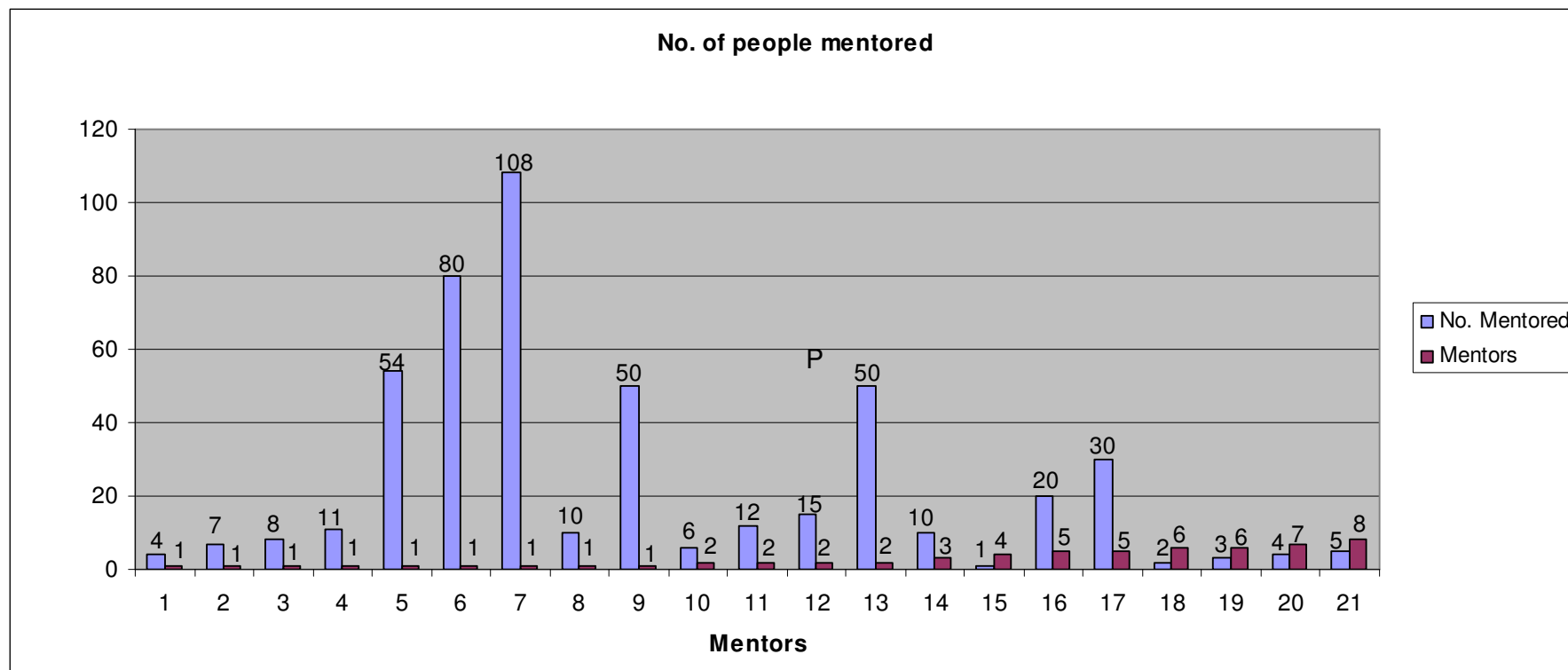
**Figure 10: Publication of articles in accredited journals by mentors**

Figure 10 indicates that 6.9% of the respondents did not publish in accredited journals while 19.4% of the respondents published 5 or fewer articles and 16.6% published from 6 to 34 articles. A significant finding is that 0.70% mentor published 21 articles and another published 34 articles.



**Figure 11: Publications by mentors in collaboration with mentees**

Figure 11 indicates that overall 22.9% of mentors have published with mentees in accredited journals while 7.6% published chapters in books and 26.4% presented papers at peer-reviewed conferences. This data indicates that mentoring is not only a question of throughputs of graduates but it also involves publication outputs.

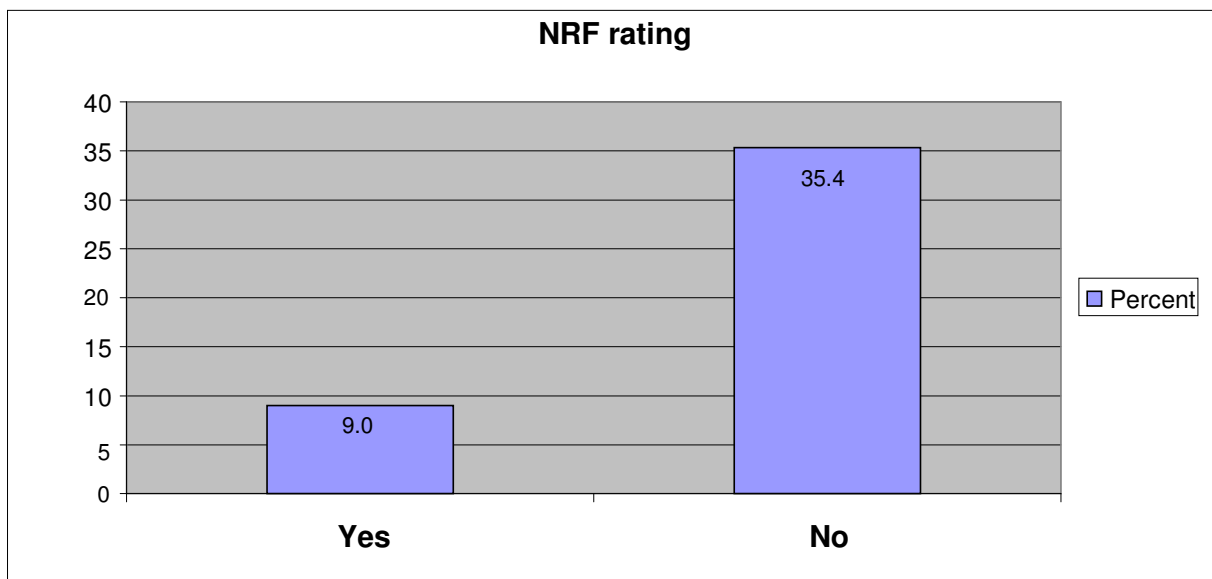


**Figure 12: Number of people mentored by a single mentor**

Figure 12 indicates on average the number of people that were mentored by a single mentor as follows:

- between 0 – 8 (25%) and
- more than 10 – 108 (18.06%).

The significant finding is that in some cases a single mentor has mentored a minimum of 50 people with one mentor mentoring up to 108 people. There are also two mentors who have mentored up to 50 people and 5 other mentors have mentored up to 30 people. This reiterates the findings that there is capacity to mentor.



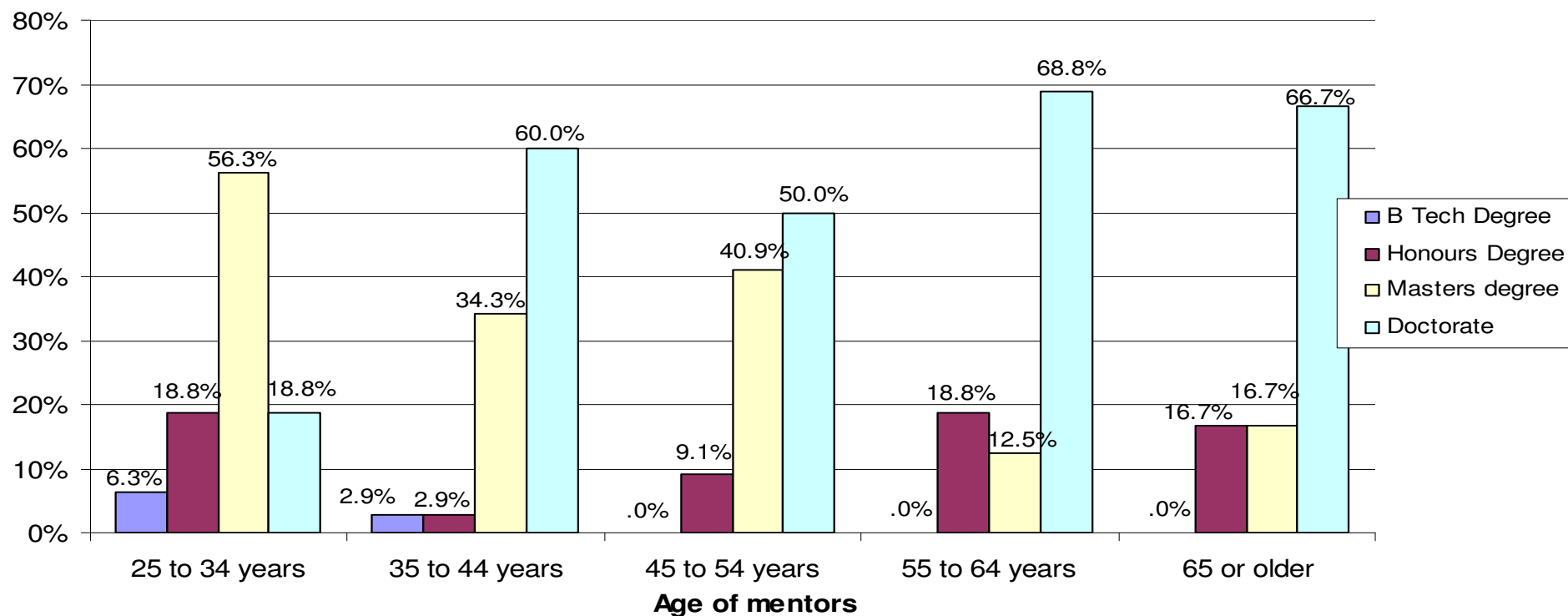
**Figure 13: NRF rating of mentors**

Figure 13 indicates that only 9.00% of the mentors are NRF rated researchers in comparison to 35.40% who are unrated researchers. With majority of the mentors (52%) stating that one of the constraints of mentoring was that ***it increases their current work load*** (Figure 7) could suggest that mentors do not have the time to develop their career. This is confirmed by 10% of mentors stating that ***mentoring hinders a mentor's career advancement*** (Figure 7). This factor could be one of the possible reasons for a low percentage of rated researchers.

Overall, the profile of the mentors indicates that a majority of the mentors (20.10%) have more than 6 years of mentoring experience and on average 16.6% of the mentors have published between 6 to 34 articles in accredited journal. 19% of the mentors published in collaboration with their mentees.

Although the overall analysis indicates that institutionally there are mentors who can mentor, a cross-analysis of mentors was done in terms of age and qualifications (Figure 14) and in terms of age per faculty (Figure 15). The purpose of this analysis was to ascertain the potential of the institution and faculties' ability to sustain a possible formal REMP in view of long-term capacity.

**Highest qualification of mentors in terms of "age"**

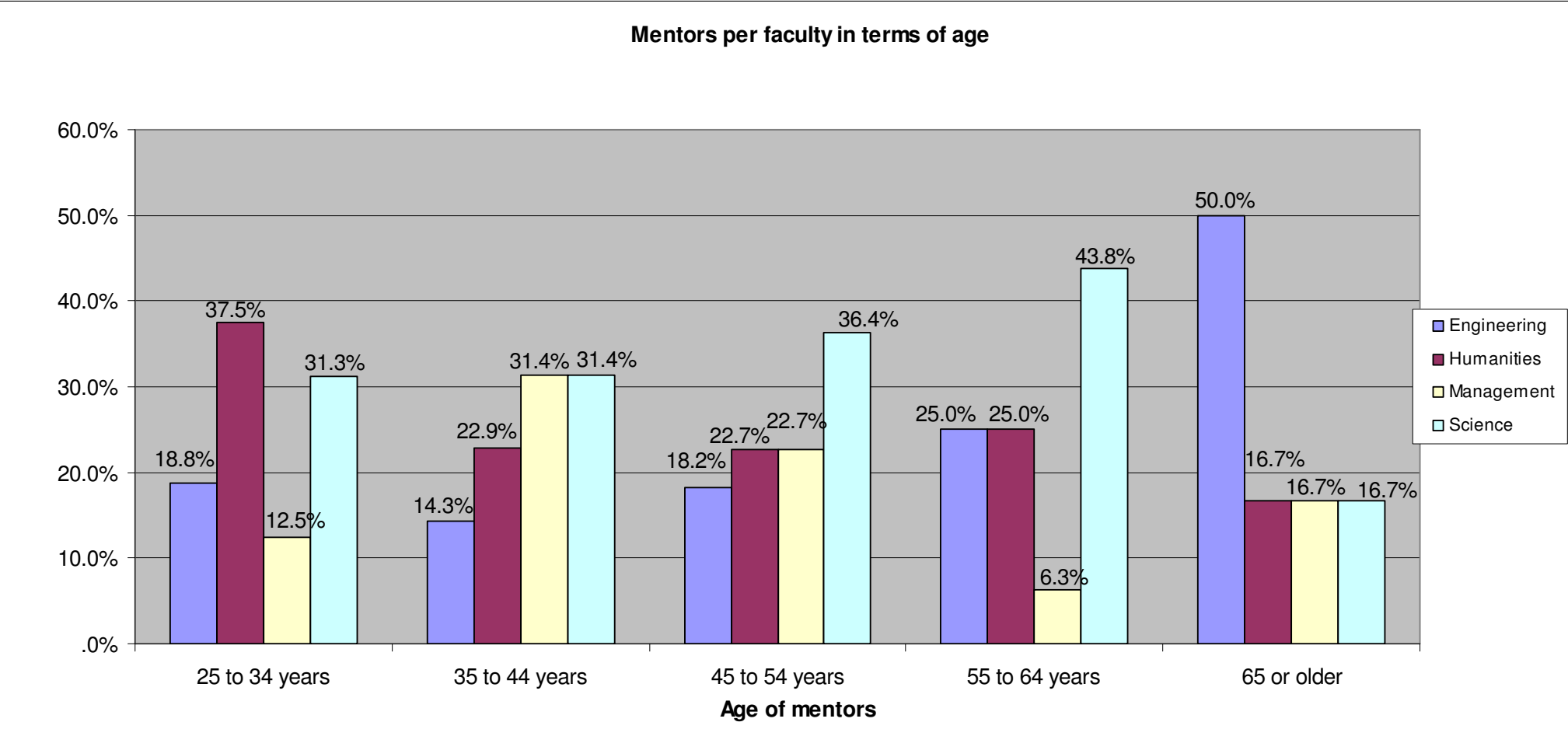


**Figure 14: Highest qualification of mentors in terms of age**

Figure 14 reflects that over 60% of the mentors have Doctoral qualifications and are 55 years and older. The data also indicates that there are mentors with Doctorates between the age groups of 35-44 years (60%) and 45–54 years (50%), while 56.3% of the mentors have a Masters' qualifications that are between the 25-34 years age category.

Hence, in the long term the institution has the capacity of mentors to sustain a REMP even though over 66% are retired or soon to be retired mentors. However, this soon to be depleted capacity can be replaced by those with Doctorates in the younger age groups.





**Figure 15: Mentors per faculty in terms of age**

Figure 15 indicates that the highest number of mentors are in the Faculty of Engineering and are 65 years or older, followed by the Faculty of Science having its highest mentors who are between in the 55–64 years age group.

In the Faculty of Humanities the highest number of mentors is between 25-34 years 37.5% while in the Faculty of Management, the highest numbers of mentors are in the 35-44 years age group.

Figure 15 also shows that there are mentors in the other age categories which re-affirm that there is a capacity in terms of mentors. However, data suggests that the Faculties of Engineering and Science may experience problems in sustaining a REMP if mentors in the other age group are not adequately developed to replenish depleted capacity.

In response to the questionnaire, Section C, Q.C7, a comment “*lack of available mentors*” expressed, indicates that this available capacity needs to become more evident within the department/faculty. **Annexure B.**

Although data indicates there are mentors with capacity to mentor, the concern is that majority of the mentors are retired or reaching retirement age. Hence, these statistics confirms the literature reviewed which highlighted some hindering factors contributing to South Africa’s slow progress in meeting global standards in terms of research, one of which is as follows:

- “One of the major concerns is that South Africa is experiencing an ageing and shrinking scientific population and that the human resource is not being adequately developed and renewed and that the key research infrastructure is composed of people who will soon retire” (Department of Science and Technology, 2002:21).

This was also confirmed in an interview with Faculty D in response to a question on staff capacity to mentor other staff – *The profile of the faculty currently is that there are a number of very senior staff members close to retirement, who are strong researchers.* **Annexure G –Q.6 (b).**

This concern is further highlighted by van der Walt (2010b:1) who has indicated that the majority of the current top NRF rated researchers at UJ have either reached retirement

age or are due to retire within the next five years. In order to address the reduction in rated researchers and consequent decrease in the publication output, it is suggested that a structured programme be implemented to build and increase the research capacity at UJ.

#### 4.2.2.3 Process of mentoring

In order to consider implementing a REMP it was important to ascertain the basis on which the mentors mentored and the time taken for the process.

*Table 4.2.2.3.1: Basis of mentoring*

	<b>Response</b>	<b>No Response</b>	<b>Total %</b>
A formal basis	27.80	72.20	100.00
An informal basis	27.10	72.90	100.00

*Table 4.2.2.3.2: Time needed to mentor a researcher: mentor's view*

	<b>Percent</b>
Less than 1 year	4.20
Between 1-3 years	35.40
Between 4-6 years	2.10
No response	58.30
Total	100.00

*Table 4.2.2.3.3: Whether mentors had a choice in choosing mentees*

	<b>Percent</b>
Yes	36.10
No	6.90
No response	56.90
Total	99.90

Tables' 4.2.2.3.1-3 indicates that overall mentors are experienced in both formal and informal mentoring and that it takes a mentor between 1 – 3 years to mentor a researcher. The mentors also had the option to choose whom they were going to mentor.

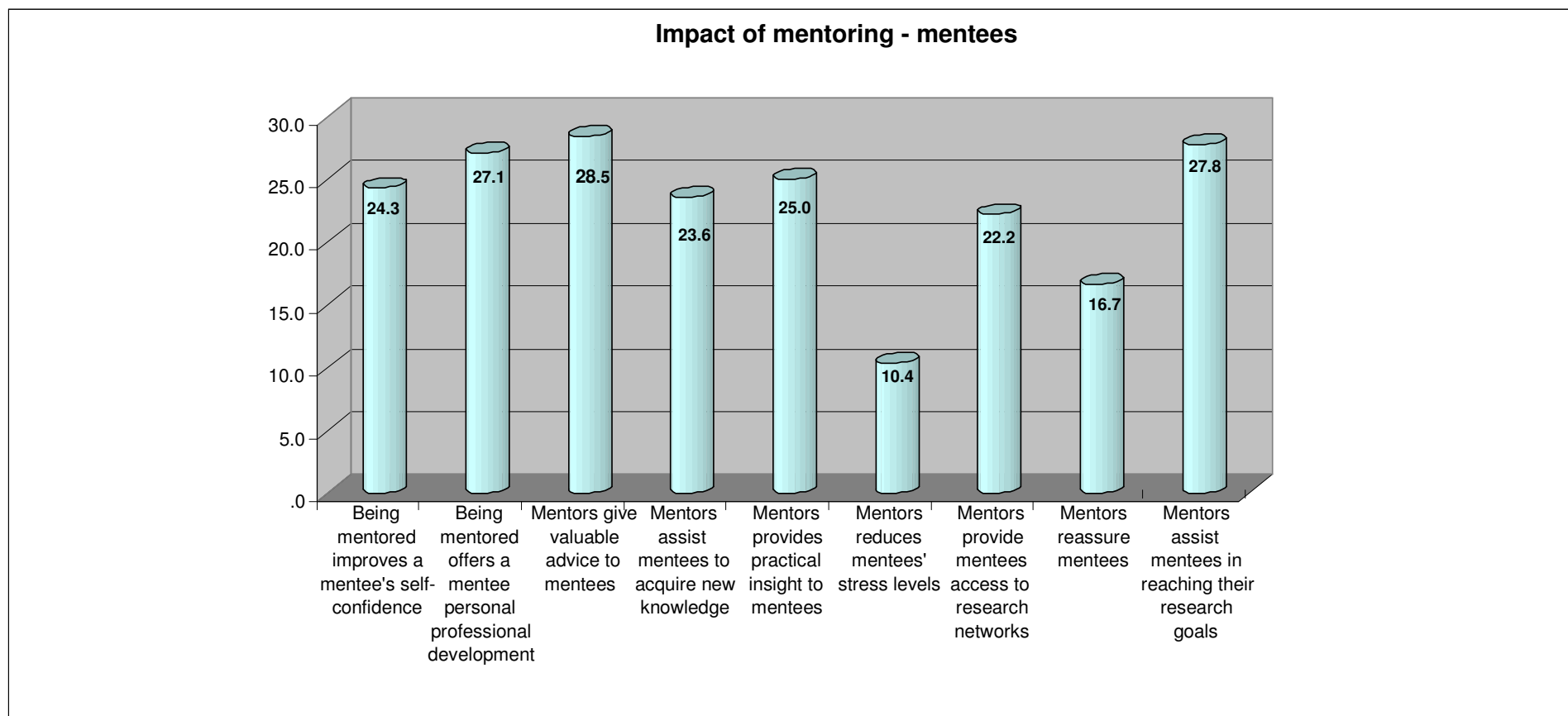
## **SECTION C**

### **4.2.3 Response from mentees**

This section of the questionnaire was aimed at assessing mentees' experiences and opinions about mentoring. In addition, the researcher looked at the profile of the mentees as a matter of interest to ascertain if these mentees, once through the process of mentoring, could be possible replacements for those retired or soon to be retired mentors. The process of being mentored was also explored. According to Lourens (as quoted by the NRF (2007c:14)) "the age profile of the rated researchers in 2006 indicated that the majority of rated researchers are within the 40-49 (32.9%) and 50-59 (36.2%) age categories. 19.5% were 60 years and older."

#### **4.2.3.1 Perceptions of mentees towards mentoring**

The success or failure of a REMP is not only dependent on the mentors but on the mentees as well. It is therefore considered appropriate to assess the mentees' experiences and opinions about mentoring which is based on what the mentees viewed were benefits and constraints to them when being mentored.



**Figure 16: Mentees' perception towards mentoring**

Figure 16 indicates that the benefits of REMP for mentees were on average 23% positive. Mentees benefitted especially in terms of mentoring as follows:

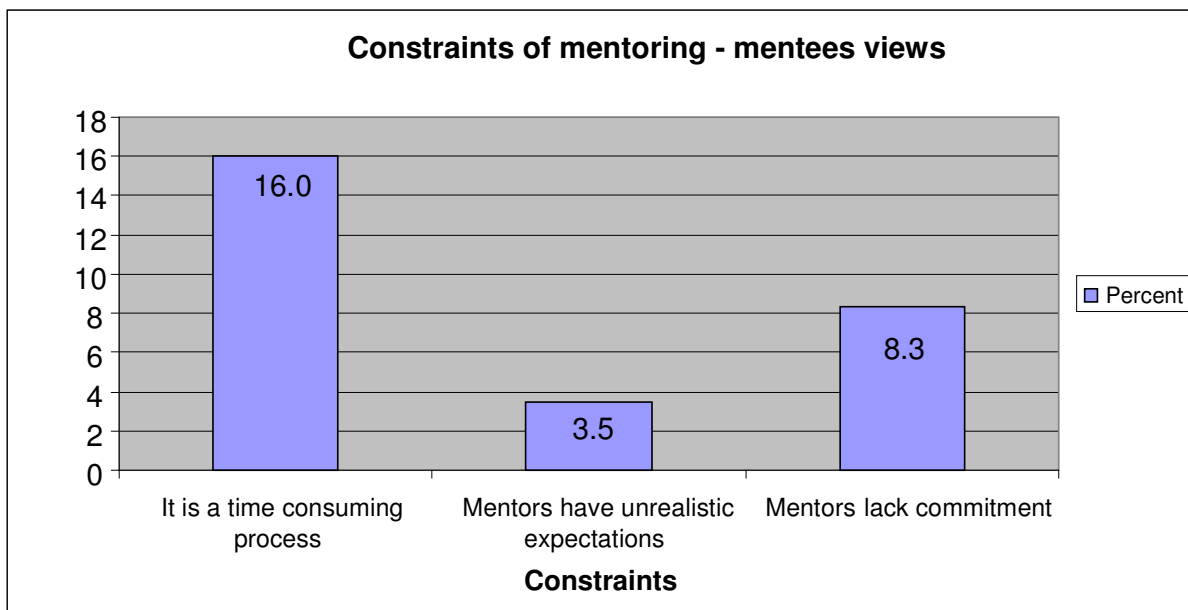
- mentors give valuable advice to mentees (28.5%);
- mentors assist mentees in reaching their research goal (27.8%);
- mentoring offers a mentee personal professional development (27.1%);
- mentors provide practical insight to mentees (25.0%);
- mentoring improves a mentee's self-confidence (24.3%);
- mentors assist mentees to acquire new knowledge (23.6%) and
- mentors provide mentees access to a research network (22.2%).

A common benefit experienced by the mentors (31.9%) and mentees (27.1%), was that the process of mentoring and being mentored contributed to their "*personal professional development*" as indicated in Figures 6 and 16.

#### ***Other benefits as a mentee***

A few mentees indicated the following as other benefits experienced as a mentee. However, it did not make a significant impact on the overall data analysis. Each benefit was stated by only 0.70% of the mentees.

- personal growth towards the model of a researcher you want to become;
- provide a shoulder to cry on. Provide practical examples. Help to unblock mental blocks and
- reduction of time to become a productive researcher. Reduce research barrier to entry.



**Figure 17: Constraints as mentees**

Although mentees experienced the benefits of being mentored, some constraints were also expressed as indicated in Figure 17. An important finding was that:

- 16% of the mentees were of the opinion that mentoring is a time consuming process.

#### ***Other constraints as a mentee***

A few mentees indicated the following as other constraints experienced as a mentee. However, it did not make a significant impact on the overall data analysis. Each constraint was stated by only 0.70% of the mentees.

- balance with work life;
- funding often at inadequate levels;
- I think it depends entirely on the mentor. Good mentors will provide good mentorship;
- it takes commitment, time and close collaboration from both sides. Work pressure can ruin all these;
- lack of available mentors;
- reconciliation of standards at the beginning of the process;

- seniors prefer to mentor those of the same religion, sex or ethnicity (due to lack of time and reward?) and
- work load of both mentor and mentee.

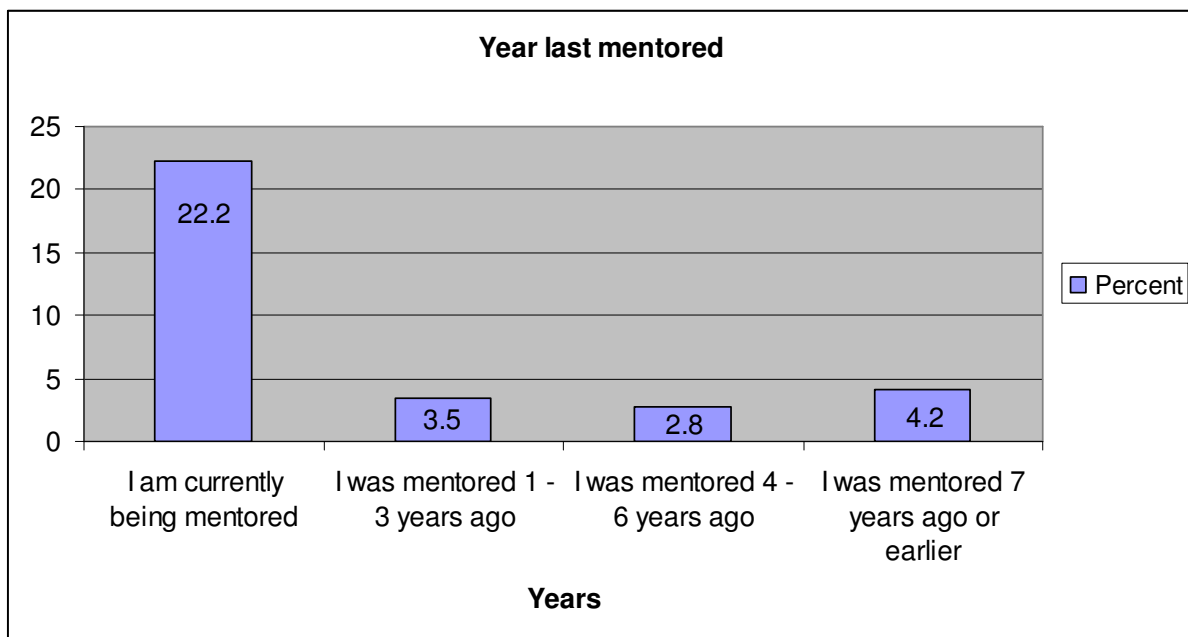
Although only 0.70 respondents highlighted the work load of the mentor and mentee, one of the findings of the NRF's piloted TTK mentoring programme showed that both the mentors' and mentees' work load i.e. supervision, teaching, administrative duties, management tasks and departmental meetings, have impacted on the mentees' research output. Lack of funding to hire temporary staff increased mentees' teaching load and they found it difficult to keep their research, mainly publications, momentum going (NRF, 2006:13).

#### **4.2.3.2 Profile of mentees**

The profile of the mentees was analysed as a matter of interest to the researcher to ascertain if the mentees could be possible replacements for mentors who are retired or will soon retire.

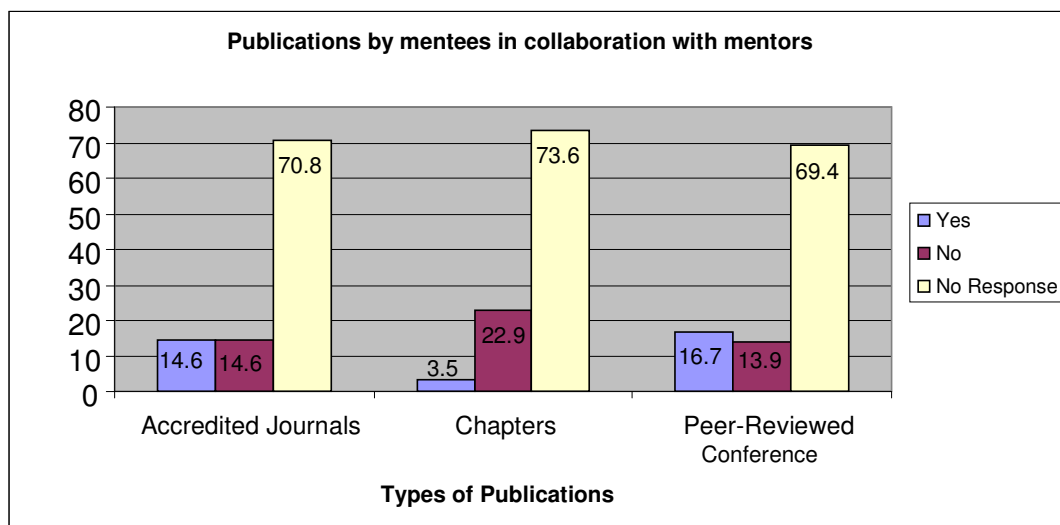
The profile was based in terms of when the mentee was last mentored, number of articles published in collaboration with mentors and as single authors, NRF rating, age, qualification, years of service, type of employment and the faculty affiliation.





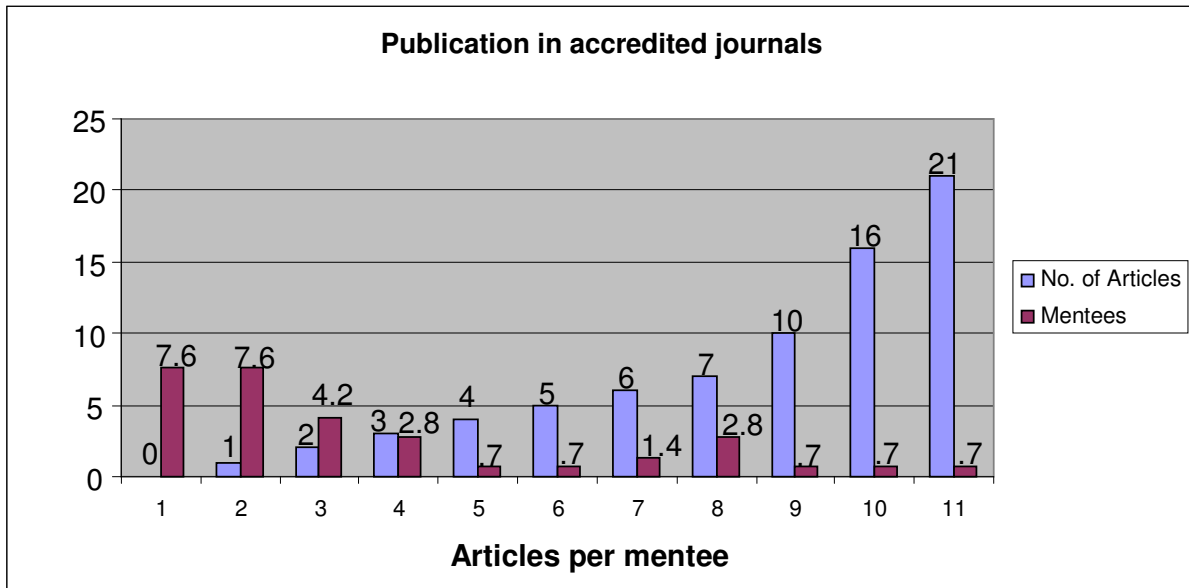
**Figure 18: Respondent's last year of being mentored**

Figure 18 indicates that 22.2% of the respondents are currently being mentored. These respondents could be the possible future mentors to replace the depleting source of mentors.



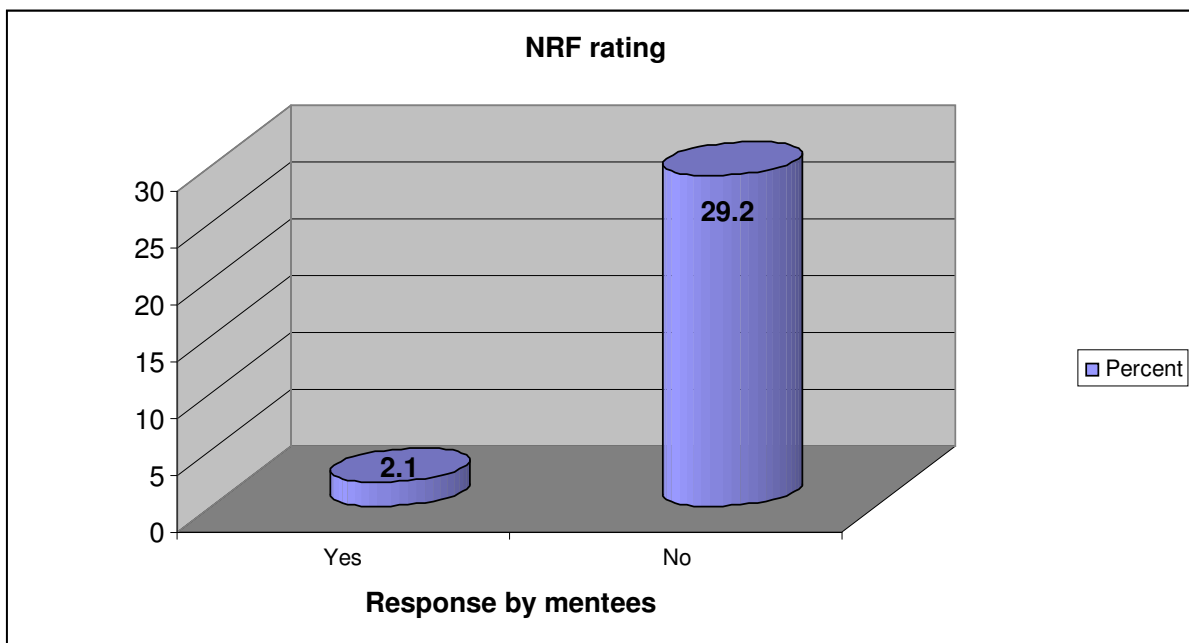
**Figure 19: Number of publications by mentees in collaboration with their mentors**

Figure 19 indicates that 14.6% of the mentees published in accredited journals; 3.5% in book chapters and 16.7% in peer-reviewed conferences in collaboration with their mentors.



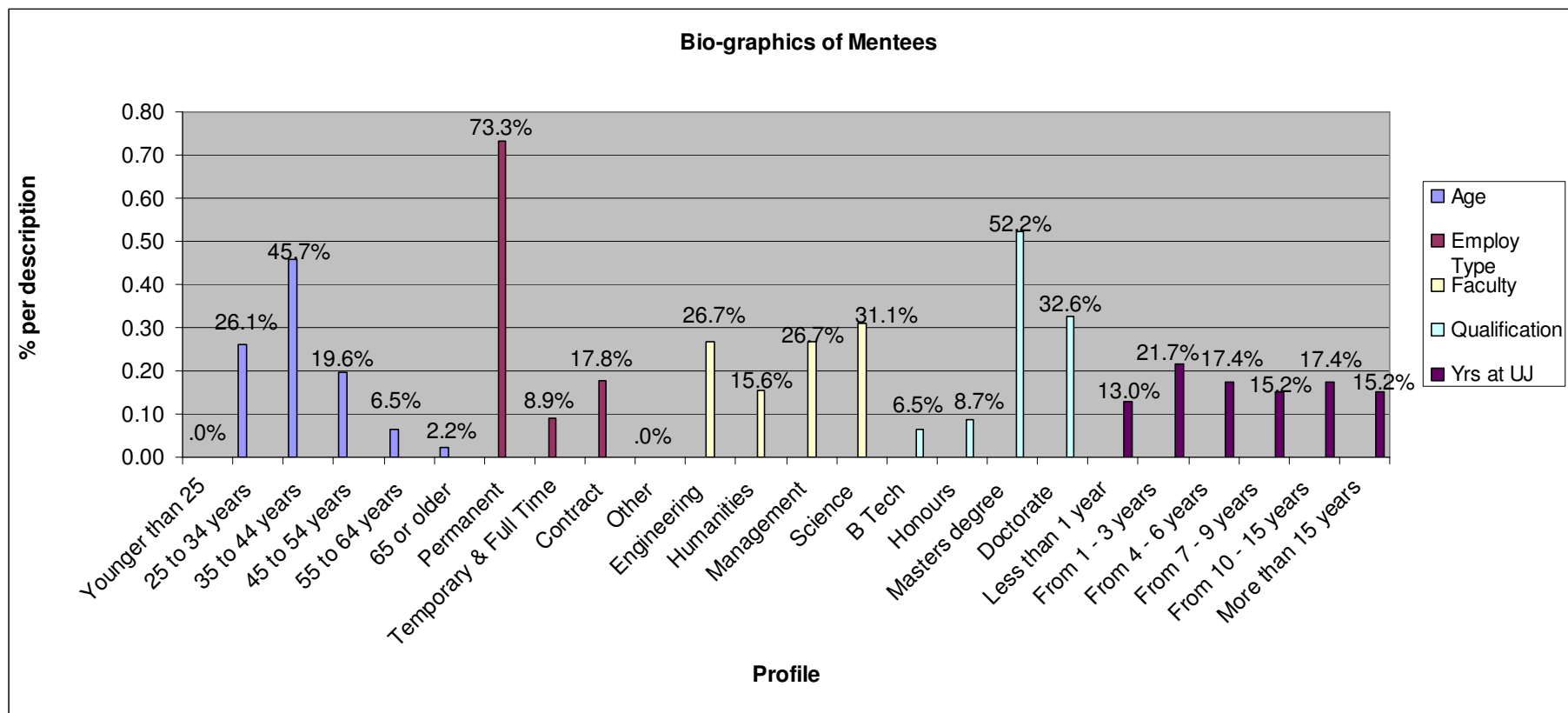
**Figure 20: Number of publication as single authors**

Figure 20 shows that 22.6% of mentees have published 5 or fewer articles in the last 5 years with only 6.3% of the mentees publishing between 6 to 21 articles as single authors.



**Figure 21: NRF rating of mentees**

Figure 21 shows that of the 31.3% mentees that responded, only 2.1% were NRF rated researchers and 29.2% were unrated.



**Figure 22: Bio-graphics of mentees**

Figure 22 indicates that the profile of the mentees who responded 45.7% were between the 35-44 years age group who are permanent staff members (73.3%) with Masters' degree (52.2%) and have between 1-3 years service at UJ (21.7%). The highest numbers of mentees was in the Faculty of Science (31.1%).

Based on this profile, the researcher is of the opinion that these mentees could be possible replacement to those mentors reaching retirement or have retired. This is attested in Section D, Q.D11 of the questionnaire – *“will increase output; will create more mentors for the next group; lighten the burden on the few [who] do.”* **Annexure B.**

In conclusion there was an overall positive response by mentees on the benefits of mentoring with a few negative views which did not make a significant impact on the overall data analysis.

#### **4.2.3.3 Process of mentoring: mentees' views**

*Table 4.2.3.3.1: Mentees views on time needed for mentoring*

	<b>Percent</b>
Less than 1 year	6.90
Between 1 – 3 years	16.00
Between 4 – 6 years	4.20
More than 6 years	5.60
No response	67.30
Total	100.00

*Table 4.2.3.3.1: Basis of mentoring*

	<b>Percent</b>
A formal basis	22.20
An informal basis	11.80
No response	66.00
Total	100.00

Tables' 4.2.3.3.1-2 indicates that the majority of the mentees are of the view that it takes between 1-3 years to be mentored (16.0%) and were mentored on a formal basis (22.2%).

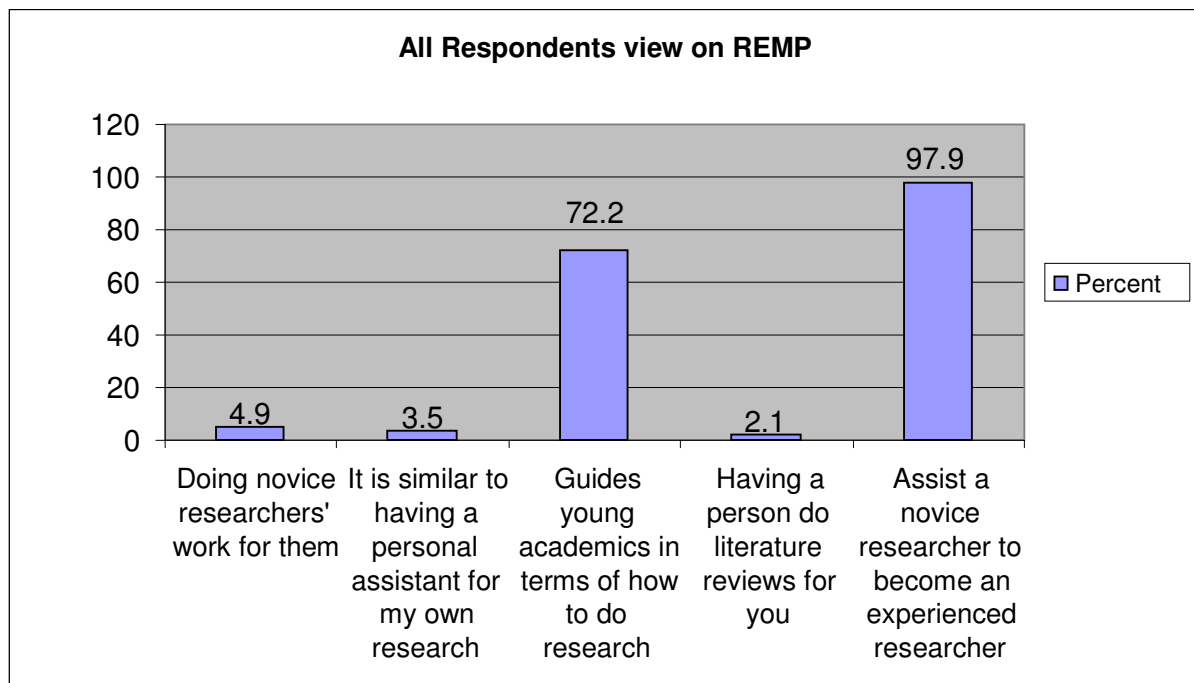
## SECTION D

### 4.2.4 General response

This section of the questionnaire was aimed at obtaining information about academic employees (excluding temporary academics) views on a research mentorship programme at UJ.

#### 4.2.4.1 Aims, advantages and disadvantages of REMP

To consider the possibility of implementing REMP, it was necessary to ascertain the views of all respondents on what they believed were the aims, advantages and disadvantages of REMP.

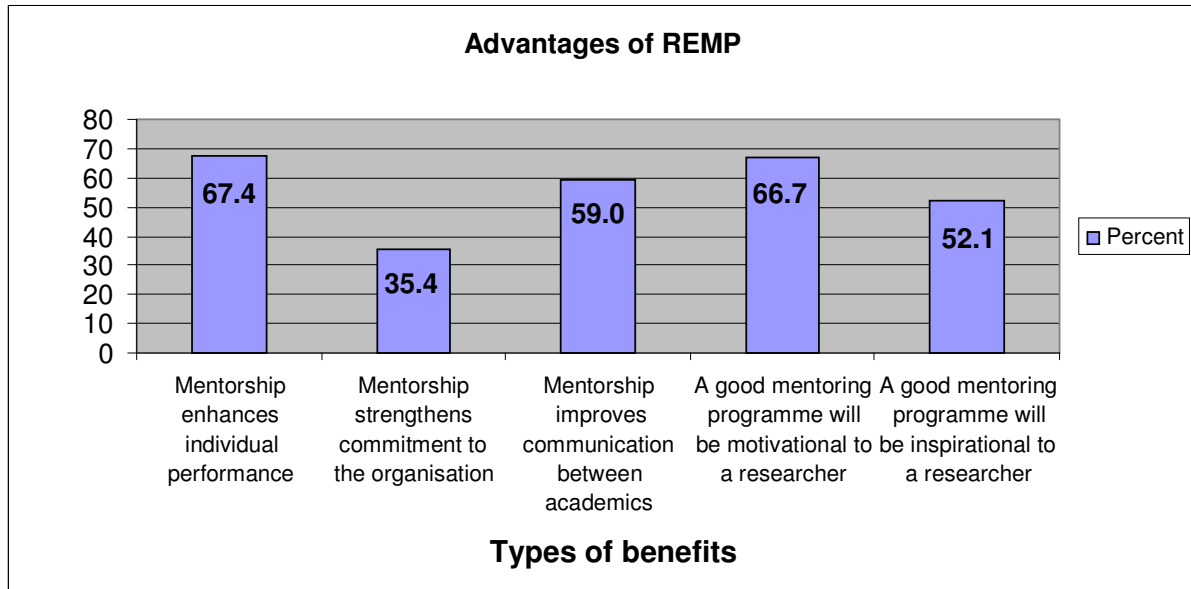


**Figure 23: Aims of REMP**

Figure 23 reflects a positive response on the aims of REMP with an important finding:

- 72.2% of all the respondents believed that REMP guide young academics in terms of how to do research and

- 97.9% are of the view that REMP assist a novice researcher to become an experienced researcher.



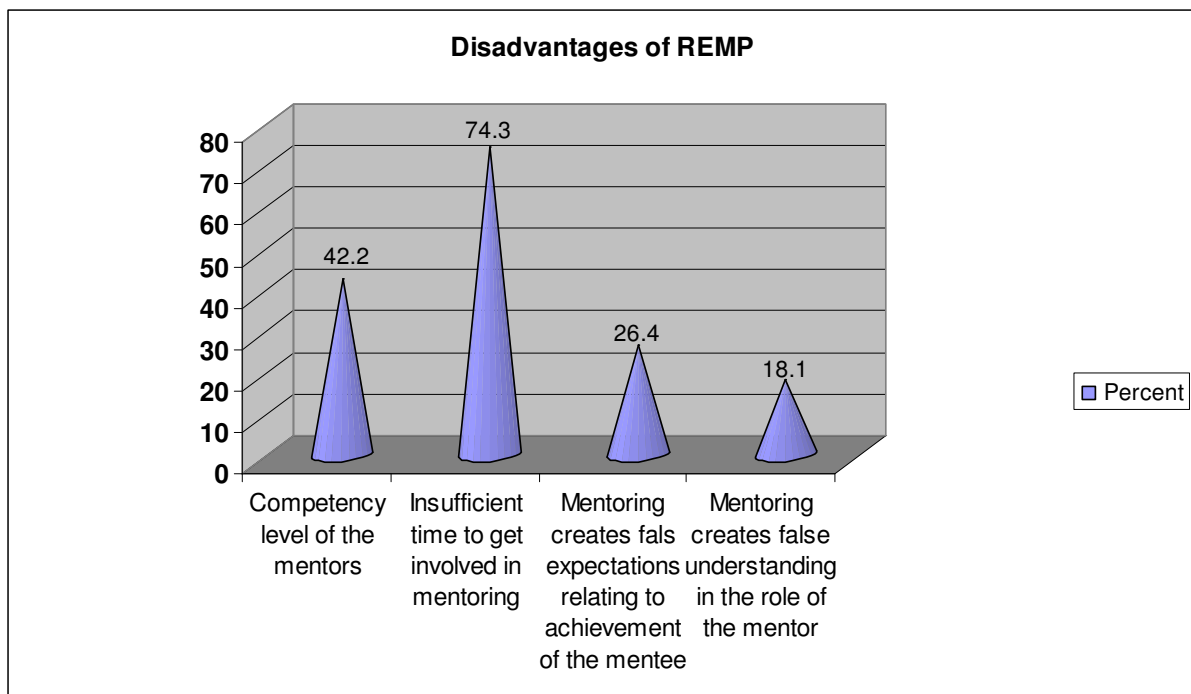
**Figure 24: Advantages of REMP**

Figure 24 indicates that the advantages of REMP viewed by all respondents were on average 56% positive. The highest rated benefits viewed in terms of REMP are as follows:

- mentorship enhances individual performance (67.4%);
- a good mentoring programme will be motivational to a researcher (66.7%);
- mentorship improves communication between academics (59.0%) and
- a good mentoring programme will be inspirational to a researcher (52.1%).

This is further supported by comments expressed in the questionnaire:

- section D, Q.D11, *"It will improve efficiency at the institution"; "Mentorship ensures focused, quality research."* and
- section D, Q.D13, *"Mentoring is good for the University and it will increase the number of research publications."* **Annexure B.**



**Figure 25: Disadvantages of REMP**

While respondents expressed the advantages of REMP, some of the disadvantages were also highlighted as indicated in Figure 25.

The two important points of concern were:

- insufficient time to get involved in mentoring (74.3%) and
- competency level of the mentors (42.2%).

The issue of ***insufficient time to get involved in mentoring*** agrees with the interviewee in Faculty B – “*Time is a real challenge. People are very time deficient.*”

#### **Annexure E – Q.4.**

Time constraints as a disadvantage is also evident in Schulze’s study (2009: 41) where reference was made to the difficulty experienced in relation to time constraints. It was felt that for efficient mentoring, time is needed. Interviewees recommended that mentorship be taken into account during work allocation. This would improve the accessibility of mentors as pointed out by Borisoff (1998) (as quoted by Schulze (2009:41)). This recommendation was also made in Section D, Q.D13 of the questionnaire – “*Mentorship should be confined to work hours.*” **Annexure B.**

On the matter of the **competency level of the mentors**, this view was posed to the interviewees of the sample faculties:

**6 (a) From the survey as mentioned in point 3 above 42.4% believed the “Competency level of mentors” may be a disadvantage to REMP. In your opinion what attributes should a mentor of research have?**

From the interviews it was highlighted that a mentor would not be a mentor if he/she did not have certain attributes. Some comments from the interviewees were as follows:

Faculty B – *“How can you call someone a mentor if they are not competent?”*

**Annexure E – Q.6 (a).**

Faculty C – *“Clearly there must be expertise.”* **Annexure F – Q.6 (a).**

Faculty D – *“Attributes a mentor of research - have very strong own research experience - must still be doing research in the particular discipline.”* **Annexure G – Q.6 (a).**

This is supported by Schulze’s study (2009:41) who ascertained from interviewees’ that research knowledge and skills are important characteristics of a mentor and are of the opinion that the mentor should be an experienced, knowledgeable and successful researcher to function as role model and help you reach goals that you would not reach on your own.

However, one respondent indicated the contrary to this in the questionnaire, Section C, Q.C7 - *“Some mentors lack the knowledge in the specific field of research.”* **Annexure B.**

The mentees perception that the mentors were not competent (42.2%) is contrary to the findings on the profile of the mentors which shows that mentors have the capacity to mentor in terms of age, qualification and experience. However, it seems that the gap may be that the mentors do not have the skills to mentor although they have the relevant qualifications.

The implication is that mentors should be formally trained to mentor, hence a formal mentoring programme is recommended. This supports van der Walt’s (2010b:1-2)



suggestion for a structured programme that may consist of various elements, one of which is mentoring skills, be implemented at UJ.

#### 4.2.4.2 Existence of REMP

Literature reviewed indicated no evidence of REMP on a formal basis. The researcher opted to explore the possibility of REMP being in existence in any other form.

*Table 4.2.4.2.1: REMP present at UJ*

	Percent
Yes	11.10
No	77.10
No response	11.80
Total	100.00

*Table 4.2.4.2.2: Where is REMP present?*

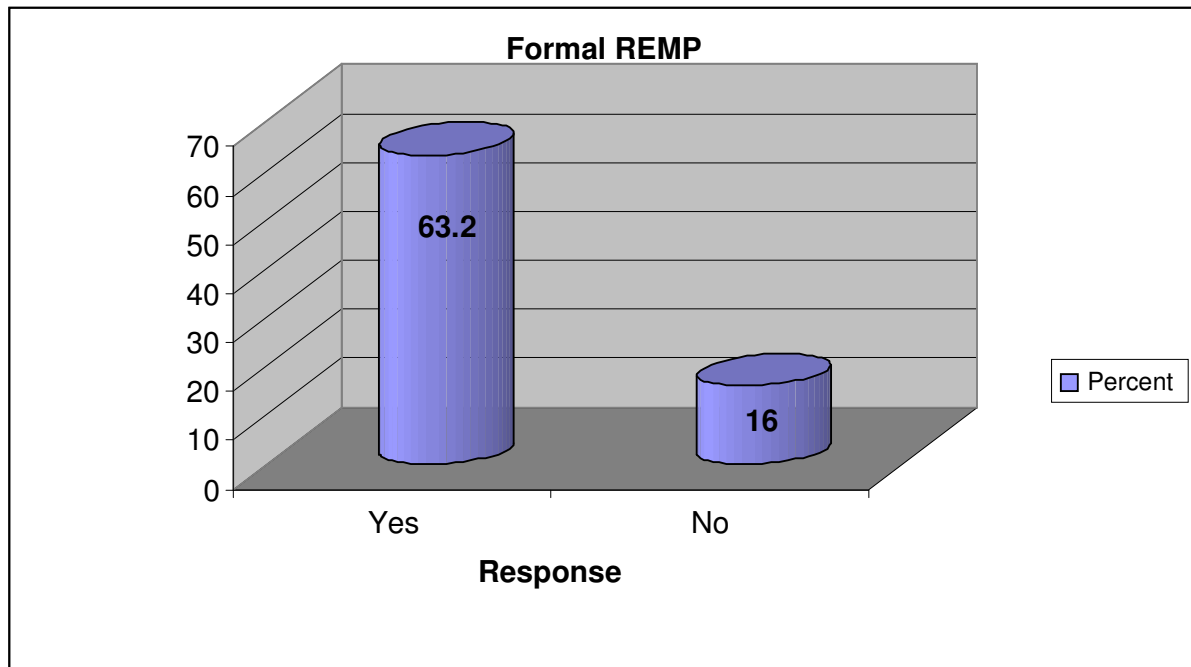
	Response	No Response	Total %
Departmental	6.30	93.70	100.00
Faculty	3.50	96.50	100.00
Institutional	2.10	97.90	100.00

Tables 4.2.4.2.1 and 4.2.4.2.2 indicate that of the 88.20% respondents only 11.10% are aware of a REMP at UJ which were either at a departmental (6.30%), faculty (3.50%) or institutional (2.10%) level. Respondents indicating REMP at institutional level could possibly be referring to REMP that is in place for new staff members and not a research mentoring programme.

The majority of the respondents (77.08%) are unaware of any REMP at UJ. With only a low percentage of respondents (11.10%) being aware of a REMP the researcher has established from interviews with the faculty deans that mentoring is already taking place on an informal basis at departmental level (summarised in point 4.3.2.2 (c) - Interviews). The researcher is of the opinion that the faculties/departments should publicise this mentoring widely to increase awareness.

#### 4.2.4.3 Implementation of REMP

To ascertain if respondents were in favour of a formal REMP, data was analysed in terms of their willingness to participate in such a programme, the type of programme required, the level at which it should be implemented and their choice of mentors or mentees.



**Figure 26: Response to a formal REMP**

Figure 26 reflect that the majority of the respondents (63.2%) are in favour of implementing a formal REMP at UJ while 16.0% were not in favour.

However, interviews conducted with the respective senior managers from the sample faculties indicated that a formal REMP is not desired and would not work (excerpts from transcripts):

**Faculty B** – *“It is one thing to say you want a mentorship but it is another thing to make it work. Annexure E – Q.3. “Forcing people is never a good idea. It is through showcasing examples. Finding those examples – asking the mentors to mentor mentors.” Annexure E - Q.7 (c);*

**Faculty C** – *“From my experience, you need willing partner and you need people to commit. It runs on an informal basis between a senior and junior partner. It happens spontaneously and very often unexpectedly.”* **Annexure F – Q.4.**

*“You can’t really go to a colleague and say ‘thou shall mentor’. It must be a commitment that he must be able to do it. You can’t force people given the pressure under which they are.”* **Annexure F – Q.5.**

**Faculty D** – *“Staff that is not active researchers currently, I would guess that they might think that a formal mentorship programme will [work] for them. They don’t know where to start; they don’t have the confidence to really approach another team of researchers. I don’t think it will work for them. Someone can’t tell them how to do research and just leave them. Someone will need to do the research with them to really get them going. I don’t see that there must be a formal programme.”* **Annexure G – Q.5.**

This is also confirmed by some respondents to the questionnaire (excerpts from the questionnaire) **Annexure B.**

Section D, Q.D11: If there are other benefits in the mentoring process, please specify:

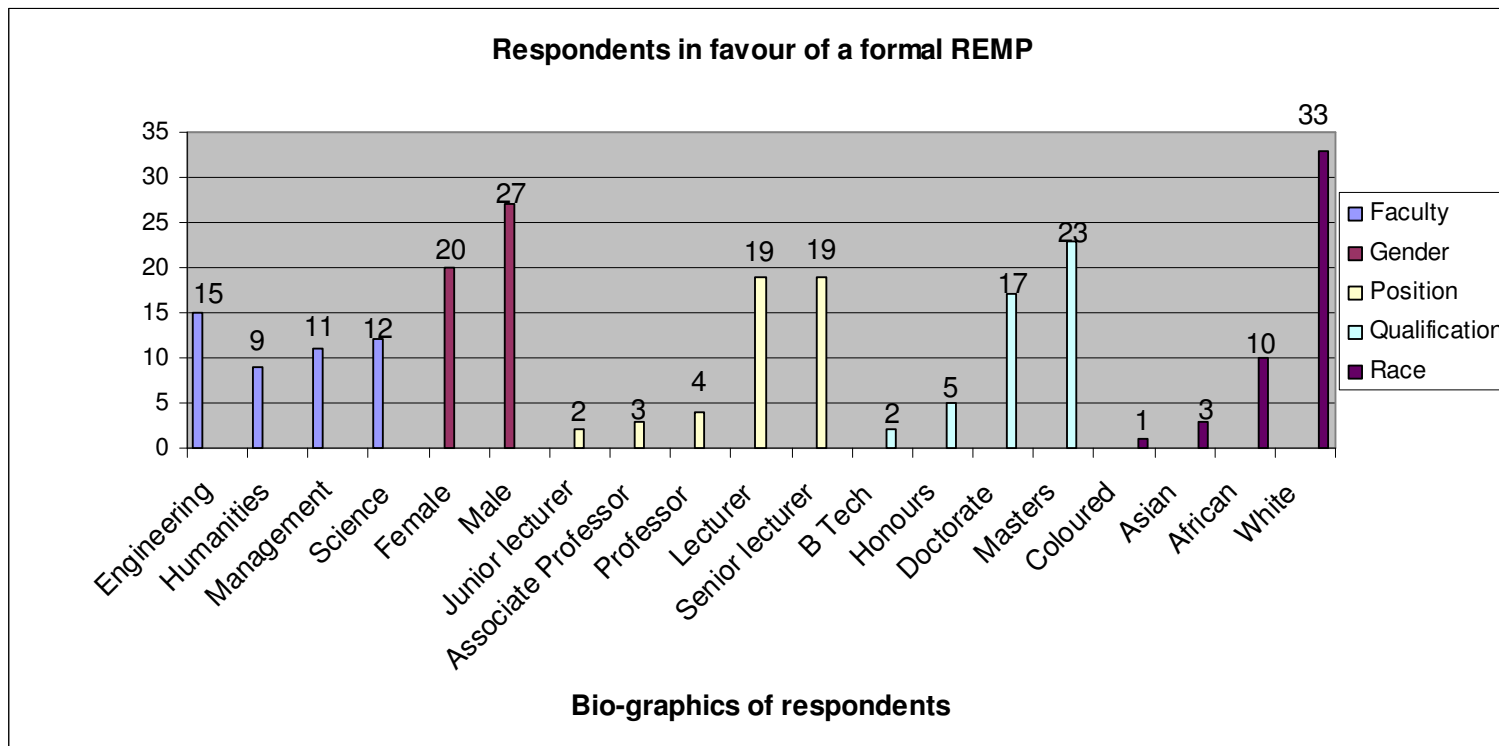
- *“formal things don’t work - it must be chosen by both mentor and mentee.”;*
- *“I am not in favour of formal mentorship”;*
- *“only if it is voluntarily done will there be a positive benefit to those willing to participate” and*
- *“there is an informal mentoring culture that could be exploited more fully.”*

Section D, Q.D12: If there are other disadvantages in the mentoring process, please specify:

- *“formal programmes outside normal work hours discriminate against those with family responsibilities.”*

Section D, Q. D13: Please enter any other comments regarding mentorship for researchers for our attention:

- *“attempts to formalise mentorship are unlikely to meet with success. Successful mentorship is the result of voluntary associations between mentors and mentees, a highly personalised form of interaction” and*
- *“when enforced it is yet another aspect to be managed, with a negative vibe to it. With a willing mentor and a willing mentee it becomes a relationship that both aspire to. It should happen naturally.”*

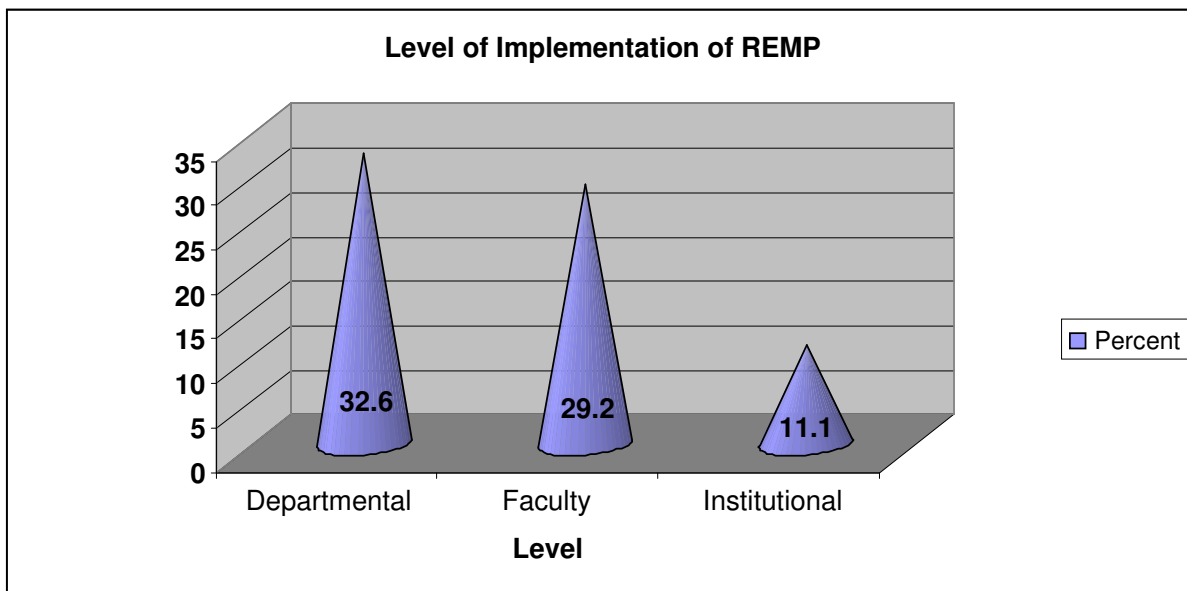


**Figure 27: Bio-graphics of respondents in favour of a formal REMP**

In the interviews it was of the opinion of the interviewees that a certain group of people may have requested for a formal REMP for e.g. according to Faculty B it was assumed that it was the *“so-called non-performers with exceptions, they were all young, female or black. Key conclusion was that they were paralysed or stage fright. They did not know what to do.”* **Annexure E - Q.1.**

Another faculty i.e. Faculty D expressed a similar view, *“Staff that is not active researchers currently, I would guess that they might think that a formal mentorship programme will [work] for them.”* **Annexure G - Q.5.**

A cross-analysis of data was done in terms of gender, race, position, qualification and faculty for those who requested a formal REMP. This is illustrated in Figure 27. 27% were males who were lecturers (19%) and senior lecturers (19%) with Doctorates (17%) and Masters (23%), from the white race (33%) and mostly from the Faculties of Engineering (15%) and Science (12%) that had requested for a formal REMP.



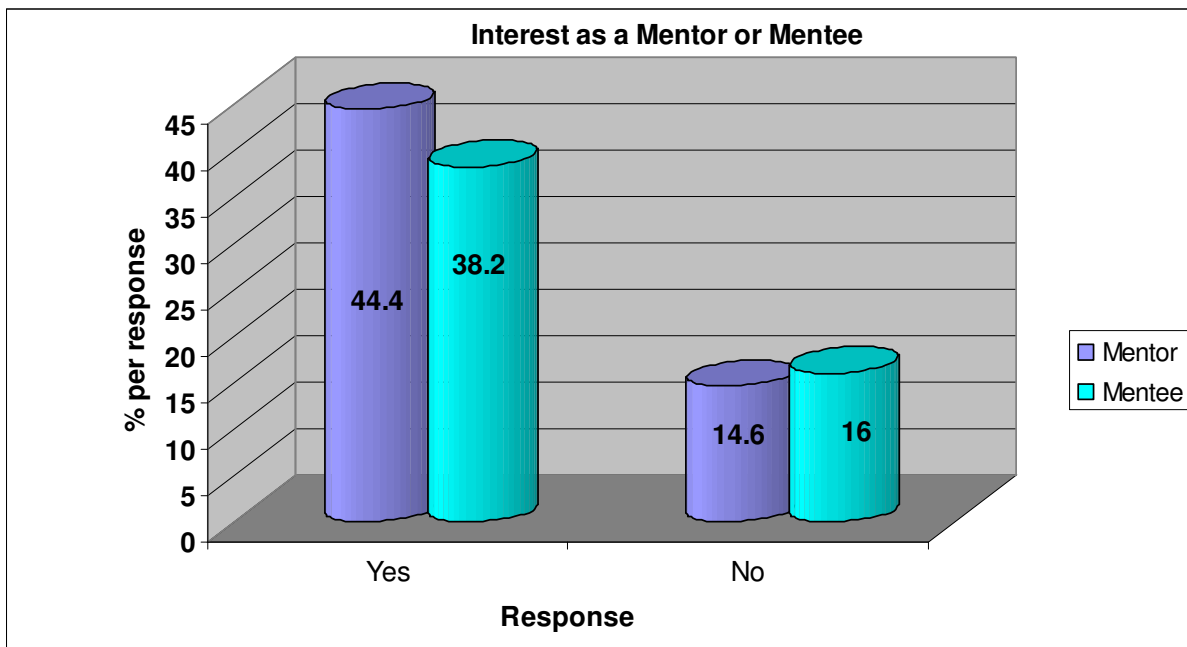
**Figure 28: Level at which REMP is preferred**

Figure 28 indicates that 32.60% of the respondents are in favour of REMP at a departmental level while 29.20% of the respondents favoured REMP at faculty level with 11.10% believing that REMP should be implemented at institutional level.

With respondents favouring REMP at departmental level, this is also supported by the interviewees as established during the interviews as follows:

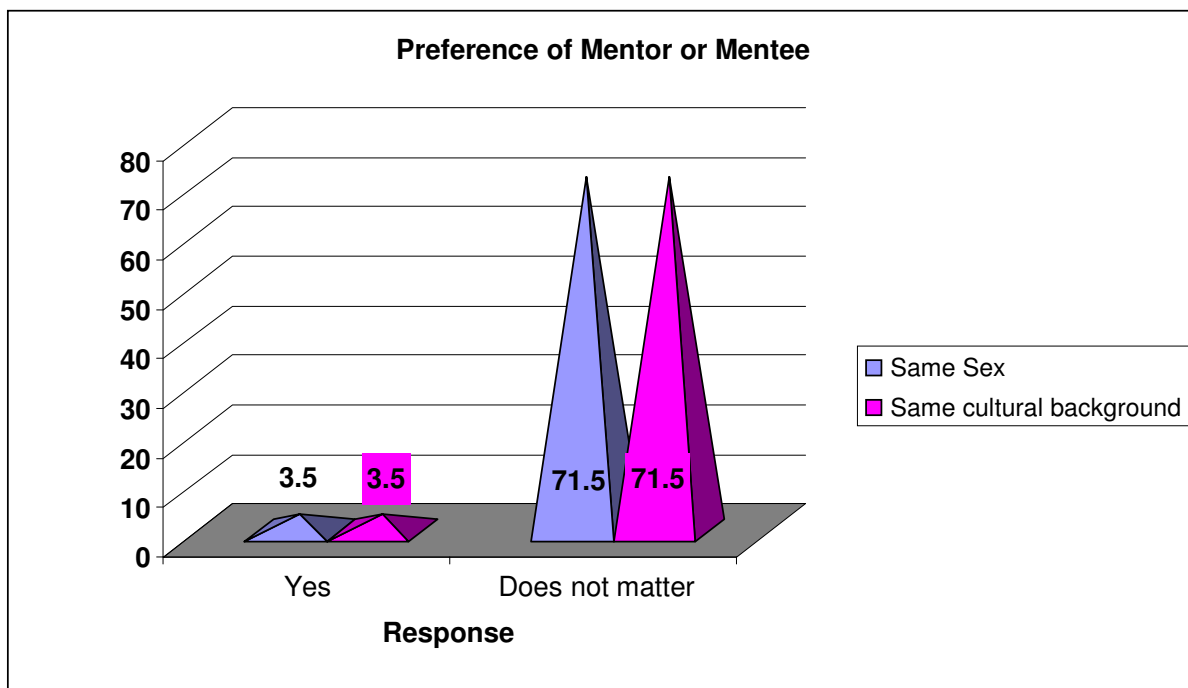
**Faculty A** – *“I think that should be done at the departmental level because the similarities in research projects will probably be much more across departments than across the faculty.”* **Annexure D – Q.3** and

**Faculty C** - *“It is a departmental initiative.”* **Annexure F – Q.3.**



**Figure 29: Participant as a mentor or mentee**

Figure 29 shows that on average there is a 41.3% interest from respondents to be either mentors or mentees while 15.3% have no interest in either.



**Figure 30: Preference of mentor or mentee**

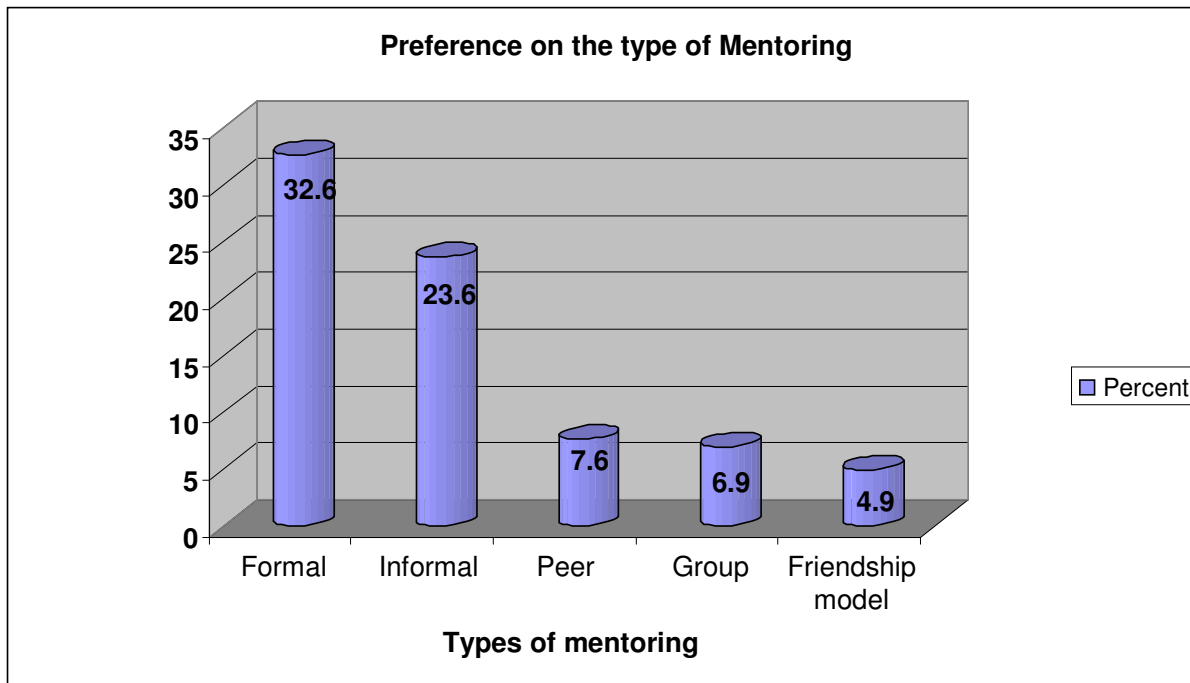
Figure 30 shows that the majority of the respondents (71.5%) were flexible about the choice of gender and cultural background of the mentor or mentee.

Although the respondents did not place much importance in gender and cultural background it is noted with interest that in Schulze's study (2009:34) that race has been noted as a possible influence on the mentorship relationship, although results remain inconclusive. According to Thomas (in Perna, Lerner & Yura 1995:41 as quoted by Schulze (2009:34)) it was found that African Americans experience same-race relationship as more supportive than cross-race relationships.

The same notion applied to gender which was noted as a possible mediating influence on the mentoring process. In Cunningham's (1999) study on mentoring relationships among academics in Christian higher education (as quoted by Schulze 2009:34) it was noted that most participants recalled having mentors of the same gender, especially males. Women preferred females to male mentors. Participants in cross-gender mentoring relationships may be incompatible (Perna, *et. al.* 1995:35 as quoted by Schulze (2009:34)) and were less productive than same-gender participants (Wilson, Pereira & Valentine 2002:321-322 as quoted by Schulze (2009:34)).



In contrast, a study by Goodwin, Steven & Bellamy (1998:338 as quoted by Schulze 2009:34)) found that respondents did not believe that mentors and protégé's should necessarily be of the same gender. In a mentoring programme for junior women at the Southern Illinois University, mixed-gender mentor-protégé pairs were successful (Henry, *et. al.* 1994:2-3 as quoted by Schulze 2009:34).



**Figure 31: Preference on the type of mentoring**

Figure 31 shows an important finding that:

- 32.6% of the respondents were in favour of a formal REMP.

A few respondents indicated the following as other types of REMP preferred. However, it did not make a significant impact on the overall data analysis. Each benefit was stated by only 0.70% of the mentees:

- any of these would be helpful. Didn't like the forced choice. Whatever works for an individual;
- both formal and informal mentoring is helpful. Group mentoring is less threatening;
- combination of formal and informal;

- formal mentoring should begin with group mentoring and progress to individual time where needed and
- mentoring depends on the people involved. There shouldn't be a formal model.

A few respondents provided the following as additional comments on REMP. However, it did not make a significant impact on the overall data analysis. Each benefit was stated by only 0.70% of the mentees:

- start it sooner rather than later. Less talk on this issue and more action please;
- as done in the Faculty of Science it makes sense. However even that takes a lot of time. In Science all first time study leaders and supervisors must have an experienced co-supervisor;
- emphasising again, this is a thing that will only work if it is chosen by both parties and both are committed to the process. Forcing people together will only create friction and unhappiness;
- many people from other institutions want to publish and research but are restricted by their workloads; this is a major consideration;
- mentors should have a speciality. They should be students who have finished their degrees, post-grad degrees, etc. Mentoring provided by the ex-writing centre was superb and just what was needed;
- mentorship should NEVER be enforced on any researcher, but should be based on the person's choice to become involved in the programme. Successful participation should be rewarded;
- one gets the impression sometimes that some mentors are only in it for the money, inserting their names first on every publication drafted and
- there should be a strong link with the relevant industry to work with real time data, while constantly improving the standard of teaching at the university.

#### 4.2.5 Gap Score Analysis on the overall response to REMP

For an overall view on whether mentorship is favoured a Gap Score Analysis is presented below:

**Table 4.2.5.1: Section B: B9: Gap score analysis**

Section B: B9	Mean	Gap
There should be a formal mentorship programme at UJ	3.77	-1.23
Academic staff at UJ should mentor UJ researchers only	2.50	-2.50
Academic staff at UJ should be allowed to mentor researchers at other universities	3.73	-1.27
Mentoring is personally rewarding	4.17	-0.83
Mentoring advances my academic career	3.55	-1.45
Mentoring increases my confidence	3.81	-1.19
Mentoring should be used as a criteria for promotion	3.32	-1.68
Mentoring is a waste of my time at work	1.89	-3.11
A mentee is reluctant to follow the advice of the mentor	2.38	-2.62
Mentoring is an optimal supervision strategy	3.66	-1.34
There should be tangible rewards for mentors	3.63	-1.37
Faculties should arrange regular seminars to assist mentees	3.63	-1.37
Workshops on research strategies is a form of mentoring	3.75	-1.25
Mentors should be responsible for public dissemination of research findings	3.33	-1.67
A mentor's attendance at conferences increase access to new ideas	4.27	-0.73
A mentee's attendance at conferences increase access to new ideas	4.30	-0.70
A mentor's industrial visit for improved supervision is essential to the mentoring process	3.44	-1.56
A mentee's industrial visit for improved supervision is essential to the mentoring process	3.48	-1.52
Mean	3.48	-1.52

Table 4.2.5.1 indicates that the average score for this category is 3.48. An examination of the individual factors show positive attitudes towards the mentoring process, with many of the positive statements tending towards agreement (mean score of 4).

The low scoring values are for the negative statements, indicating disagreement. This double negative effect results in the same conclusions that the mentoring process is beneficial.

**Table 4.2.5.2: Section C: C9: Gap score analysis**

Section C: C9	Mean	Gap
There should be a formal mentorship programme at UJ	3.72	-1.28
should be an informal mentorship programme at UJ	3.56	-1.44
Recommend colleagues with relevant expertise to become involved in a mentorship programme	3.75	-1.25
Being mentored is personally rewarding	4.02	-0.98
Being mentored is academically rewarding	4.12	-0.88
Being mentored increases one's research output	3.82	-1.18
Being mentored is a waste of time	1.72	-3.28
Mentoring can be used as an optimal supervision strategy	3.72	-1.28
There should be tangible rewards for mentors	3.95	-1.05
Faculties should arrange regular seminars to assist mentees	3.89	-1.11
Workshops on research strategies is a form of mentoring	3.58	-1.42
Mentors should be responsible for public dissemination of research findings	3.33	-1.67
A mentor's attendance at conferences increase access to new ideas	3.96	-1.04
A mentee's attendance at conferences increase access to new ideas	4.16	-0.84
A mentor's industrial visit for improved supervision is essential to the mentoring process	3.41	-1.59
A mentee's industrial visit for improved supervision is essential to the mentoring process	3.48	-1.52
Mean	3.64	-1.36

Table 4.2.5.2 indicates that the largest gap is for “*Being mentored is a waste of time*”. However, this is for a negative statement so the overall effect is that this is a positive gap, meaning that REMP is desirable.

**Table 4.2.5.3: Section D: D10: Gap score analysis**

Section D: D10	Mean	Gap
UJ should have a mentorship programme in place for novice researchers	4.12	-0.88
A mentorship programme will benefit novice researchers	4.29	-0.71
A mentorship programme will benefit post-graduate students	4.31	-0.69
A mentorship programme will benefit researchers with a limited publication record	4.18	-0.82
A mentorship programme will benefit researchers with a high publication record	3.21	-1.79
A formal mentorship programme will promote research output of academics	3.86	-1.14
A mentorship programme will only be an additional administrative burden	2.86	-2.14
A formal mentorship programme will only add to the teaching loads of academics	3.06	-1.94
A mentorship programme is not feasible due to academics' resistance to change	2.52	-2.48
Academics who are not actively involved in research should be required to be mentored	2.99	-2.01
Academics who are active researchers should be required to mentor	3.16	-1.84
Mean	3.51	-1.49

Table 4.2.5.3 indicates that with regards to Gap Score Analysis for Section D, Q.D10 indications are that both the statements regarding academics mentoring average scores of approximately 3. This implies that there were as many respondents who agreed with the statements as there was who did not. The last 4 statements on the graph show agreement. These are concerned with the benefits associated with having a mentorship programme.

#### 4.2.6 Summary

An analysis of the data received via the survey indicated that there is mentoring capacity as indicated in Figures 12 and 13, in terms of qualification and experience and mentors who are willing to become involved in a formal REMP. This is confirmed by van der Walt (2010b:2) in his proposal for a structured programme to be implemented at UJ to build and increase the research capacity development at the UJ, stating that “such a programme would have minimal budgetary implications as most of the skills are available within the institution either at departmental, faculty or institutional level. However, the concern is that most of the mentors are of retirement age or reaching retirement age in the next five years.”

A positive observation is that there are a number of mentees that are currently being mentored as indicated in Figure 18 (22.2%). These mentees, once through the mentoring process, could be possible replacements for the ‘depleting’ resources.

There was a favourable response by all respondents for a formal REMP which was favoured at a departmental level. There are some respondents who are willing to participate in REMP either as a mentor or mentee and are flexible on the choice of mentors and mentees in terms of gender and cultural background.

An important finding was that the request for a formal REMP differed with the views of the senior managers interviewed in the sample faculties. Interviewees believed that the informal mentoring was working at departmental level and were of the opinion that a formal REMP would not be favoured.

### **4.3 Part 2: Qualitative data**

#### **4.3.1 Document analysis**

In order to ascertain the status of research and its development at UJ institutional and faculty documentation were sourced.

##### **4.3.1.1 Institutional documentation**

According to Studman (2005:8) most research directors and managers are expected to grow either the quality or the quantity of research within their organisation. Sometimes there is a problem of academics that have a low or non-existent research output. This situation is no exception to UJ, a comprehensive university striving towards being a research-focused institution. Historically, this was solved by conventional methods where research output determines contract renewals (publish or perish) or promotions (publish or stagnate).

Prior to UJ going through a Quality Audit in August 2009, a comprehensive Self-Evaluation Report (SER) was compiled after a Mock-Audit process in February 2009. This document together with the Research Policy and Strategy and the 2008 Research Reports were used as a major source for the institutional document analysis.

According to SER (2009:11–12) no vision and mission statements are ever cast in stone. Hence, after the appointment of the Vice-Chancellor in April 2006 and after consultations with various stakeholders a revised vision statement was developed to reflect a collective desire to build a premier legacy institution. Hence, a revised vision of UJ:

“A premier, embracing, African city university offering a mix of vocational and academic programmes that advances freedom, democracy, equality and human dignity as high ideals of humanity through distinguished scholarship, excellence in teaching, reputable research and innovation, and through putting intellectual capital to work.”

However, the goals of UJ remain the same, in particular, Goal 3:

“Aimed to establish UJ among the top research universities in the country in terms of nationally and internationally accepted research criteria” (SER, 2009:15).

In view of the vision and goals of UJ, strategic emphasis was placed on research. According to SER (2009:221-222) UJ is committed to the White Paper 3: *A programme for the transformation of Higher Education*. Its research thrust is furthermore based on the Department of Science and Technology’s (DST) *Ten –Year Innovation Plan*.

UJ fully endorses the national emphasis on research. This is evident in the introduction to the Research Policy and Strategy that was approved by Senate in June 2007, reviewed and approved again in June 2009 and to be reviewed again in 2014.

The purpose of this policy document is to:

- present a policy framework for the management, support and development of research at UJ and
- provide a strategy on how to achieve the research goals (Research Policy & Strategy, 2009:3).

The policy outlines the guiding principles regarding the management, support and development of research to all those involved in research at UJ (Research Policy & Strategy, 2009:4).

The implementation of this policy is closely guided by the University Research Committee, which in turn functions in accordance with the authority delegated to it by Senate. In terms of the Research Policy and Strategy the following strategic goals have been identified:

- maintaining and enhancing the quality of research undertaken;
- enhance the institutional research profile;
- increasing, managing and structuring the external and internal funding for research;



- supporting and promoting fundamental scholarship;
- supporting national, regional and industry-specific research and development policies and strategies;
- maximising the impact and international recognition of UJ research and
- capitalising on UJ intellectual property (Research Policy & Strategy, 2009:7).

According to SER (2009:222-223) these strategic research goals, together with resources and planned actions that UJ has, are in line with the following Key Performance Indicators:

- accredited research output in aggregate terms;
- non-subsidy research income;
- NRF-rated researchers;
- staff profile in terms of research qualifications;
- active formal research collaboration with national and international partners;
- number of NRF chairs and
- research expenditure.

From the above, it is clear that research enjoys strategic priority at UJ, and that it is UJ's intention to establish itself as a research-focused university within the foreseeable future

Strategies have already been implemented to achieve this goal. According to Research Report (2008a:3) the Deputy Vice-Chancellor (Research, Innovation and Advancement) stated that UJ wants to build a university that is of service to the nation and the world i.e. to be at the forefront of creating new knowledge and developing the human resources required to transform the world. In essence UJ must be a university that not only teaches well but must also be at the forefront of producing cutting-edge world-class research. He further states that in order to achieve this three essential ingredients are necessary viz. scholars, financial resources and an enabling environment which are elaborated below:

- ***Scholars***

UJ has created 150 new academic positions, transforming the staff-student ratio and have attracted a considerable number of highly qualified world-class

scholars, many of whom come from diverse backgrounds. Focus is also on capacity building with a view to enhancing the skills-base of existing scholars.

According to Dr C Masuku, Executive Director (Research and Innovation Division) (2008:7) research capacity which impacts on the research profile and research footprint, is being supported by the appointment of postdoctoral fellowships and research professors in selected programmes and faculties. The number of active researchers has been increased through the NRF TTK programme that is designed to build research capacity.

Masuku (2008:9) further states that UJ is also establishing a Postgraduate Centre. One of its three main structural functions is research capacity development which is concerned with enhancing and supporting the research skills of postgraduates through workshops and seminars, in areas such as report writing, research proposal writing, project management, research design, research methodology and statistical analysis. It is also envisaged that each of the faculties will provide a social space for postgraduates to interact. The resource facility will be equipped with a number of networked computers in separate carrels, small-group study rooms and a seminar room.

UJ has also started a staff development programme by having a staff qualification enhancement programme. The aim is not only to improve teaching excellence but also to increase active researchers. It also aims to guide all staff without postgraduate qualification towards obtaining at least a Master's degree by the end of 2011 that should also greatly boost research capacity. UJ has also established a research village for one of the faculties whereby the atmosphere is quiet and studious creating a perfect setting for research production (Masuku, 2008:10).

According to a paper by Prof Ihron Rensburg, UJ's Vice-Chancellor (as quoted by Breitenbach, '08/'09:6-7) most of the research at universities is currently being undertaken by mature, white male academics with some universities already relying on post-retirement contracts with senior researchers to maintain research output. The lack of a new generation of scholars is manifesting in reduced

research output. The growth of the next-generation of scholars has become a key strategic priority at UJ.

Hence, in 2009 UJ embarked upon a Next Generation of Scholars Programme. The aim of the programme is to help create a pool of appropriate qualified researchers for UJ in the long term. The programme has generated positive results that have attracted external funding.

According to Nandarani Maistry, UJ's Head of Postgraduate Support, Research and Innovation Division (as quoted by Breitenbach, '08/'09:7) the Next Generation Scholars Programme "will not only sponsor successful candidates in full, but they will be guaranteed a job at UJ on completion of their studies." This will be another boost for UJ's research capacity.

The issue of building capacity is supported by Studman (2005:8) who is of the opinion that institutions have to find ways to reward lowly paid academics financially for undertaking research successfully. He feels that this financial reward should be part of the developmental package and is an effective way of encouraging and building research capacity. This could also be a way of ensuring that private consultancy by academics does not take precedence over staff research and even teaching.

- ***Financial resources***

The university's research budget has quadrupled in two years and is likely to double in the next two. In addition 13 new research centres have been established with internal financial resources and 7 research niches have received additional funding. These 7 niches are based on the NRF's portfolio of eight focus areas as the landscape for research support. Budget has also been directed to building new infrastructure and for the financing of new research equipment.

Public and private donors have also been engaged, including the corporate sector with a view to establishing research partnerships that attract new resources into the university.

In relation to research collaborations and partnerships, UJ has continued to broaden its research networks at faculty and institutional level. This is considered critical to strengthen UJ's research profile and maximising its external funds. Efforts also went into revitalising relationships with key public stakeholders and private sector institutions, such as the relevant Government Departments and Gauteng Provincial Government. Examples of some collaborations and partnerships are with Johannesburg Water, Eskom, Mintek, Council for Scientific and Industrial Research, the Cancer Association of South Africa and Water Research Commission.

UJ also recognises the enormous benefits to be gained from engaging internationally to increase its profile and research capability and hopes to build not only on its South-North partnerships but also South-South partnerships. Examples of some of the external partnership-building visits were to Senegal, India, China and Brazil (Research Report, 2008b:11-12).

From an interview with Faculty D, it was evident that this goal of international collaboration is also being pursued, which links with the institutional goal as indicated from an excerpt from the interview:

*"We also have now one of two staff members that already finished his PhD last year. From the faculty we supported him to spend a year overseas at a very prestigious institution. We feel that [is] also capacity building; he is setting up the network that will help him in the future with his research. Another staff member will now enrol for PhD formally will spend 6 months overseas. If that type of opportunity arises we try to accommodate that. It means other staff members need to work a bit harder [and] that we really encourage this type of international collaboration and exposure."* **Annexure G, Q.2.**

- ***Enabling environment***

To create an enabling environment new full time research professorships have been created. Researchers are rewarded both by giving them greater share of their publication subsidies and making research output and reputation non-negotiable criteria for promotions and appointments. New incentives for research have been established.

The need to provide incentives to researchers into higher productivity and to acknowledge their significant contribution to the status and standing of the UJ, several research and innovation incentive schemes were launched or proposed during 2007. Accordingly, three Vice-Chancellor's Distinguished Awards have been established. One of the awards is for the Most Distinguished Researcher, another for the Most Promising Novice Researcher and the third for the Innovator of the Year (Research Report, 2008a:5). A similar practice is found at the University of Botswana where prizes are awarded to the top researchers (Studman, 2005:9).

According to Masuku (2008:7) UJ has developed a very generous Research Incentive Scheme to encourage rating among researchers and to maximise output. This includes increasing the proportion of the publication subsidy allocated to each researcher's personal fund, designed to help expand the pool of researchers by encouraging non-productive researchers to engage in research.

Studman (2005:9) is of the view that all forms of research success should be rewarded and obtaining external research funding is just as valid a research success as a published paper or a paper in a developmental context, changing government policy through research findings.

Hence, these outputs are part of a new performance-based reward system being introduced for academics in Botswana. However, Studman states that it is important that the outputs are measurable and specific and work in progress should not be rewarded.

The Deputy Vice-Chancellor (Research, Innovation and Advancement) is of the opinion that researchers need to be free from the administrative burdens of technocrats in the university and higher education system. More financial and human resources have to be directed to research which is needed to develop a new generation of scholars (Research Report, 2008a:3).

Studman (2005:9) is of the opinion that if staff is rewarded for research output by receiving a reduced teaching load or a research day free of teaching and administrative responsibilities, this has a catalytic effect on research capability. It is further stated by Studman that another factor considered as a motivator towards creating a research culture, is bringing in international researchers to provide inspiration that can motivate people. Leadership can be highly successful, provided that opportunity exists for the staff to follow the lead.

Creating an enabling environment for research is also reiterated by Masuku (2008:7) who emphasises that the University Research Committee and Faculty Research Committee play a major role in supporting and monitoring the quality of research. Through the Research and Innovation Division, concerted efforts are being made to establish and provide sufficient and effective research support for researchers.

Hence, it is evident that UJ has committed itself in supporting and developing research with the intention of becoming a research focused institution. This evidence is further affirmed by the verbal feedback provided to UJ by the HEQC Audit Panel on the preliminary findings based on the UJ Institutional Audit conducted in August 2009 as follows:

- **9.1** the institution's investment in research and efforts to enhance the quality of the research function across the institution is acknowledged and
- **9.3** the institution is congratulated on the attempts to increase staff qualifications, to build the research capacity of staff; especially on the New Generation Scholars initiative.

However, the following limitations were highlighted:

- **9.4** the institution is receiving strong support from senior researchers but some junior researchers are experiencing alienation from senior management due to the pressure to publish, which may be unrealistic as well as a heavy teaching load and
- **9.6** faculties and departments realise that it is essential to produce students with sufficient depth of disciplinary knowledge to allow them to proceed to postgraduate studies. However, there appear to be limitations to supervisory capacity, which needs to be addressed (OnQ, 2009:un-numbered).

#### **4.3.1.2 Faculty documentation**

In order to deliver more research productivity, participation and quality, UJ recognises the importance of standardising and synchronising its research management systems and guidelines across different faculties (Masuku, 2008:7).

Of the four sample faculties, three faculties i.e. Faculties A, B and D refer to the institutional policies as their guideline to manage research within their faculties.

The institutional policy framework informed and facilitated one sample faculty i.e. Faculty C, to implement a faculty policy.

#### ***Faculty C***

Against the background of the research policy of UJ, the research activities in Faculty C are aimed at promoting research through:

- funding where a ring fenced faculty research fund is budgeted for;
- addressing infrastructure needs by obtaining annual report and analysis on infrastructural needs in departments;

- funding for conferences where such financial support can only be provided where the academic staff member presents a paper(s) at an international conference depending on the track record of the academic staff;
- financial support to post graduate students in the form of various bursaries;
- research capacity and development in individual departments by conducting an annual skills audit of research staff. Also a Personal Development Plan should be negotiated with and agreed to by every novice researcher so that capacity and skills can be created, developed and sustained;
- measuring and monitoring research output where departments are encouraged to set clear targets and benchmarks for research output within their own disciplines;
- quality care of research is done by keeping abreast of the latest developments and demands regarding quality care in research. Encouraging departments to establish a research quality improvement process. Also encouraging individual researchers to participate in the NRF rating;
- creating a research culture by containing bureaucracy, appropriate rewards and incentive and seminars;
- research focus where departments should manage and balance individual prerogatives and freedom in doing research with the research thrusts and priorities that may emerge at department, faculty, institutional or national level and
- department's policies echoing the faculty and institutional research policy.

All the research activities of Faculty C are governed and managed by the Faculty Research Committee that is chaired by the Faculty Research Manager (Faculty C, 2008/2009:7-22).



### **4.3.2 Interviews**

Interviews with Deans, Faculty Research Managers (if any) of the four sample faculties, current Deputy Vice-Chancellor: Research, Innovation and Advancement and the Executive Director: Research and Innovation were chosen as an additional source for data collection. These members were chosen as they are executive and senior members of staff empowered with the task to promote research to assist the university to achieve its goal of becoming research-focused in a comprehensive institution. The purpose of the interviews will be to ascertain their level of support for research in order to improve research output in the institution.

#### **4.3.2.1 Executive Management of institutional research domain**

Interviews were originally intended with the Deputy Vice-Chancellor: Research, Innovation and Advancement and the Executive Director: Research and Innovation Division. With the publication of two 2008 Research Reports which highlighted the strategic plans and the implementation of some of the initiatives, the researcher deemed it not necessary to conduct these interviews.

The details of these reports are outlined under institutional document analysis under point 4.3.1.1.

#### **4.3.2.2 Deans**

Semi-structured interviews were conducted with the Deans and in one case the Vice-Dean of the four sample faculties i.e. Faculties A, B, C and D. In the proposal it was stated that an interview would also be conducted with one of the Faculty's Research Manager. This interview was conducted with the Research Manager and Dean, in the new capacity as Vice-Dean (Acting). The questions posed were categorised as follows:

- a) Questions 1 and 2 focused on faculty support for research and capacity building;
- b) Questions 3 to 6 focused on mentorship and
- c) Question 7 focused on the culture of mentorship at the institution.

Before the commencement of interviews anonymity was verbally requested and that was respected by giving pseudo names to faculties and people. Questions were posed to all the interviewees (**Annexure C**). The responses were recorded and transcripts and summation were sent to the respective interviewees for verification. Detailed transcripts together with clearance that the transcripts are the true reflection of the interviews are attached as follows:

- **Annexure D - Faculty A**
- **Annexure E - Faculty B**
- **Annexure F - Faculty C**
- **Annexure G - Faculty D.**

The findings of the interviews are summarised and categorised as follows:

**a) Research Support and Capacity Building Initiatives**

From the interviews conducted it was evident that all four sample Faculties had interventions in place to achieve one of the strategic priorities for UJ as outlined by the Vice-Chancellor:

***“Enhancing our research profile and research excellence, with key activities being increasing our research productivity and output; expanding the number of researchers”*** (VC Bulletin, 2009:1).

Some of the interventions in place for research support are:

- workshops on how to do research, proposal writing and how to write a paper;
- recruitment of people with very strong research background;
- increasing of PHD students;
- funding, in some faculties the value is determined by output already achieved by colleagues, potential Masters and Doctoral students, whether established or potential of novice researchers;
- increasing the rewards for researchers in the faculty;
- series of workshop where novice researchers can do presentations to staff in order to gain skills and confidence;

- enhancing research output by promoters and supervisors publishing with students;
- throughput of Masters and Doctorates which was considered a short spectre of publication that can be realised and
- appointment of a person in one department to facilitate the submission of articles for publications by attending to the technical round up and language editing.

Some of the capacity building initiatives are:

- instituting a programme where a new researcher will be given seed funding and a mentor;
- using visiting professorships as a way to increase capacity;
- staff members on the 'staff qualifications project' to complete their Masters and Doctorates and in some cases Honours degrees;
- researchers are sent on a programme with a 60 to 70% completed article and it is 'polished' at a workshop;
- formation of writing groups in some departments;
- research days where presentations are made;
- researchers in the TTK programme with some of them becoming NRF rated researchers and
- high number of students with strong research potential being awarded the Next Generation Scholars Programme Award with the guarantee of employment at the institution upon successful completion of their studies. These initiatives by the faculties is in keeping with one of the interventions by the institution as highlighted in the document analysis where according to Maistry (as quoted by Breitenbach, '08/'09:7) the Next Generation of Scholars Programme "will not only sponsor successful candidates in full, but they will be guaranteed a job at UJ on completion of their studies. This will be another boost for UJ's research capacity";
- funds for presentation at local and thereafter at international conferences and
- support of staff members for international collaboration and exposure.

**b) Mentorship Programme**

Although the survey conducted reflected a 63.20% response from academics in favour of a formal mentorship programme, interviews with the respective Deans/Vice-Dean/Acting Vice-Dean indicated results to the contrary. With the exception of Faculty A, where a mentor was appointed to work with young researchers, the other Faculties were of the opinion that a formal mentorship programme would not work as staff members did not want to be managed and regulated any more than what they are now.

This is attested in Section D, Q.D13 of the questionnaire – *“When enforced it is yet another aspect to be managed, with a negative vibe to it. With a willing mentor and a willing mentee it becomes a relationship that both aspire to. It should happen naturally.”*

**Annexure B.**

Interviewees were also of the opinion that mentorship should be initiated at the departmental level which in some cases is already happening but in a very informal, unplanned and natural way. This form of mentoring is not only between senior and junior staff but also between peers.

The response on what was considered as enabling factors to have mentorship as a possible capacity building initiative; one enabling factor highlighted was the opportunity of working together either by supervising students or working on a research project that will result in publication with shared authorship by colleagues. Another opinion was that there had to be willing partners with commitment and that the programme should run on an informal basis between a senior and junior partner that happens spontaneously. It was also important for there to be common interest i.e. everyone being on the ‘same page’.

Factors that were considered as disabling factors to such a programme were highlighted as follows:

- research champions who have not really done research themselves. Staff not operating at research level became an impediment to the research agenda.

This is also attested in the questionnaire:

Section D, Q.D12 – *“There are many people in high positions who do not publish and don’t really know how to do research.”* and

Section D, Q.D13, *“Many academics don’t know how to do research and publish and they are in high positions supervising other people doing research. It shows up in student proposals.”* **Annexure B.**

- some heads of departments not necessarily understanding the importance of research;
- human issues, such as personal issues between mentor and mentee. Potential for clashes is also expressed in the questionnaire – Section D, Q.D12 – *“Potential for clashes between supervisor and mentor.”* **Annexure B;**
- researchers who felt that they did not need to be mentored;
- ‘single-minded’ people put into some mentoring programme can have negative consequences. This opinion has been noted in the survey, Section D, QD13 – *“Mentorship should never be enforced on any researcher, but should be based on the person’s choice to become involved in the programme. Successful participation should be rewarded.”* **Annexure B;**
- time and under-staffing in many departments was considered a real challenge;
- high lecture loads, especially in the case of the diploma lecturers as in the case of ex-TWR. This concern ties up with the questionnaire in Section B, QB11 – *“I have too much work, especially with undergraduate teaching and so mentoring does add to the load.”* **Annexure B** and
- power relations, arrogance, elitism and languages were some of the other factors considered as disabling factors.

On the issue of whether the faculty had the capacity to manage a mentorship programme many were of the opinion that in terms of a formal programme, they did not have the capacity and felt that it will not work. It was the opinion of one faculty that the departments were the academic engines in the faculty and this is where the mentoring should be initiated and staff should not be instructed to mentor. However, one faculty has the capacity to galvanise enough resources to be able to put such a programme into place sometimes in the future.

With regards to the competency level of the mentor, there was consensus that a mentor must have the expertise in the field and experience. Lack of this expertise was highlighted as a constraint in the survey – Section C, Q.C7 – *“Some mentors lack the knowledge in the specific field of research.”* **Annexure B.**

A good interpersonal skill was also considered important. One faculty described the mentor as a person who should be like “a buddy who is able to walk the distance with you”, be sociable and share his/her resources. It was highlighted that all the faculties had the staff capacity to mentor other staff for research capacity building and two faculties have achieved this by making use of retired senior staff members.

**c) Culture of Mentorship at the Institution**

All four sample faculties were aware of a mentoring culture at UJ and felt that this can be expanded to more academic staff by seeing what the critical factors are that need to be put in place and then expanded. However, it was of the opinion of the faculties that this can be achieved by showcasing examples, training initiatives and that it should be in a collegial and informal way as forcing people into mentoring was not considered a good idea.

With regards to ascertaining the status of the following sub-objective:

***Determine the existence of a REMP and whether tertiary institutions have REMP in place and the nature of such a programme.***

From the interviews it has been established that there is a culture of mentoring existing in the institution. However, the mentoring was not on a formal structured type of mentorship programme but rather in a more informal and peer type of mentoring.

In one faculty, departments have an understanding that there are senior peers that staff members can approach and use them as sounding board as mentors. In another faculty, a department has a group of young researchers and PhD students who come together and write. Also, in another faculty, novice researchers are teamed with more established researchers on projects. Inexperienced staff members are linked to experienced supervisors and mentored as co-supervisors. In one department where

there is no research activity, mentorship is brought from another department through inter-disciplinary registration of degrees.

Interviewees were of the opinion that an informal type of mentorship was favoured instead of a formal structured mentorship programme which they felt would not work. It was felt that if a department's profile had a good balance between senior and younger staff members working on a discipline, peers learning from each other then it is considered natural for there to be mentorship. However, in many departments, human issues come in for e.g. "people not seeing eye-to-eye."

In order to address another sub-objective listed below, the interviewer posed the question of what the interviewees thought were the possible causes for low research output.

***Determine the reasons for comparatively low research output at a tertiary institution.***

- it was felt that before the merger, the ex-RAU was extremely productive as the per capita output and at some stage was the 2<sup>nd</sup> highest performer of all universities in the country. However, with the merger of ex-RAU and ex-TWR, a lot of time was spent in making the merger a success in comparison to other universities that did not merge with other higher education institutions and had the foundations in place and were able to continue with research. Although the productive researchers in the merged institution did carry on with their research, it was not possible to allow them the research time;
- another reason cited was that in terms of per capita, there are now many staff members in departments who had not undertaken research because of their technikon background i.e. they did not really have the mandate, nor research facilities, funding, postgraduate students, etc. to encourage research;
- in addition, due to merger the handling of student numbers by colleagues, the profile of the students coming in and the multi-campus issue were also considered as part of the reason. In some faculties there is no time for research because of large classes to teach and these faculties only recently appointed lecturers. However, this is considered a problem for research productivity as additional lecturers are recruited to teach and not focus on research. Also the

profile of the lecturer appointed is based on lecturing and not research, therefore one cannot expect a change in the research output;

- the appointment of too many contract and temporary staff is very high in the university and is considered another possible reason for low research output. It was felt that one cannot get output from these staff members and that faculties cannot invest in infrastructure for e.g. research equipment even if there was a strong research potential;
- the student profile has an effect on the level of research output. There are too many undergraduate students compared to postgraduate students who stimulate research. However, due to the comprehensive nature of the institution, this situation has to be accepted and
- in terms of publication, the situation is more complex process than staff just being lazy. Non-performers in the case of one faculty were young, black and female staff from ex-Technikon and ex-RAU backgrounds who did not know what to do. It was felt that they needed mentoring.

This issue of non-performers is supported by Studman (2005:8) as highlighted under 'Institutional Documentation' analysis that most research directors and managers are expected to grow either the quality or the quantity of research within their organisation. However, sometimes there is a problem of academics that have a low or non-existent research output.

To change this scenario of low research output, the views expressed were that there must be a change in attitude of staff members and to stop using the excuse of merger and teaching load. At the same time, consideration must also be given to the comprehensive nature of the institution where lecturing takes place from Certificate level up to supervision at Doctoral level and the numbers of students. There must be clear differentiation when comparing one faculty to another by considering the constraints, response levels and staffing before one can consider increasing the research output.

Overall, given the current situation, some interviewees were of the opinion that the institution was doing fairly well at this point in time when compared to researchers at other institutions.



In summary, the interviews revealed that research is taken seriously by the faculties and that there are interventions in place to support research and development and to build capacity. Faculties do have senior staff members and peers who mentor spontaneously and have various ideas of expanding the mentoring culture to other staff members within the various departments in the faculty. Mentoring was favoured in an informal way even though the survey revealed that 63.20% of the respondents favoured a formal mentoring programme.

#### **4.4 Conclusion**

To address the objectives of this study, data was obtained via a quantitative approach by conducting a survey and the narrative enquiry via a document analysis and interviews.

For the survey, a questionnaire was administered to all academic staff (excluding temporary staff and senior management) with the aim of ascertaining their perceptions for a mentoring programme at the institution.

Although the respondents to the survey (63.2%) favoured a formal REMP, the interviews revealed a different view where it was felt that a formal programme would not work. An informal, spontaneous and collegial type of mentoring was preferred which is currently happening in departments. Comments against a formal REMP were also recorded by some respondents in the questionnaire.

The data from the narrative enquiry approach recorded via semi-structured interviews and document analysis was done with the view of ascertaining the support for research and development and capacity building initiatives. The analysis of data has shown evidence of interventions to increase research in terms of research output and capacity building.

Overall, the institution does have mentors with capacity, thus creating a potential to have REMP which was favoured but not in a formal structured framework.

To conclude this study, a summary of findings and recommendations will be outlined in the next chapter.

## Chapter 5

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Conclusions

Research production is increasingly becoming a focal point in HE transformation. Merging of HE institutions has produced various challenges ranging from changing the focus from purely teaching functions to research and teaching. While novice researchers i.e. those that are training to become researchers are expected to develop capacity by engaging in research through various strategies, the aim of capacity development is to enable young researchers i.e. those who are developing a profile as researchers, to publish in high impact publications which attract funding in the form of subsidy from the DoE. The manner in which HE institutions promote research output through capacity development initiatives is important for attracting funding.

Based on the above, the researcher embarked on a study with the objective of determining whether mentorship is a useful strategy of improving research output at a merged HE institution.

The literature reviewed indicated that mentorship is popular in many fields for e.g. in education, health and law. However, there is insufficient data to benchmark its success as many organisations are either planning to embark on or have recently commenced with such programmes or such existing programmes were not formally evaluated.

The researcher therefore, explored the possibility of a formal Research Mentorship Programme (REMP) as a research capacity development measure to improve research output. Before considering such a programme, the experiences, perceptions and views of researchers were explored. The data was obtained via a case study. UJ was the HE institution selected for the case study. Questionnaires were administered to academic staff members and excluded temporary staff in four of the sample faculties i.e. Faculties of Engineering, Humanities, Management and Science. Interviews were also conducted with the relevant senior managers from the four sample faculties to ascertain their support for research and development. Institutional documentation was also analysed

to determine the implementation of interventions to assist the institution in its goal in becoming a research-focused institution.

In chapter 4 the analysis of all the data gathered and conclusions were drawn against the following sub-objectives:

- ***Determine the reasons for comparatively low research output at a merged tertiary institution.***

In order to address the sub-objective listed above, the interviewer posed the question of what the interviewees thought were the possible causes for low research output.

The following was established:

- UJ was established as a result of the merging of two educational institutions with different research cultures. The one institution (ex-TWR) was focused on teaching and limited research and only later on was mandated to do research whilst the other institution (ex-RAU) was a research focused institution;
- staff from the ex-Technikon did not have the official mandate nor research facilities, funding, etc. to encourage research;
- an increase in student numbers and the profile of the students recruited against per capita of staff;
- multi-campus;
- faculties do not have time for research because of the large classes to teach;
- appointment of too many contract and temporary staff and
- as a comprehensive institution there are too many undergraduate students compared to postgraduate students who encourage research.

In order to meet the second sub-objective reflected below, data was drawn from interviews and the survey:

- ***Determine the existence of a REMP and whether tertiary institutions have REMP in place and the nature of such a programme.***

From the interviews conducted with the relevant senior managers it was established that a mentoring culture does exist in the institution. However, the mentoring was not on a formal structured type of mentorship programme but rather on a more informal and peer type of mentoring at departmental level.

From the survey it was established that only a low percentage of respondents were aware of a REMP. The researcher is of the opinion that the faculties and departments should publicise the mentoring undertaken in some of their departments more widely to increase awareness.

Data was obtained from the interviews and surveys conducted to address the third sub-objective listed below:

- ***Explore the perceptions, attitude and preferences of researchers/ academics and managers regarding mentorship as a strategy to improve research output.***

From the interviews it was established that interviewees were of the opinion that an informal type of mentorship was favoured instead of a formal structured mentorship programme. Interviewees were of the opinion that formal REMP would not work as staff members were already over-managed and would not welcome any more management. It was felt that the informal mentoring at departmental level was working well. However, there is no formal data to benchmark its success.

From the survey conducted it was also established that a formal REMP was favoured by a majority of the respondents at departmental level. This differed to findings from the interviews with the relevant senior managers of the sample faculties. There were respondents who were willing to participate in a formal REMP either as mentors or mentees.

The benefits and disadvantages of being a mentor and being mentored were highlighted for e.g. the common benefit for both mentors and mentees was that ***“mentoring assisted in developing professional relationships.”***

The disadvantages experienced by the mentors were that mentoring increased their work load and it was not financially rewarding. The mentees highlighted ***mentoring as too time consuming***, therefore a disadvantage of being mentored.

### **Document Analysis**

Analysis of institutional documentation clearly indicated the commitment towards developing research and capacity with a view to becoming a research-focused HE institution.

Various interventions are in place some of which are provision of infrastructures; financial rewards to publishing researchers from publication subsidy; Vice-Chancellor's awards for various categories of researchers; establishment of a post-graduate centre; developing a new generation of scholars and funding for research projects. The institutional management was also of the view that 'red-tape' should be removed and more administrative support should be provided so that researchers can focus more on research.

The findings of this study are useful not only to UJ as the case study HE institution but to all HE institutions, especially merged institutions. According to Shelton (undated: 143) there is little information about the success of formal mentoring programmes in South Africa. Hence, the outcome of this study will also make a contribution to the research field by adding to the literature data base on mentorship.

Overall, evidence in this study indicates that a formal REMP is favoured.

In not having REMP, the researcher is of the opinion that this could have a negative impact for e.g. low staff morale especially for novices who may suffer from low self-esteem because they do not know how to engage in research; marginalisation of established and senior researchers; lack of focus in research development career path; the feeling of not being able to 'fit-in' within the institution; confusion and perhaps frustration.

In order for REMP to be successful it must have the active involvement of all the relevant parties concerned for e.g. line managers, the human resource department and support from the top management.

## **5.2 Recommendations**

In view of the experiences of UJ, the following recommendations are suggested to assist HE institutions, especially the merged institutions, to realise their research output goals:

- the implementation of a formal REMP;
- participants should be selected on a voluntary basis;
- the retention of retired senior academics to be mentors;
- a dedicated programme coordinator should be appointed to roll out the mentoring programme and
- institutional support.

In order for a mentoring programme to be sustainable, one of the many important aspects is to have institutional support. A retrospective view on the performance of the NRF's piloted TTK mentoring programme indicated that mentors and, to some extent mentees, were negative about institutional support i.e. basic moral, administrative and monetary support, as well as the required resources and very little acknowledgement, and also that a research culture was missing. Further to the findings, institutional support from leadership in the respective institutions was generally not forthcoming mainly due to a lack of institutional buy-in. At one institution mentors felt that research was hampered by excessive bureaucratic red tape and centralised decision-making, while at another institution, time and overall budget constraints were the major challenges. It was also noted that the Mentoring Committees were not functioning and/or fulfilling their obligations, mainly due to the institutions' mentoring facilitators and the fact that members of the committee were not being trained and given guidelines (NRF, 2006:14-15).

According to Schulze (2009:32-35) senior academics may be novice researchers and novices often prefer formal mentoring arrangements. This agrees with feedback received from the survey which showed that the majority of the respondents, who had

requested for a formal REMP, were lecturers and senior lecturers. However, it was not possible to determine whether these respondents are novice researchers.

Another recommendation is to perhaps look at the option of increasing the retirement age of scientists as in other African states, where the retirement age for scientists is coming under sharp review. Wanzala (2008:20) states that as the continent's pool of scientists dwindles, the question of retirement age for scientists in Africa draws increasing debate. The Zambian government has recently revealed that it was considering increasing the retirement age of scientists from 55 to 70 years, while the Ugandan legislators proposed that retirement age for scientists in the East African country be increased from 60 to 70. In Malawi, the age of government scientists is pegged at 55 but some institutions in the country have put in place higher retirement ages. In technology-savvy Rwanda the retirement age for scientists has been pushed up from 55 to 65 years. The official age of retirement for civil servants in Kenya is 55. However, the retirement age for scientists depends on the employer. For instance, a scientist working for the Kenyan Agricultural Research Institute retires at 65 years. According to Nyide (as quoted by Wanzala (2008:20)) early retirement undermines the science development in any country, as most scientists start publishing in their mid-forties and fifties thus early retirement does not augur well for the country.

These recommendations are based on feedback from respondents in the survey in favour of a formal REMP even though it differs from the views of the senior executives interviewed.

Also based on the feedback received from mentors that the constraints of mentoring increases their current work load and that they found mentoring financially unrewarding (Figure 7), it is also recommended that:

- mentors are given a lesser work load and
- mentors are given financial incentives.

Based on feedback from mentees in the survey that mentoring is a time consuming process (Figure 17), it is recommended that:

- mentoring is programmed within official working hours.

Although informal mentoring may be working at departmental level, there is no formalised evidence of the success of this type of mentoring that is taking place. Informal mentoring also does not provide accountability in term of standards of the mentoring and the research output. This does not imply that informal mentoring is not favoured or supported. According to Shelton (undated:146) organisational culture supporting people development will encourage and accept the possibility of informal mentoring relationships.

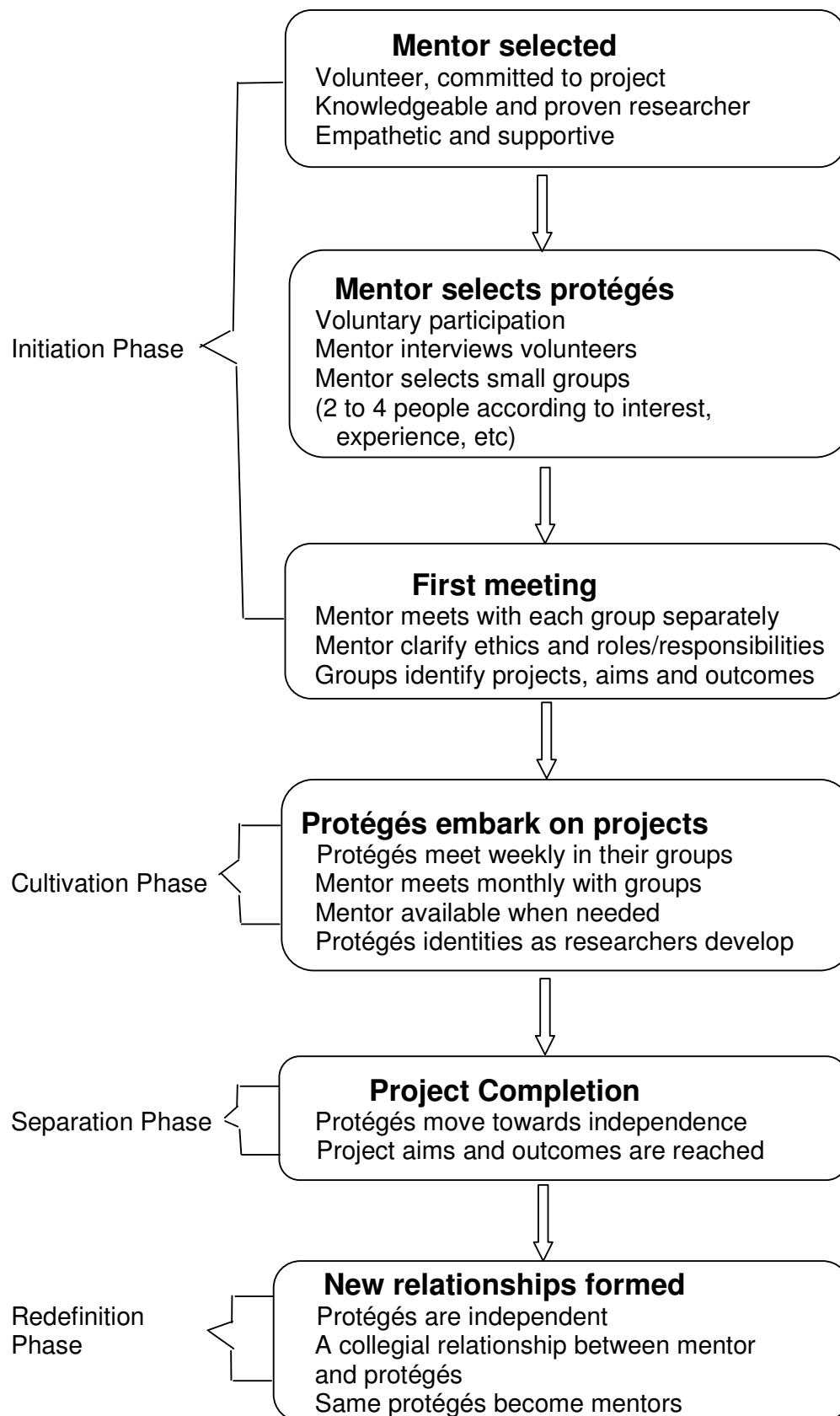
The formal REMP is also suggested on the basis of the feedback received from the survey that there are mentors and mentees who were willing to participate in the programme. However, the question of capacity in terms of managing this project will have to be taken into consideration as some of the sample Faculties felt they were under-staffed and in one case there were only a few staff members with expertise that were carrying the load of this large faculty (Faculty C) in terms of research and research publications. This issue could perhaps be addressed by retaining retired staff members with expertise.

The recommendation of a formal REMP is further supported by a report from the DoHET (2010:6). It was stated that only seven institutions produced 74% of all research publications which reflected an output ratio of 0.76 units per staff member. The other sixteen institutions produced 26% of publications with a ratio of 0.28 units per staff member. DoHET was of the opinion that this may indicate the need for staff development, infrastructure, structural development and policy and research culture at some of the sixteen institutions. The diagnosis would also have to take cognisance of the teaching loads.

Megginson & Clutterbuck (1999 as quoted by Shelton (undated: 144)) are of the view that there is a need for formal mentoring programmes because of the pressure of training and development departments to add value to the organisation as well as the inability of line managers to manage broader development issues. According to Orpen (1997 as quoted by Shelton (undated: 144)) formal mentoring programmes are potentially faster and a more effective way of developing employees and to ultimately retain talent. Research also shows that formal mentoring provides a way to pass on the organisational culture and inform protégés of internal politics.



'How' the mentoring takes place will influence the outcome. Responsibility and commitment of all role players; the setting of clear goals; the definition of roles; good communication by means of frequent meetings and a sharing of the theoretical framework guiding the research projects are important factors for mentoring (Cunningham 1999:442; Tiltman & Johnson 2007:145; Morrison-Beedy, Aronowitz & Dyne 2001:294; Pierce 1998:3 as quoted by Schulze (2009: 35)).



**Figure 32: A model for research mentoring** (Schulze, 2009:43)

Figure 32 reflects a model suggested for research mentoring as recommended by Schulze (2009:43) resulting from the findings of her study. This model was designed for an institution which is similar to UJ i.e. for the University of South Africa, which is also a comprehensive institution.

According to Schulze (2009:29) the former University of South Africa merged with HE institutions that had traditionally placed less emphasis on research. This resulted in academics from these HE institutions facing an enormous challenge in terms of meeting the University of South Africa's expected research output. This situation is no exception to UJ where ex-RAU was merged with ex-TWR, an institution that originally focused primarily on teaching and learning.

One of the objectives of the University of South Africa's research plan was to develop women, black and younger researchers to the point that they would account for not less than 30% of the total crop of researchers at the institution by 2015, which indicated a need for research mentoring for novices, in particular of young, black and women researchers (Schulze, 2009:30).

This concurs with UJ's staff development plan to guide all staff without postgraduate qualifications towards obtaining at least a Master's degree by the end of 2011 (Masuku, 2008:10). Thereafter, it is hoped that this will lead to the registration for and completion of their Doctorates thereafter becoming research active (Dean & Vice-Dean (Acting), 2009).

With both institutions having similar backgrounds and goals, the model suggested by Schulze as illustrated in Figure 32 is deemed as appropriate by the researcher for UJ.

Schulze's model (2009:43-45) as indicated in Figure 32 involves the following processes:

- mentors are selected from a group of volunteers who are knowledgeable and skilled researchers. They need to be willing to turn from self towards others so as to be empathetic, supportive and accessible. Mentorship needs to be part of the work allocation so that mentors can support more than one group of mentees

to form mentoring communities. Mentoring should be rewarded for e.g. to be considered when determining promotion or merit awards;

- mentors act as programme leaders who invite voluntary participation from novices. Interviews are conducted with novices to select suitable participants and form small groups or communities of practice according to needs and experience, research interest and personality. Gender and ethnic groups may be considered. The aim for this is to form socially cohesive groups of peers who engage in collaborative learning although, conflict and power inequalities may influence relations and learning. Mentees should be spatially close to one another, while the mentor may be from a different department, college or even institution;
- at a first meeting, mentors and mentees discuss ethics, clarify roles and responsibilities and identify research projects, aims and outcomes. Decisions are made concerning time frames. Ground rules are established;
- the groups embark on the research projects. Active learning takes place. The novice researchers are legitimate peripheral participants and the research project is the curriculum. Mentors refer participants to relevant resources when necessary;
- mentees meet frequently i.e. weekly in their groups to report on progress and discuss and debate difficulties and possible solutions. Mentors meet regularly with mentees i.e. monthly and are available for consultation as needed. Mentors give support, guidance and constructive criticism to individuals and groups as needed. As novices learn to conduct research, their identities as researchers develop. Mentors learn how to deal with individuals with different dispositions and their identities as mentors develop accordingly;
- each project should culminate in a conference paper or publication. If possible, mentoring continues until these aims are reached. This could be over a period of one or two years or more if need be and
- the relationship between mentor and mentee changes as novices becomes independent and their identities as competent researchers develop. Novices move from peripheral participation in the community of research practitioners to more central participation, although some may fail to learn. Some former mentees are able to mentor novices.

The model is useful in that it illustrates how one skilled and knowledgeable researcher can mentor several small groups of relatively inexperienced and unskilled researchers, thereby assisting in capacity building. Hence, the possibility of increasing research output is possible.

### **5.3 Future Research**

Based on the different views obtained from the interviews and survey conducted for a formal REMP, the following aspects may be explored for future studies:

- pursue a process of informal mentoring of academics as researchers in departments within the faculties;
- determine how effective the informal mentoring is in terms of research output;
- determine how this informal mentoring programme can be translated into an institutional formal REMP;
- identify how to retain expertise for long term sustainable mentoring and research output and
- implement a pilot formal REMP.

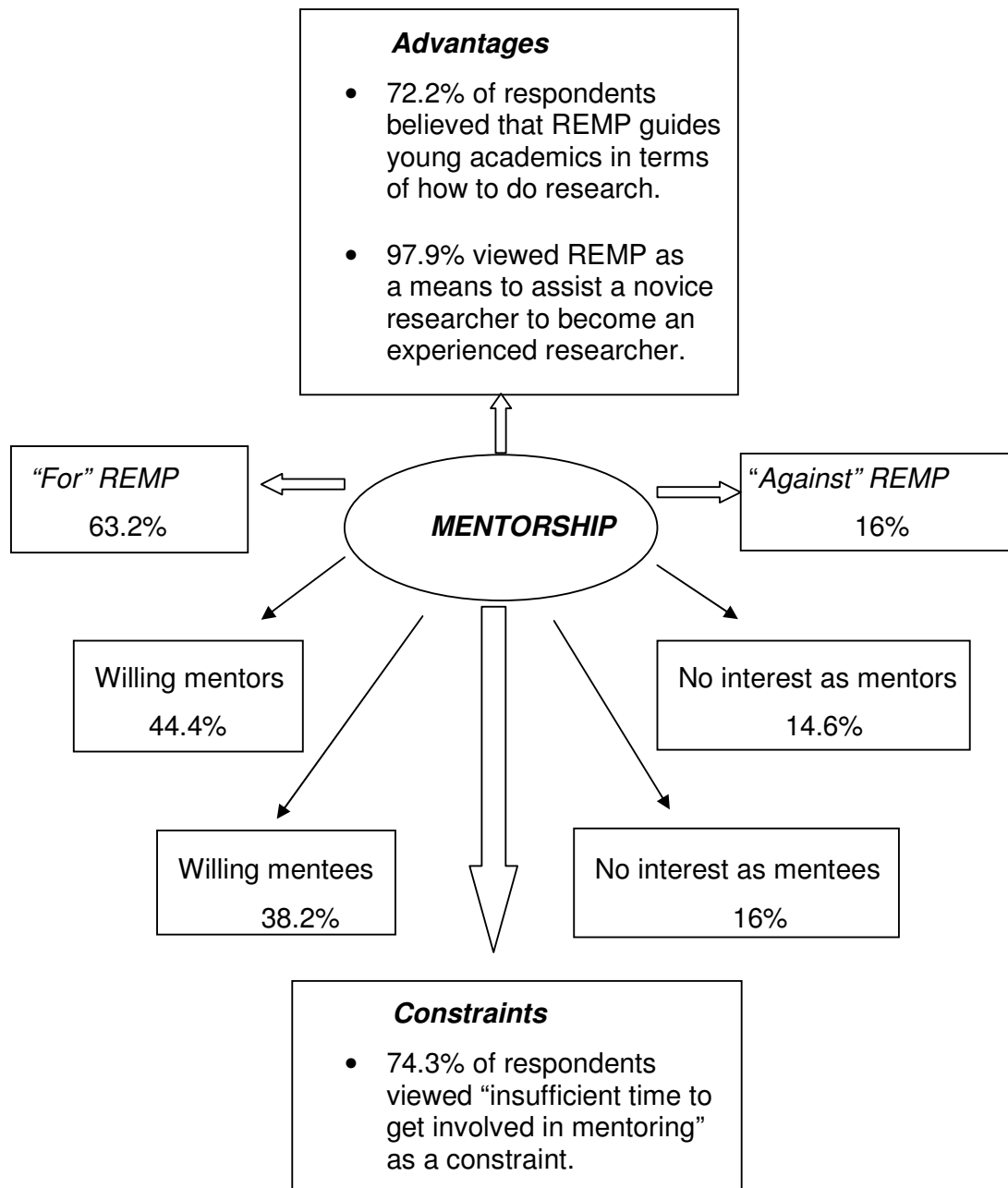
### **5.4 Summary**

In pursuit of government's aim to transform service delivery in the public sector, skilled human resource is required (Mnculwane, 2008:Chapter 2.2) to achieve this goal. In many instances, progress or development is inhibited by a lack of sound managerial and properly trained and experienced public servants to function within the system. In recognition of these needs and constraints, government has addressed these priorities in various instances of actual and proposed legislations for e.g. the White Paper on Transforming Public Service Delivery (RSA 1997 as quoted by Cameron (2009:25)) to prioritise service delivery and the White Paper on Human Resource Management in the Public Service (Department of Public Service and Administration, 1997a:42) emphasising future training and needs and other developmental interventions such as career counselling, coaching and mentoring.

This challenge is no different for the HE sector as it is emphasised in the White Paper on Education and Training (Department of Education, 1995:7) that education and

training are vital elements for human resource development. Since the re-landscaping of the HE sector, the previously dominant teaching function is now making way for the other two key competences of higher education i.e. research and community engagement. There is also pressure on academics to increase research output publications. This is an increased challenge for comprehensive institutions as there are two different levels of research culture in existence i.e. ex-RAU being a purely academic institution involved in research since inception whilst the ex-TWR focused on vocationally-oriented teaching and have to now also include research in teaching, a portfolio for which staff have very little or no knowledge of or training for, and are also expected to publish outputs.

Mentorship may be viewed as a possible sustainable capacity development initiative. This study has shown that a formal mentorship programme is favoured as a capacity building initiative, in particular, to increase research output. Some of the salient findings on mentorship in this study are highlighted in Figure 33.



**Figure 33: Salient findings on mentorship**

## 6.1 REFERENCES

Academy of Medical Sciences. [Online]. 2005. *Academy mentoring programme*. Available from: [http://www.acmedsci.ac.uk/r\\_mentor.htm](http://www.acmedsci.ac.uk/r_mentor.htm). (Accessed: 2005/07/01).

Academy of Science of South Africa (ASSAF). 2006. *Report on a strategic approach to research publishing in South Africa*. Pretoria: ASSAF.

Alt, H. 2002. Benchmarking in the globalised world and its impact on South African higher education. *South African Journal of Higher Education*, 16(1).

American College of Nuclear Physicians. [Online]. 2006. ACNP mentorship programme. Available from: <http://acnp.snm.org/index.cfm?PageID=3639&RPID=60>. (Accessed: 2006/12/12).

Asmal, K. [Online]. 2001. *National plan for higher education in South Africa*. Available from: <http://www.polity.org.za/html/govdocs/misc/higheredul.htm?rebookmark=1>. (Accessed: 2007/02/15).

Auf der Heyde, T. 2007. *Research development survey 2007: executive summary and recommendations*. Johannesburg: University of Johannesburg.

Auf der Heyde, T. 2008. Research & Innovation Division. Research administration, management and activities. *Annual Report: 2007*. Johannesburg: University of Johannesburg.

Australian Society of Archivists. [Online]. 2007. ASA mentor scheme. Available from: <http://www.archivists.org.au/asa-mentor-scheme>. (Accessed: 2008/05/05).

Badran, R. [Online]. 2005. *Young Arab Leaders initiate mentorship programme in Amman*. Available from: <http://www.ameinfo.com/56274.html>. (Accessed: 2005/07/01).



Bless, C., Higson-Smith, C. & Kagee, A. 2006. *Fundamentals of social research methods. An African perspective*. 4<sup>th</sup> Edition. Cape Town: Juta & Co. Ltd.

Bloom, D., Canning, D. & Chan, K. 2005. *Higher education and economic development in Africa*. USA: Harvard University.

Blunt, R.J.S. & Conolly, J. 2006. Perceptions of mentoring: expectation of a key resource for higher education. *South African Journal of Higher Education*, 20(2), 195-208.

Bolliger, J., Schneeberger, N. & Rohde, S. 2005. *FrauschaftWissen – a peer-mentoring programme promoting women's careers in science*. Available from: <http://www.wsl.ch/projects/frauschaftwissen/welcome-en.ehtml>. (Accessed: 2006/12/12).

Boyd, L.G. & Fresen, J.W. [Undated]. *Quality promotion and capacity development – could they come to the aid of weary South African academics?* Johannesburg: Independent QA Consultants & University of Pretoria.

Breen, C.M., Jaganyi, J.J., van Wilgen, B.W. & van Wyk, E. 2004. Research projects and capacity building. *Water SA* 30(4): 4 October.

Breitenbach, D. '08/'09. *Changing the face of postgraduate studies in South Africa*. UJadvance Tydskrif. Somer '08/'09. Johannesburg: University of Johannesburg.

Burns, I. 2006. *Mellon retiree mentorship scheme*. Circular (F 14/20) from I Burns for the Deputy Registrar (Academic and Research). 7 July. Johannesburg: University of Witwatersrand.

Cameron, R. 2009. *New public management reforms in the South African Public Service: 1999-2008. Paper presented at political studies departmental seminar, 28 April 2009*. Cape Town: University of Cape Town.

Cano, V. [Online]. 2008. *Introduction to research: research skills*. Available from: <http://www.hospiweb.scotcit.ac.uk/lectures/purpose.shtml>. (Accessed: 2008/04/02).

Cano, V. [Online]. 2009. *Foundation steps. 9. Questionnaire design*. Available from: <http://www.qmu.ac.uk/psych/Rtrek/foundation/f9.htm>. (Accessed: 2009/01/20).

Caucasus Research Resource Centres. [Online]. 2006. *Mentorship programme*. Available from: <http://www.crrc.ge/print.php/en/22/>. (Accessed: 2006/12/12).

Central Bucks School District. [Online]. 2008. *Writing research papers*. Available from: <http://www.cbsd.org/curriculum/standards/research/IA.html>. (Accessed: 2008/06/18).

Chetty, P. 2003. Research and development in technikons: lacunae and challenges. *South African Journal of Higher Education*, 17(1).

Christiansen, I.M. & Slammert, L. 2005. A multi-faceted approach to research development (I): Addressing the myths. *South African Journal of Higher Education*, 19(6), 1047-1061.

Cleveland State University. [Online]. 2006. *Statistical mentoring programme*. Available from: <http://www.csuohio.edu/stamp>. (Accessed: 2006/12/07).

Cohen, L., Manion, L. & Morrison, K. 2000. *Research methods in education*. 5<sup>th</sup> Ed. London: Routledge Falmer.

Coldwell, D. & Herbst, F. 2004. *Business research*. 1<sup>st</sup> Ed. Lansdowne: Juta & Co. Ltd.

Cooney, J. [Online]. 2008. *Mentoring – low cost, big benefits*. Available from: <http://secure.conferenceboard.ca/humanresource/mentoring-inside.htm>. (Accessed: 2008/05/05).

Cooper, D.R. & Emory, C.W. 1995. *Business research methods*. 5<sup>th</sup> Ed. Boston: Irwin.

Council on Higher Education. [Online]. 2004a. *Annual Report of the Council on Higher Education 2003/2004*. Available from: <http://www.che.ac.za/documents/d000076>. (Accessed: 2008/10/14).

Council on Higher Education. 2004b. *Improved teaching and learning resources. ITL resource No. 6A: Staff development*. Pretoria: CHE.

Court, J., Hovland, I. & Young, J. 2005. *Bridging research and policy development: evidence and the change process*. 1<sup>st</sup> Ed. Warwickshire: ITDG Publishing.

Crosby, J.C. [Online]. 2008. *CMCIS alumni society mentor program*. Available from: <http://cmcismentorprogram.wordpress.com/mentoring-program-manual/definition-of->. (Accessed: 2008/10/13).

Currey, J. ([Jill.Currey@utas.edu.au](mailto:Jill.Currey@utas.edu.au)). 2007. *RE: mentorship program for researchers*. [E-mail to:] Nundulall, R. ([reethan@uj.ac.za](mailto:reethan@uj.ac.za)). Mar. 27.

Dean & Vice-Dean (Acting). 2009. Interview in Johannesburg. (Recording in possession of author).

Denscombe, M. 2003. *The good research guide for small-scale social research projects*. 2<sup>nd</sup> Ed. Philadelphia: Open University Press.

Department of Education (1995) **see** SOUTH AFRICA. Department of Education (1995).

Department of Arts, Culture, Science and Technology (1996) **see** SOUTH AFRICA. Department of Arts, Culture, Science and Technology (1996).

Department of Education (1997a) **see** SOUTH AFRICA. Department of Education (1997a).

Department of Education (1997b) **see** SOUTH AFRICA. Department of Education (1997b).

Department of Higher Education and Training **see** SOUTH AFRICA. Department of Higher Education and Training.

Department of Public Service and Administration (1997) **see** SOUTH AFRICA. Department of Public Service and Administration.)

Department of Science and Technology (2002) **see** SOUTH AFRICA. Department of Science and Technology (2002).

Department of Science and Technology (2005) **see** SOUTH AFRICA. Department of Science and Technology (2005).

Department of Science and Technology (2006) **see** SOUTH AFRICA. Department of Science and Technology (2006).

Department of Science and Technology (2007) **see** SOUTH AFRICA. Department of Science and Technology (2007).

Department of Science and Technology (2008) **see** SOUTH AFRICA. Department of Science and Technology (2008).

DePoy, E. & Gitlin, L.N. 2005. *Introduction to research. Understanding and applying multiple strategies*. 3<sup>rd</sup>. Missouri: Elsevier Mosby.

Desai, V. & Potter, R.B. 2006. *Doing development research*. 1<sup>st</sup> Ed. London: Sage Publications.

Devlin, A.S. 2006. *Research methods. Planning, conducting and presenting research*. 1<sup>st</sup> Ed. Belmont: Thomson Wadsworth.

de Vos, A.S. 1998. *Research at grass roots. A primer for the caring professions*. 1<sup>st</sup> Ed. Pretoria: van Schaik Publishers.

Dublin City University. [Online]. 2005. *Mentorship programme a win for DCU students*. Available from: <http://www.dcu.ie/news/2005/apr/s0405i/shtml>. (Accessed: 2005/07/01).

European University Association. 2004. Purpose: research role of Europe's universities. (EAU statement prepared for the EC Conference on "The Europe of Knowledge 2020: A vision for university based research and innovation", Liege, 26 – 28 April). Unpublished.

Faculty C. 2008/2009. *Faculty research and higher degrees policy 2008/2009*. Johannesburg: University of Johannesburg.

FINWEEK. 2008. *EDUCATION. Madhouse mergers. Planned review could result in universities and technikons again separated*. 1 May. Photostat copy.

Foster, L. 2001. *Effectiveness of mentor programmes. Review of the literature from 1995 to 2000*. California: California Research Bureau.

Fox, W. & Bayat, M.S. 2007. *A guide to managing research*. 1<sup>st</sup> Ed. Lansdowne: Juta & Co. Ltd.

Frazer, L. & Lawley, M. 2000. *Questionnaire design and administration*. 1<sup>st</sup> Ed. Brisbane: John Wiley & Sons Australia, Ltd.

Gawe, N. & de Kock, C. 2002. Higher education: spectators or players in globalisation. *South African Journal of Higher Education*, 16(1).

Geber, H. 2005. Can mentoring stave off the looming crisis in Higher Education research publications? (Paper read at the FOTIM mentorship conference, October 11-12, Johannesburg). Unpublished.

Georgia Department of Technical & Adult Education. [Online]. 2008. *Mentoring programme*. Available from: <http://www.coe.uga.edu/chds/mentoring/benefits.htm>. (Accessed: 2008/05/05).

Gevers, W. 2006. *Report on a strategic approach to research publishing in South Africa*. March 2006. Pretoria: ASSAF.

Gillham, B. 2000. *Case study research method*. 1<sup>st</sup> Ed. Cornwall: MPG Books Ltd.

Goddard, W. & Melville, S. 2001. *Research methodology. An introduction*. 2<sup>nd</sup> Ed. Lansdowne: Juta & Co. Ltd.

Google. [Online]. 2007. *Definitions of quantitative research on the web*. Available from: <http://www.google.co.za/search?hl=en&defl=en&q=define:Quantitative+Research&>. (Accessed: 2007/09/09).

Gray, M.M. 2005. *What's in it for the mentor? A research study*. Revised publication. 17 February. USA: Corporate Mentoring Solutions Inc.

Grossman, J.B. & Garry, E.M. 1997. *Mentoring – a proven delinquency prevention strategy*. April 1997. Washington D.C.: U.S. Department of Justice.

Habib, A. & Morrow, S. 2007. Research, research productivity and the state in South Africa. *Journal of Higher Education in Africa*. 5(1): 113-130.

Habib, A. 2008a. Becoming a trendsetter in higher education. *Advance News Magazine, University of Johannesburg*. Spring 2008.

Habib, A. [Online]. 2008b. *South Africa: context counts in Chinese higher education*. University World News. 8 June. Available from: <http://www.universityworldnews.com/article.php?story=2008060608513865&mode=>. (Accessed: 2008/06/13).

Hatakenaka, S. [Online]. 2008. The role of higher education institutions in innovation and economic development. *International Higher Education*, Spring 2007(47). Available from: [http://www.bc.edu/bc\\_org/avp/soe/cihe/newsletter/Number47/p4\\_Hatakenaka.htm](http://www.bc.edu/bc_org/avp/soe/cihe/newsletter/Number47/p4_Hatakenaka.htm).

(Accessed on 2008/10/13)

Health 24. [Online]. 2008. *What is Research?* Available from:

[http://www.health24.com/medical/Focus\\_centres/777-2268-3162-3163,34634.asp](http://www.health24.com/medical/Focus_centres/777-2268-3162-3163,34634.asp).

(Accessed: 2008/04/02).

Higgs, P. 2002. Nation building and the role of the university: a critical reflection. *South African Journal of Higher Education*, 16(2).

Higher Education South Africa (HESA). 2006. Spirit of inquiry. Knowledge creation in South African higher education. Pretoria: HESA.

Higher Education South Africa (HESA). 2007. Higher education impact. Universities in the South African economy. Pretoria: HESA.

Hopkins, W.G. [Online]. 2000. *Quantitative research design*. Available from: <http://www.sportsci.org/jour/0001/wghdesign.html>. (Accessed: 2006/07/12).

ISI Highly Cited Researchers Version 1.1. 2007. *Browse results by country – South Africa*. Available from:

[http://hcr3.isiknowledge.com/browse\\_author.pl?page=0&Link1=Browse&valueCatego](http://hcr3.isiknowledge.com/browse_author.pl?page=0&Link1=Browse&valueCatego).

(Accessed: 2007/01/19).

Jansen, J.D. 2003. Guest editorial. On the state of South African universities. *South African Journal of Higher Education*, 17(3).

Jeenah, M. & Pouris, A. 2008. South African research in the context of Africa and globally. *South African Journal of Science*, 104(9-10), Sept./Oct. 2008.

Jinabhai, D.C. 2003. On the proposed new funding framework – a trajectory for growth or negative entropy for research technicians? *South African Journal of Higher Education*, 17(1).

Jivanjee, P. [Online]. 2006. *Underrepresented researchers mentoring programme*. Available from: <http://www.rtc.pdx.edu/pgProjMentoring.php>. (Accessed: 2006/12/07).

Kayrooz, C. & Trevitt, C. 2005. *Research in organisations and communities. Tales from the real world*. 1<sup>st</sup> Ed. Singapore: CMO Image Printing Enterprise.

Kidd, Jr., G.J. 1992. *Quality at work in research and developments*. 1<sup>st</sup> Ed. New York: Quality Resources.

Kivinen, O. & Kaipainen, P. 2002. Global market competition and higher education. *South African Journal of Higher Education*, 16(1).

Kongolo, M. [Online]. 2008. *Cross-cutting research unit. Capacity development*. Available from: <http://www.hsrc.ac.za/CD.phtml>. (Accessed: 2008/07/01).

Kothari, C.R. 1990. *Research methodology. Methods & techniques*. 2<sup>nd</sup> Ed. New Delhi: Wishwa Prakashan.

Kumar, R. 1999. *Research methodology. A step-by-step guide for beginners*. 1<sup>st</sup> Ed. London: Sage Publications Ltd.

Kumar, R. 2005. *Research methodology. A step-by-step guide for beginners*. 2<sup>nd</sup> Ed. London: Sage Publications Ltd.

Lake, L. [Online]. 2007. *About: marketing. Qualitative research*. Available from: <http://marketing.abouot.com/od/marketingglossary/1/bldefqualitres.htm>. (Accessed: 2007/02/09).



Lategan, L.O.K. & Dessels, R. 2007. The development of publication writing skills and publication opportunities: a case study in the management of research development. *Journal for New Generation Sciences*, 5(1).

le Grange, L. 2002. Challenges for higher education transformation in South Africa: integrating the local and the global. *South African Journal of Higher Education*, 16(1).

Leisyte, L. 2006. *The effects of new public management on research practices in English and Dutch universities: UNESCO forum on higher education, research and knowledge. Colloquium on research and higher education policy "Universities as centres of research and knowledge creation: an endangered species?"*, November 29-1 December, 2006. The Netherlands: University of Twente.

Letseka, M. 2008. *HSRC policy briefs summarise relevant research for decision makers*. Review 6(2). Pretoria: Human Sciences Research Council.

Lillejord, S. 2005. Knowledge production and higher education in the 21<sup>st</sup> century. *South African Journal of Higher Education*, Special Issue (19): 1315–1320.

Lindlof, T.R. & Taylor, B.C. 2002. *Qualitative communication research method*. 2<sup>nd</sup> Ed. United Kingdom: Sage Publications, Inc.

Lourens, A. ([LourensA@TUT.ac.za](mailto:LourensA@TUT.ac.za)). 2005. RE: data for Masters studies. [Email to:] Nundulall, R ([reethan@twr.ac.za](mailto:reethan@twr.ac.za)). June. 08.

Lourens, A. ([Amanda.Lourens@nwu.ac.za](mailto:Amanda.Lourens@nwu.ac.za)). 2007. Request for information. [Email to:] Nundulall, R ([reethan@uj.ac.za](mailto:reethan@uj.ac.za)). Oct. 19.

MacGregor, K. [Online]. 2008a. *Global: worldwide growth in university outreach*. University World News. 14 May. Available from: <http://www.universityworldnews.com/article.php?story=20080222101650757>. (Accessed: 2008/05/14).

MacGregor, K. [Online]. 2008b. *South Africa: engaging developments on the up*. University World News. 14 May. Available from:  
<http://www.universityworldnews.com/article.php?story=20080222100232277>.  
(Accessed: 2008/05/14).

MacGregor, K. [Online]. 2008c. *South Africa: student dropout rates alarming*. University World News. 14 May. Available from:  
<http://www.univeristyworldnews.com/article.php?story=20071025102245380>.  
(Accessed: 2008/05/14).

MacGregor, K. [Online]. 2008d. *South Africa: universities set priorities for research*. University World News. 14 May. Available from:  
<http://www.universityworldnews.com/article.php?story=20071108145540742>.  
(Accessed: 2008/05/14).

Madue, S.M. 2006. The measurement of research output of public higher education institutions in South Africa: hurdle or handle? M.Ed. thesis. University of Pretoria.

Maistry, N. ([nmaistry@uj.ac.za](mailto:nmaistry@uj.ac.za)). 2007. RE: research capacity development initiative/ programme at UJ. [Email to:] Nundulall, R ([reethan@uj.ac.za](mailto:reethan@uj.ac.za)). Dec. 04.

Mangena, M. [Online]. 2008. *R195m to boost SA's engineering, science and technology skills base*. Engineering News. Available from:  
[http://www.engineeringnews.co.za/article.php?a\\_id=134590](http://www.engineeringnews.co.za/article.php?a_id=134590). (Accessed: 2008/06/13).

Marczyk, G., DeMatteo, D. & Festinger, D. 2005. *Essentials of research design and methodology*. 1<sup>st</sup> Ed. New Jersey: John Wiley & Sons, Inc.

Masuku, C. 2008. *Leading research support at UJ*. Research Report (b). Johannesburg: University of Johannesburg.

McNeill, P. & Chapman, S. 2005. *Research methods*. 3<sup>rd</sup> Ed. New York: Routledge.

Medical Research Council. [Online]. 2008. *Research development. Opportunities for research training: MRC research training internships for black scientists*. Available from: <http://www.mrc.ac.za/researchdevelopment/restrainblack.htm>. (Accessed: 2008/05/05).

Meggison, D., Clutterbuck, D., Garvey, B., Stokes, P. & Garrett-Harris, R. 2006. *Mentoring in action. A practical guide*. 2<sup>nd</sup> Ed. Great Britain: Kogan Page Limited.

Melville, S. & Goddard, W. 1996. *Research methodology. An introduction for science and engineering students*. 1<sup>st</sup> Ed. Cape Town: Juta & Co Ltd.

Mentor. [Online]. 2006. *Keeping matches together*. Available from: [http://www.mentoring.org/program\\_staff/research\\_corner/keeping\\_matches\\_together](http://www.mentoring.org/program_staff/research_corner/keeping_matches_together). (Accessed: 2006/12/07).

Mentoring. [Online]. 2007. *A definition of mentoring*. Available from: <http://www.linkroll.com/mentoring/a-definition-of-mentoring.php>. (Accessed: 2008/10/13).

Mentoring Works. [Online]. 2007. *Definitions of mentoring*. Available from: [http://www.mentoring-works.com/topics/definitions\\_of\\_mentoring.html](http://www.mentoring-works.com/topics/definitions_of_mentoring.html). (Accessed: 2007/02/07).

Methods Tutorial. [Online]. 2008. *What are research methods?* Available from: <http://sociology.camden.rutgers.edu/jfmm/tutorial/methods.htm>. (Accessed: 2008/10/03).

Meyer, M. & Mabaso, J. 2002. *Mentoring as a way to transfer learning, and accelerate empowerment*. Available from: <http://www.workinfo.com/free/downloads/33.htm>. (Accessed: 2005/04/05).

Miller, A. 2002. *Mentoring students & young people. A handbook of effective practice*. 1<sup>st</sup> Ed. London: Kogan Page Limited.

Miller, K. [Online]. 2008. *Bloated Florida Universities losing academic quality, top researchers, report says*. Available from:  
<http://www.palmbeachpost.printthis.clickability.com/pt/cpt?action=cpt&title=Bloated+Flori>.  
(Accessed: 2008/10/10).

Mnculwane, V.V. 2008. An assessment of the implementation of the service delivery improvement policy in the Department of Arts, Culture and Tourism in KZN. M.PA thesis. University of Stellenbosch.

Ministry of Education (2001) **see** SOUTH AFRICA, Ministry of Education (2001).

Mohamed, S.E. [Online]. 2005. *Community engagement in South African higher education institutions*. Available from:  
[http://www.vosesa.org.za/focus/vol1\\_no3/article\\_1.html](http://www.vosesa.org.za/focus/vol1_no3/article_1.html). (Accessed: 2008/10/13).

Mohan-Ram, V. [Online]. 1999. *Mentoring at NIH*. Available from:  
[http://sciencecareers.sciencemag.org/career\\_development/previous\\_issues/articles/028](http://sciencecareers.sciencemag.org/career_development/previous_issues/articles/028).  
(Accessed: 2008/05/05).

Monash University. [Online]. 2008a. *Department of Business Law and Taxation. Research Strategic Plan 2007 – 2009*. Available from:  
[http://66.102.9.104/search?q=cache:ID\\_EHNxzEycJ:www.buseco.monash.edu.au/blt/](http://66.102.9.104/search?q=cache:ID_EHNxzEycJ:www.buseco.monash.edu.au/blt/).  
(Accessed: 2008/01/02).

Monash University. [Online]. 2008b. *Mentoring at Monash: A guide for mentees and mentors – women's leadership and advancement scheme*. Available from:  
<http://www.adm.monash.edu/sss/equity-diversity/wlas/guide-for-mentees-and-mentor>.  
(Accessed: 2008/05/05).

Naidoo, P. & Savage, M. 1998. *African science and technology education into the new millennium: Practice, policy and priorities*. 1<sup>st</sup> Ed. Cape Town: Juta & Co. Ltd.

Naidoo, N.A. & Tshivhase, A.C. 2003. Mentored academic writing for higher education in South Africa. *South African Journal of Higher Education*, 17(3).

National Commission on Higher Education (1996) **see** SOUTH AFRICA, National Commission on Higher Education (1996).

National Institute of Mental Health. [Online]. 2008. *Role of research in improving the understanding and treatment of anxiety disorders*. Available from:  
<http://www.nimh.nih.gov/health/publications/anxiety-disorders/research.shtml>.  
(Accessed: 2008/07/06).

New York City. [Online]. 2005. *Assembly standing committee on children and families. Notice of Public Hearing*. Available from:  
<http://assembly.state.ny.us/comm/Children/20050429>. (Accessed: 2008/05/05).

Nigro, N. 2003. *The everything. Coaching and mentoring Book. How to increase productivity, foster talent and encourage success*. 1<sup>st</sup> Ed. Massachusetts: Adams Media Corporation.

NRF. 2005. *The NRF evaluations and rating system. Facts - Figures*. Pretoria: NRF.

NRF. 2006. *Evaluation report for the THUTHUKA pilot mentoring programme*. Pretoria: NRF. (Unpublished).

NRF. 2007a. *Draft: the strategic plan of the national research foundation. NRF Vision 2015*. Pretoria: NRF.

NRF. [Online]. 2007b. *Education and the challenges for change*. Available from:  
<http://www.nrf.ac.za/focuSouthAfricareas/educate/>. (Accessed: 2007/02/04).

NRF. 2007c. *Evaluations and rating. Facts and figures*. Pretoria: NRF.

NRF. 2007d. [Online]. From brain drain to brain gain. Available from: [http://www.nrf.ac.za/media/2007\\_09\\_20.stm](http://www.nrf.ac.za/media/2007_09_20.stm). (Accessed: 2008/06/18).

NRF. [Online]. 2007e. *South African PhD project. Creating strength and diversity in the South African public and private sector*. Available from: [http://www.nrf.ac.za/doc/phd\\_project\\_2007.pdf](http://www.nrf.ac.za/doc/phd_project_2007.pdf). (Accessed: 2008/08/11).

NRF. 2008. *SARChI briefing – UJ*. 26 September. Pretoria: NRF.

NSELE, N. 2007. Interview. Johannesburg (Notes in possession of author).

Nuthall, K. [Online]. 2008. *Europe: basic research gets a new champion*. University World News. 22 June. Available from: <http://www.universityworldnews.com/article.php?story=20080620085108489>. (Accessed: 2008/06/23).

O'Brien, M.R. [Online]. 2008. *Research matters: learning, teaching and the role of research*. Available from: <http://www.ukcle.ac.uk/directions/previous/issue7/obrien.html>. (Accessed: 2008/07/04).

Olivier, J. ([joyce.olivier@up.ac.za](mailto:joyce.olivier@up.ac.za)). 2007. Mentorship programme. [Email to:] Nundulall, R ([reethan@uj.ac.za](mailto:reethan@uj.ac.za)). Oct. 26.

OnQ. 2009. *HEQC audit: notes on verbal feedback by the panel on 21 August 2009*. October 2009. Volume 4. Johannesburg: University of Johannesburg.

Pandor, N. [Online]. 2007. *Address by the Minister of Education, Naledi Pandor MP, at the Academy of Science of South Africa annual awards ceremony, University of Pretoria*. 26 November. Available from: <http://www.education.gov.za/dynamic/dynamic.aspx?pageid=306&id=6913>. (Accessed: 2008/04/04).

Pandor, N. [Online]. 2008. *Remarks by the Minister of Education, Naledi Pandor MP, at the handing over of the Community Higher Education Service Partnership (CHESP) from JET to the Council on Higher Education (CHE), Johannesburg. 9 September.* Available from: <http://www.search.gov.za/info/previewDocument.jsp?dk=%2Fdata%2Fstatic%2Finfo>. (Accessed: 2008/10/13).

Potter, D.L. [Online]. 2008. *Is George Mason a learning-centered university? Section four: the role of research.* Available from: [http://www.doit.gmu.edu/archives/feb98/dpotter\\_5.htm](http://www.doit.gmu.edu/archives/feb98/dpotter_5.htm). (Accessed: 2008/07/04).

Pouris, A. undated. *The impact of rating researchers on scientific output: the case of South African universities.* Pretoria: University of Pretoria.

Pouris, A. 2007. The National Research Foundation's rating system: why scientists let their ranking lapse. *South African Journal of Science*, 103(11-12), Nov./Dec. 2007.

Power, M. 2006a. Local boffins among world's top scientists. *Sunday Times*. Nov. 12:5.

Power, M. 2006b. Making the grade: SA varsities rated. *Sunday Times*, Nov. 12: 5.

Pretorius, J. ([jenny@vut.ac.za](mailto:jenny@vut.ac.za)). 2007. FW: request for information – mentorship programme. [Email to:] Nundulall, R ([reethan@uj.ac.za](mailto:reethan@uj.ac.za)). Nov. 13.

Ramrathan, S. 2005. Workplace discrimination against Durban University of Technology (DUT) trainees within the hotel and catering industry. M.Tech. Thesis. Durban University of Technology.

Ramrathan, P. 2007. Interview. Durban. (Recording in possession of author).

Research 2003. [Online]. 2008. *Framework of research and support.* Available from: <http://www.research2003.uct.ac.za/strat/frame.php>. (Accessed: 2008/05/14).

Research Africa. 2008a. *African scientists call for change in university research ranking criteria*. 24 June. Cape Town: Bandwidth Barn.

Research Africa. 2008b. *UK parliament releases report on global migration of scientists*. 22 July. Cape Town: Bandwidth Barn.

Research & Innovation Division. 2008. *Summary of research output from 2006 submitted to Department of Education*. Johannesburg: University of Johannesburg.

Research Policy & Strategy. 2009. Johannesburg: University of Johannesburg.

Research Report. 2008a. Johannesburg: University of Johannesburg: Johannesburg.

Research Report. 2008b. Johannesburg: University of Johannesburg: Johannesburg.

Research top priority at UJ. 2007. Citizen, Supplement A. October 18:1.

Rex Marine Genomics Europe. [Online]. 2006. *GAP mentoring programme*. Available from: <http://marine-genomics-europe.org/index2.php?ppid=27&mode=libre&rub=b>. (Accessed: 2006/12/12).

Rolfe, A. [Online]. 2008. *Mentoring works. Definitions of mentoring*. Available from: [http://www.mentoring-works.com/definitions\\_of\\_mentoring.html](http://www.mentoring-works.com/definitions_of_mentoring.html). (Accessed: 2008/10/13).

Rugg, G. & Petre, M. 2007. *A gentle guide to research methods*. 1<sup>st</sup> Ed. Berkshire: Open University Press.

Russell, M. [Online]. 2009. *Data acquisition: closed-ended questionnaire response format*. Available from: <http://ezinearticles.com/?Data-Acquisition:-Closed-Ended-Questionnaire-Response-F>. (Accessed: 2009/01/20).



Salmi, J. [Online]. 2006. *II Perspectives of international organizations and of industry. Developing countries and the global knowledge economy: new challenges for tertiary education*. Available from: <http://pub.uvm.dk/200/unescoworkshop/kpa02.html>.

(Accessed: 2008/05/22).

Sapsford, R. & Jupp, V. 2006. *Data collection and analysis*. 2<sup>nd</sup> Ed. London: Sage Publications Ltd.

Sarantakos, S. 2007a. *A toolkit for quantitative data analysis using SPSS*. 1<sup>st</sup> Ed. New York: Palgrave MacMillan.

Sarantakos, S. 2007b. *Data analysis. Volume IV*. 1<sup>st</sup> Ed. London: Sage Publications Ltd.

Schalekamp, M. [Online]. 2005. *The benefits of mentoring*. Available from: <http://www.aim.org.za/articles/20050914>. (Accessed: 2008/05/05).

Schnetler, J., Stoker, D.J., Dixon, B.J., Herbst, D. & Geldenhuys, E. 1989. *Survey methods and practice*. Unknown: Human Sciences Research Council.

Schulze, S. 2003. *Views on the combination of quantitative and qualitative research approaches*. *Progression 2003* 25(2): 8-20. Pretoria: University of South Africa.

Schulze, S. 2009. A model for research mentoring in higher education: a case study in the field of education. *Journal of Educational Studies*, Volume 8 (4) 2009.

Science for Society. 2008. ASSAF and IAMP host a joint scientific writing workshop. *Science for Society*, 1(1), March.

Self-Evaluation Report (SER). 2009. *Institutional quality audit 2009. From merger to(wards) institutional unity*. May 2009. Johannesburg: University of Johannesburg.

Seymour, L-A. ([Seymour@nrf.ac.za](mailto:Seymour@nrf.ac.za)). 2010. Bilateral programmes. [Email to:] Nundulall, R ([reethan@uj.ac.za](mailto:reethan@uj.ac.za)). January, 21.

Shamsuddin, D. 2003. *Mentoring*. Singapore: National Library Board.

Shelton, D.E. (Undated). An evaluation of formal mentoring programmes within two South African organizations. Masters in Commerce thesis. Rhodes University.

Silverman, D. 2006. *Interpreting qualitative data*. 3<sup>rd</sup> Ed. London: Sage Publications Ltd.

Simmering, M. [Online]. 2007. Mentoring - positive outcomes of mentoring relationships, gender, diversity, and men. Available from:

<http://www.referenceforbusiness.com/management/Mar-No/Mentoring.html>.

(Accessed: 2008/10//13).

Snewin, V. 2008. *Strengthening Africa's research base*. Research Global. February, 2008 (18). London: Association of Commonwealth Universities.

SOUTH AFRICA. Department of Education. 1995. *White Paper on Education and Training*. [Online]. Available from: mhtml:file://C:\Documents and Settings\reethan\Local Settings\Temporary Internet Files. (Accessed: 2010/4/3).

SOUTH AFRICA. Department of Arts, Culture, Science and Technology. 1996. White Paper on Science and Technology. *Preparing for the 21<sup>st</sup> century*. Sept. 4. Pretoria: Government Printers.

SOUTH AFRICA. National Commission on Higher Education. 1996. *An overview of a new policy framework for higher education transformation*. Pretoria: Government Printers.

SOUTH AFRICA. Department of Public Service and Administration. 1997. White Paper on Human Resource Management in the Public Service. *Government Gazette*, 1S97:42, December 3. (No. 13594:3).

- SOUTH AFRICA. 1997. Higher Education Act 101 of 1997. Pretoria: Government Printer.
- SOUTH AFRICA. Department of Education. 1997a. Education White Paper 3. A programme for the transformation of higher education. *General Notice* 1196 of 1997, July 24. Pretoria: Government Printers.
- SOUTH AFRICA. Department of Education. 1997b. Policy and procedures for measurement of research output of public higher education institutions. Pretoria: Government Printers.
- SOUTH AFRICA. Ministry of Education. 2001. *Draft national plan for higher education in South Africa*. Pretoria: Government Printers.
- SOUTH AFRICA. 2003. Higher Education Act, 1997 (Act no. 101 of 1997). Merger of public higher education institutions. The Rand Afrikaans University and the Technikon Witwatersrand. *Government Gazette*, 25737:31, Nov. 14. (Regulation Gazette No. 1702).
- SOUTH AFRICA. Department of Science and Technology. 2002. *South Africa's national research and development strategy*. Pretoria: Government Printers.
- SOUTH AFRICA. Department of Science and Technology. 2005. *Science and technology*. [Online]. Available from:  
<http://www.gcis.gov.za/publications/pocketguide/2005/science05.pdf>.  
(Accessed: 2008/10/13).
- SOUTH AFRICA. Department of Science and Technology. 2006. *Media release: New mentoring programme to help optimise skills development*. [Online]. Available from:  
<http://www.dst.gov.za/media-room/press-releases-1/new-mentoring-programme>.  
(Accessed: 2008/04/04).
- SOUTH AFRICA. Department of Science and Technology. 2007. *National survey of research and experimental development 2005/6*. Pretoria: Government Printers.

SOUTH AFRICA. Department of Science and Technology. 2008. *National survey of research and experimental development 2006/7*. Pretoria: Government Printers.

SOUTH AFRICA. Department of Higher Education and Training. 2010. Report on the evaluation of the 2008 institutional research publication outputs. Pretoria: Government Printers.

South Africa Info. [Online]. 2003. *Transforming tertiary education*. Available from: [http://www.southafrica.info/ess\\_info/sa\\_glance/education/higheredplan.htm](http://www.southafrica.info/ess_info/sa_glance/education/higheredplan.htm). (Accessed: 2007/02/15).

Stewart, D.W. & Kamins, M.A. 1993. *Secondary research. Information sources and methods*. 2<sup>nd</sup> Ed. London: Sage Publications, Inc.

Steynberg, L., Grundling, J.P., de Jager., J.W. & Ekulugo, F. 2005. Evaluation of South African tertiary institutions' competitive orientation toward internationalisation. *South African Journal of Higher Education*, Special Issue (19):1267-1281.

Studman, C. 2005. *Motivating staff: towards a research culture*. Research Global. October 2005, Issue 11. London: Chandlers Printers Ltd.

Study South Africa. [Online]. 2007. *Research and development*. Available from: [http://www.studysa.co.za/index.php?option=com\\_content&task=view&id=42&Itemid](http://www.studysa.co.za/index.php?option=com_content&task=view&id=42&Itemid). (Accessed: 2007/02/19).

Taflinger, R.F. [Online]. 1996. *Introduction to research*. Available from: <http://www.wsu.edu:8080/-taflinge/research.html>. (Accessed: 2008/06/18).

Tashakkori, A. & Teddlie, C. 1998. *Mixed methodology. Combining qualitative and quantitative approaches*. 1<sup>st</sup> Ed. California: Sage Publications Inc.

TDL IRT 2005 Mentoring Program. 2005. *Introduction to mentoring*. Available from: <http://74.125.77.132/search?q=cache:Lu8ofiMMbS8J:www.supplychainvictoria.com.a>. (Accessed: 2010/03/06).

The Concise Oxford Dictionary. 2001. 10<sup>th</sup> Ed. New York: Oxford University Press Inc.

The Oxford Learning Institute. [Online]. 2006-7. *Annual Report 2006-7: Annexes*. Available from: <http://www.learning.ox.ac.uk/oli.php?page=284>. (Accessed: 2008/05/23).

Thornhill, C. undated. *Prerequisites for effective service delivery*. Pretoria: University of Pretoria.

Thulstrup, E.W., Hansen, J.A. & Gaardhoje, J.J. [Online]. 2006. *I Recommendations. Capacity building in higher education and research: A key component of efficient global development*. Available from: <http://pub.uvm.dk/2006/unescoworkshop/kap01.html>. (Accessed: 2008/05/22).

Trochim, W.M.K. 2006. *Research methods knowledge base*. [E-mail to:] Nundulall, R ([reethan@uj.ac.za](mailto:reethan@uj.ac.za)). November, 13.

UK Geocities. [Online]. 2007. *Qualitative and quantitative research*. Available from: [http://uk.geocities.com/balihar\\_sanghera/ipsrmehrigiulqualitativevequantitativereasearch](http://uk.geocities.com/balihar_sanghera/ipsrmehrigiulqualitativevequantitativereasearch). (Accessed: 2007/02/09).

University of California, Berkeley. 2005. *Career development tools: self-development. Mentoring*. Available from: <http://thecareerplace.berkeley.edu/mentor.htm>. (Accessed: 2010/03/16).

University of California. 2008. *Graduate research mentorship programme*. Santa Barbara: University of University.

University of Cape Town. 2007. *Research Report*. Cape Town: University of Cape Town.

University of East London. [Online]. 2005. *Celebration of success for disability mentoring scheme. News Release*. 21 June. Available from:  
[http://www.eul.ac.uk/news/press\\_releases/releasees/dms.htm](http://www.eul.ac.uk/news/press_releases/releasees/dms.htm). (Accessed: 2005/07/01).

University of Fort Hare. [Online]. 2008. *Evaluating the information. Primary vs secondary sources*. Available from: <http://www.ufh.ac.za/Library/Infolit/primary.html>.  
(Accessed: 2008/12/08).

University of Johannesburg. 2005. *Ref. md. doe. summary of outputs from 2005 to current*. Johannesburg: University of Johannesburg.

University of Johannesburg. 2009. *Policy: community engagement*. Johannesburg: University of Johannesburg.

University of Leeds. [Online]. 2007. *Good practice in research mentoring: Guidelines for Faculties and Schools*. Available from:  
<http://www.leeds.ac.uk.sddu/research/mentoring.html>. (Accessed: 2008/05/05).

University of Melbourne. [Online]. 2007. *University plan: growing esteem: research and research training*. Available from:  
<http://growingesteem.unimelb.edu.au/2007universityplan/research.html>.  
(Accessed: 2008/01/02).

University of Southern Queensland. [Online]. 2006. *USQ beyond education. Mentee role*. 14 February. Available from:  
<http://www.usq.edu.au/beyondeducation/mentoring/mentees/menterol.htm>.  
(Accessed on: 2008/05/05).

University of Stellenbosch. 2007. *Proposed mentor programme in teaching and research for lecturers at SU*. Cape Town: University of Stellenbosch.

University World News. [Online]. 2008a. *KENYA: PhDs rare in African universities*. 13 July. Available from:  
<http://www.universityworldnews.com/article.php?story=20080711103527889>.  
(Accessed: 2008/07/14).

University World News. [Online]. 2008b. *Special report: universities and community engagement*. 24 February. Available from:  
[http://www.univeristyworldnews.com/publication/archives.php?mode=archive&p\\_id=](http://www.univeristyworldnews.com/publication/archives.php?mode=archive&p_id=).  
(Accessed: 2008/05/14).

van der Walt, F. ([fvanderwalt@uj.ac.za](mailto:fvanderwalt@uj.ac.za)). 2010a. RE: chapter 2 – updated information on MCDM project. [Email to: Nundulall, R ([reethan@uj.ac.za](mailto:reethan@uj.ac.za))]. February 24.

Van der Walt, F. 2010b. *Proposal on research capacity development*. May 2010. Johannesburg: University of Johannesburg.

van Niekerk, L.J. & Venter, E. 2002. (De)constructing globalisation. *South African Journal of Higher Education*, 16(1).

VC Bulletin. 2009. *From the Vice-Chancellor*. Johannesburg: University of Johannesburg.

Venter, W. ([wilna@hesa.org.za](mailto:wilna@hesa.org.za)). 2007. *Research outputs*. [E-mail to:] Nundulall, R ([reethan@uj.ac.za](mailto:reethan@uj.ac.za)) Feb. 5.Mar. 29.

Waghid, Y. & le Grange, L. 2003. Research and development in higher education: rating or not? *South African Journal of Higher Education*, 17(1).

Walliman, N. 2005. *Your research project*. 2<sup>nd</sup> Ed. London: Sage Publications.

Wanzala, J. 2008. *No early rest for Africa's greying scientists*. Research Africa. 27 May. Cape Town: Bandwidth Barn.

Warwick, D.P. & Lininger, C.A. 1975. *The sample survey: theory and practice*. 1<sup>st</sup> Ed. New York: McGraw-Hill Inc.

Wasserfall, M. 2002. The influence of the match between mentor and mentee on the success of a mentorship programme. M.A dissertation. University of South Africa.

Welman, J.C., Kruger, S.J. & Mitchell, B. 2005. *Research methodology*. 3<sup>rd</sup> Ed. Cape Town: Oxford University Press.

Yin, R.K. 1994. *Case study research. Design and methods*. 2<sup>nd</sup> Ed. California: Sage Publications, Inc.



## ***ANNEXURE A***

### **Letter of informed consent and questionnaire**

15 March 2009

Dear Colleagues

I am currently studying for a Masters Degree in Public Management and am undertaking a research project that explores ***"Mentorship as a strategy to improve research output at tertiary institutions"***. A case study will be pursued on the above topic at the University of Johannesburg (UJ).

For the purpose of this study, **mentorship** refers to the *provision of research guidance and assistance to novice researchers on either a formal or informal basis*. A **mentor** provides assistance and guidance while a **mentee** (or protégé) is the person being mentored, i.e. receives assistance and guidance. ***(NB: Mentoring is different from supervision – supervision is whereby a supervisor accepts the responsibility to watch over an activity or task being carried out by someone (a supervisee, e.g. a student) and ensure that he/she performs it correctly).***

The aim of this survey is to gauge your views on a possible mentorship programme for researchers at UJ.

***I kindly request your assistance in completing the attached questionnaire by pressing the control button and clicking on the attached link for anonymity –***  
[http://take-survey.com/statkon/Mentorship\\_survey.htm](http://take-survey.com/statkon/Mentorship_survey.htm)

It should take approximately 10 minutes of your time. Your participation, which is voluntary, is of the utmost importance to this study. The Dean of your faculty has given the approval to conduct this survey (see attached document).

I am aware of your heavy workload but it would be appreciated if you could please submit your completed questionnaire by Sunday, 22 March 2009.

Should you have any queries regarding this survey, you are welcome to contact me via email or the numbers below.

Thank you for your willingness to participate in this study.

Sincerely

Reetha Nundulall  
Head: Research Administration  
Research and Innovation Division  
Room 169 - 1<sup>st</sup> Floor  
Administration Building  
Doornfontein Campus  
Phone : 011-559 6598  
Fax : 011-559 6279  
Cell : 083-6977529  
Email : [reethan@uj.ac.za](mailto:reethan@uj.ac.za)

## **SURVEY ON A MENTORSHIP PROGRAMME FOR RESEARCHERS**

### **Mentorship as a strategy to improve research output at tertiary institutions: a case study of University of Johannesburg**

#### **THIS QUESTIONNAIRE CONSISTS OF 4 SECTIONS**

**Section A and D is compulsory.**

**Then kindly complete (if applicable) either:**

**Section B (if you are/were a mentor) *or***

**Section C (if you are/were a mentee) *or***

**Section B and C respectively (if you are/were a mentor and mentee at the same time)**

#### **Section A – Background information**

**This section of the questionnaire refers to background and biographical information.**

##### **A1. Your gender**

Male	
Female	

##### **A2. Your race**

African	
Coloured	
Asian	
White	

##### **A3. Your age category**

Younger than 25	
25 to 34 years	
35 to 44 years	
45 to 54 years	
55 to 64 years	
65 or older	

##### **A4. How many completed years have you been employed at the UJ (including its predecessors before the merger, i.e. former TWR, RAU, Vista Campuses)?**

Less than 1 year	
From 1 - 3 years	
From 4 - 6 years	
From 7 - 9 years	
From 10 – 15 years	
More than 15 years	

##### **A5. What is the nature of your employment contract with the UJ? Mark ONE option only**

Permanent and full-time at 40 hours per week	
Temporary and full-time for 40 hours per week	
Permanent part-time (less than 40 hours per week)	
Temporary (less than 40 hours per week)	
Contract	
Other (please specify)	

##### **A6. What is your highest completed academic qualification?**

Three-year diploma	
Three-year degree	

Four-year diploma (e.g. B Tech degree)	
Four-year degree (e.g. Honours degree)	
Masters degree	
Doctorate	

**A7. In what year did you obtain your HIGHEST qualification as indicated in Q.A6 above?**

**A8. In which ONE of the following faculties are you employed?**

Faculty of Engineering and the Built Environment	
Faculty of Humanities	
Faculty of Management	
Faculty of Science	

**A9. What position do you currently hold in the faculty?**

Junior lecturer	
Lecturer	
Senior lecturer	
Associate professor	
Professor	
Other (please specify)	

**A10. For how many complete years have you been employed in your CURRENT position?**

Less than 1 year	
From 1 - 3 years	
From 4 - 6 years	
From 7 - 9 years	
From 10 - 15 years	
More than 15 years	

**A11. At which of the following levels were you providing supervision from 2005-2008 (Mark all that are applicable to you)**

B Tech level	
Honours level	
Extra-curricular course level	
Masters level (course-work master's)	
Masters level (research master's)	
Doctoral students	

**A12. How many students did you supervise from 2005-2008?**

B Tech level	
Honours level	
Masters level (course-work master's)	
Masters level (research master's)	
Doctoral students	

**A13. Are you currently registered for a further qualification at UJ?**

Yes	
No	

**A14. For which qualification are you currently registered?**

B Tech degree	
Honours degree	
Masters degree	
Doctorate	

**A15. Have you mentored or are you currently mentoring researchers (researchers refer to staff and post graduate students)?**

Yes	
No	

## Section B - Mentors

### TO BE COMPLETED BY MENTORS ONLY

This section of the questionnaire is aimed to obtain insight into the mentor's perception towards mentoring.

**B1. How many years of experience do you have mentoring researchers (researchers refer to staff and post graduate students)?**

Less than 1 year	
Between 1 – 3 years	
Between 4 – 6 years	
More than 6 years	

**B2. How many articles have you published in accredited journals in the last 5 years?**

**B3. Are you a NRF rated researcher?**

Yes	
No	

**B4. On what basis did you mentor or are currently mentoring? (Mark all that is applicable to you)**

A formal basis	
An informal basis	

**B5. Approximately how many people have you mentored in total?**

**B6. How long does it take you to mentor a single researcher?**

Less than 1 year	
Between 1 – 3 years	
Between 4 – 6 years	
More than 6 years	

**B7. Do you have the opportunity to choose whom you mentor?**

Yes	
No	

**B8. Have you, in collaboration with your mentee(s): (Mark all that is applicable to you)**

	Yes	No
Publish articles in accredited DoE Journals?		
Publish chapters in books?		
Present papers at peer-reviewed conferences?		

**B9. To what extent do you agree or disagree with the following statement? (One response per statement only)**

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral/ Indifferent</i>	<i>Agree</i>	<i>Strongly Agree</i>
B9.1 There should be a formal mentorship programme at UJ					
B9.2 Academic staff at UJ should mentor UJ researchers only					
B9.3 Academic staff at UJ should be allowed to mentor researchers at other universities					
B9.4 Mentoring is personally rewarding					
B9.5 Mentoring advances my academic career					
B9.6 Mentoring increases my confidence					

B9.7 Mentoring should be used as a criteria for promotion					
B9.8 Mentoring is a waste of my time at work					
B9.9 A mentee is reluctant to follow the advice of the mentor					
B9.10 Mentoring is an optimal supervision strategy					
B9.11 There should be tangible rewards for mentors					
B9.12 Faculties should arrange regular seminars to assist mentees					
B9.13 Workshops on research strategies is a form of mentoring					
B9.14 Mentors should be responsible for public dissemination of research findings					
B9.15 A mentor's attendance at conferences increase access to new ideas					
B9.16 A mentee's attendance at conferences increase access to new ideas					
B9.17 A mentor's industrial visit for improved supervision is essential to the mentoring process					
B9.18 A mentee's industrial visit for improved supervision is essential to the mentoring process					

**B10. Which of the following has benefitted you as a mentor? (Mark all that are applicable to you)**

Mentoring increases my job satisfaction	
Mentoring facilitates self-reflection on my research	
Mentoring assists in developing professional relationships	
Mentoring promotes peer recognition	
Mentoring facilitates collegial staff relations	
Mentoring facilitates professional development	
Mentoring improves my communication skills	
Mentoring improves my observation skills	

***If there are other benefits to the mentoring process, please specify in the space provided:***

.....

**B11. Which of the following has been a constraint to you as a mentor? (Mark all that are applicable to you)**

Mentoring increases my current work load	
Mentoring is financially unrewarding	
Mentoring makes the mentee totally dependent on the mentor	
Mentoring hinders a mentor's career advancement	
Mentoring is a waste of time	

***If there are other constraints to the mentoring process, please specify in the space provided:***

.....

**B12. Have you been mentored or are you currently being mentored as a researcher?**

Yes	
No	

## **Section C – Mentees**

**THIS SECTION TO BE COMPLETED BY FORMER MENTEES OR THOSE THAT ARE CURRENTLY BEING MENTORED**

**This section of the questionnaire is aimed at assessing mentees' experiences and opinions about mentoring.**

**C1. When was the last time you were mentored?**

I am currently being mentored	
I was mentored 1 – 3 years ago	
I was mentored 4 – 6 years ago	
I was mentored 7 years ago or earlier	

**C2. For how long have you been mentored?**

Less than 1 year	
Between 1 – 3 years	
Between 4 – 6 years	
More than 6 years	

**C3. On what basis were you mentored?**

A formal basis	
An informal basis	

**C4. Have you, in collaboration with your mentor: (Mark all that is applicable to you)**

	Yes	No
Publish articles in accredited DoE Journals?		
Publish chapters in books?		
Present papers at a peer-reviewed conference?		

**C5. How many articles did you publish in accredited journals in the last 5 years?**

**C6. Are you a NRF rated researcher?**

Yes	
No	

**C7. Which of the following do you believe to be constraints of being a mentee? (Mark all that are applicable to you)**

It is a time consuming process	
Mentors have unrealistic expectations	
Mentors lack commitment	

***If there are other constraints to the mentoring process, please specify in the space provided:***

.....

**C8. Which of the following do you believe are benefits of being a mentee? (Mark all that are applicable to you)**

Being mentored improves a mentee's self-confidence	
Being mentored offers a mentee personal professional development	
Mentors give valuable advice to mentees	
Mentors assist mentees to acquire new knowledge	
Mentors provides practical insight to mentees	
Mentors reduces mentees' stress levels	
Mentors provide mentees access to research networks	
Mentors reassure mentees	
Mentors assist mentees in reaching their research goals	



***If there are other benefits in the mentoring process, please specify in the space provided:***

.....

**C9. To what extent do you agree or disagree with the following? (Please use the scale provided)**

	<b><i>Strongly Disagree</i></b>	<b><i>Disagree</i></b>	<b><i>Neutral/ Indifferent</i></b>	<b><i>Agree</i></b>	<b><i>Strongly Agree</i></b>
C9.1 There should be a formal mentorship programme at UJ					
C9.2 There should be an informal mentorship programme at UJ					
C9.3 Recommend colleagues with relevant expertise to become involved in a mentorship programme					
C9.4 Being mentored is personally rewarding					
C9.5 Being mentored is academically rewarding					
C9.6 Being mentored increases one's research output					
C9.7 Being mentored is a waste of time					
C9.8 Mentoring can be used as an optimal supervision strategy					
C9.9 There should be tangible rewards for mentors					
C9.10 Faculties should arrange regular seminars to assist mentees					
C9.11 Workshops on research strategies is a form of mentoring					
C9.12 Mentors should be responsible for public dissemination of research findings					
C9.13 A mentor's attendance at conferences increase access to new ideas					
C9.14 A mentee's attendance at conferences increase access to new ideas					
C9.15 A mentor's industrial visit for improved supervision is essential to the mentoring process					
C9.16 A mentee's industrial visit for improved supervision is essential to the mentoring process					

## Section D

### TO BE COMPLETED BY ALL RESPONDENTS

**This section of the questionnaire is aimed at obtaining information about academic employees' views on a research mentorship programme at UJ. Please answer each question by ticking the appropriate block(s).**

**D1. What in your opinion is the aim of a mentorship programme? (Mark all that are applicable to you)**

Doing novice researchers' work for them	
It is similar to having a personal assistant for my own research	
Guides young academics in terms of how to do research	
Having a person do literature reviews for you	
Assist a novice researcher to become an experienced researcher	

**D2. Are you aware of any research mentorship programme at UJ?**

Yes	
No	

**D3. If yes, at what level?**

Departmental	
Faculty	
Institutional	

**D4. If not, would you be in favour of a formal mentorship programme being instituted at UJ? (If your response is "no", please proceed to Q.B10).**

Yes	
No	

**D5. At what level do you believe the mentorship programme should be offered?**

Departmental	
Faculty	
Institutional	

**D6. Would you be interested in becoming involved in a mentorship programme at UJ?**

As a mentor	Yes		No	
As a mentee (person being mentored)	Yes		No	

**D7. Would you prefer a mentor/mentee of the:**

Same sex	
Opposite sex	
Does not matter	

**D8. Would you prefer a mentor/mentee to be of the:**

Same cultural background	
Different cultural background	
Does not matter	

**D9. Which of the following type of mentoring would you prefer?**

Formal – relationship in a structured program	
Informal – conversations that happen by arrangement	
Friendship model – be my friend support system	
Peer mentoring – two colleagues mentor each other	
Group mentoring – one mentor meets with several mentees	

***If there are other types of mentoring that you prefer, please specify in the space provided:***

**D10. Indicate the extent to which you agree or disagree with the following statement. Please use the scale provided.**

	<b><i>Strongly Disagree</i></b>	<b><i>Disagree</i></b>	<b><i>Neutral/ Indifferent</i></b>	<b><i>Agree</i></b>	<b><i>Strongly Agree</i></b>
UJ should have a mentorship programme in place for novice researchers					
A mentorship programme will benefit novice researchers					
A mentorship programme will benefit post-graduate students					
A mentorship programme will benefit researchers with a limited publication record					
A mentorship programme will benefit researchers with a high publication record					
A formal mentorship programme will promote research output of academics					
A mentorship programme will only be an additional administrative burden					
A formal mentorship programme will only add to the teaching load of academics					
A mentorship programme is not feasible due to academics' resistance to change					
Academics who are not actively involved in research should be required to be mentored					
Academics who are active researchers should be required to mentor					

**D11. Which of the following do you believe may benefit a mentorship programme at UJ? (Mark all that are applicable to you)**

Mentorship enhances individual performance	
Mentorship strengthens commitment to the organisation	
Mentorship improves communication between academics	
A good mentoring programme will be motivational to a researcher	
A good mentoring programme will be inspirational to a researcher	
There is a mentoring culture at the UJ	

***If there are other benefits in the mentoring process, please specify in the space provided:***

.....

**D12. Which of the following do you believe may be a disadvantage to a mentorship programme at UJ? (Mark all that are applicable to you)**

Competency level of mentors	
Insufficient time to get involved in mentoring	
Mentoring creates false expectations relating to achievement of the mentee	
Mentoring creates false understanding in the role of the mentor	

***If there are other disadvantages in the mentoring process, please specify in the space provided:***

.....

**D13. Please use the space below to enter any other comments regarding mentorship for researchers for our attention.**

.....

.....

## ***ANNEXURE B***

### Frequency table of questionnaire

Frequency Table - Questionnaire on Mentorship				
<b>A1. Your gender</b>				
		Frequency	Percent	Valid Percent
Valid	Male	78	54.2	54.5
	Female	65	45.1	45.5
	Total	143	99.3	100.0
Missing	System	1	.7	
Total		144	100.0	
<b>A2. Your race</b>				
		Frequency	Percent	Valid Percent
Valid	African	22	15.3	15.4
	Coloured	2	1.4	1.4
	Asian	15	10.4	10.5
	White	104	72.2	72.7
	Total	143	99.3	100.0
Missing	System	1	.7	
Total		144	100.0	
<b>A3. Your age category</b>				
		Frequency	Percent	Valid Percent
Valid	Younger than 25	2	1.4	1.4
	25 to 34 years	28	19.4	19.6
	35 to 44 years	56	38.9	39.2
	45 to 54 years	31	21.5	21.7
	55 to 64 years	19	13.2	13.3
	65 or older	7	4.9	4.9
	Total	143	99.3	100.0
Missing	System	1	.7	
Total		144	100.0	
<b>A4. How many completed years have you been employed at the UJ (including its predecessors before)</b>				
		Frequency	Percent	Valid Percent
Valid	Less than 1 year	17	11.8	12.0
	From 1 - 3 years	25	17.4	17.6
	From 4 - 6 years	30	20.8	21.1
	From 7 - 9 years	21	14.6	14.8
	From 10 - 15 years	22	15.3	15.5
	More than 15 years	27	18.8	19.0
	Total	142	98.6	100.0
Missing	System	2	1.4	
Total		144	100.0	
<b>Please specify</b>				
		Frequency	Percent	Valid Percent
Valid		144	100.0	100.0
<b>A5. What is the nature of your employment contract with the UJ?</b>				
		Frequency	Percent	Valid Percent
Valid	Permanent and full-time at 40 hours per week	114	79.2	80.9
	Temporary and full-time for 40 hours per week	11	7.6	7.8
	Contract	15	10.4	10.6
	Other (please specify)	1	0.7	0.7
	Total	141	97.9	100
Missing	System	3	2.1	
Total		144	100	

A6. What is your highest completed academic qualification?		Frequency	Percent	Valid Percent
Valid	Four-year diploma (e.g. B Tech degree)	5	3.5	3.5
	Four-year degree (e.g. Honours degree)	15	10.4	10.6
	Masters degree	57	39.6	40.1
	Doctorate	65	45.1	45.8
	Total	142	98.6	100.0
Missing	System	2	1.4	
Total		144	100.0	
A7. In what year did you obtain your HIGHEST qualification as indicated in Q.A6 above?		Frequency	Percent	Valid Percent
Valid	1962	1	.7	.7
	1969	1	.7	.7
	1971	2	1.4	1.5
	1972	1	.7	.7
	1974	4	2.8	3.0
	1976	1	.7	.7
	1977	1	.7	.7
	1980	2	1.4	1.5
	1982	3	2.1	2.2
	1984	1	.7	.7
	1986	2	1.4	1.5
	1987	2	1.4	1.5
	1988	1	.7	.7
	1990	1	.7	.7
	1992	2	1.4	1.5
	1993	2	1.4	1.5
	1994	4	2.8	3.0
	1995	4	2.8	3.0
	1996	5	3.5	3.7
	1997	4	2.8	3.0
	1998	4	2.8	3.0
	1999	15	10.4	11.1
	2000	6	4.2	4.4
	2001	4	2.8	3.0
	2002	6	4.2	4.4
	2003	7	4.9	5.2
	2004	10	6.9	7.4
			66.7	71.1
	2005	12	8.3	8.9
	2006	12	8.3	8.9
	2007	6	4.2	4.4
	2008	6	4.2	4.4
	2009	3	2.1	2.2
			27.1	28.9
	Total	135	93.8	100.0
Missing	System	9	6.3	
Total		144	100.0	
A8. In which ONE of the following faculties are you employed?		Frequency	Percent	Valid Percent
Valid	Faculty of Engineering and the Built Environment	31	21.5	22.0
	Faculty of Humanities	32	22.2	22.7
	Faculty of Management	32	22.2	22.7
	Faculty of Science	46	31.9	32.6
	Total	141	97.9	100.0
Missing	System	3	2.1	
Total		144	100.0	

A9. What position do you currently hold in the faculty?		Frequency	Percent	Valid Percent
Valid	Junior lecturer	5	3.5	3.6
	Lecturer	55	38.2	39.3
	Senior lecturer	48	33.3	34.3
	Associate professor	10	6.9	7.1
	Professor	16	11.1	11.4
	Other (please specify)	6	4.2	4.3
	Total	140	97.2	100.0
Missing	System	4	2.8	
Total		144	100.0	
Please specify				
		Frequency	Percent	Valid Percent
Valid		133	92.4	92.4
	Academic Head	1	.7	.7
	HoD	1	.7	.7
	HOD	1	.7	.7
	HOD; Academic Development Centre	1	.7	.7
	Junior researcher	1	.7	.7
	Part time lecturer	1	.7	.7
	Postdoc researcher	1	.7	.7
	Researcher	1	.7	.7
	Senior Researcher	1	.7	.7
	Student Mentor	1	.7	.7
	Vice Dean	1	.7	.7
	Total	144	100.0	100.0
A10. For how many complete years have you been employed in your CURRENT position?				
		Frequency	Percent	Valid Percent
Valid	Less than 1 year	23	16.0	16.3
	From 1 - 3 years	49	34.0	34.8
	From 4 - 6 years	30	20.8	21.3
	From 7 - 9 years	15	10.4	10.6
	From 10 - 15 years	13	9.0	9.2
	More than 15 years	11	7.6	7.8
	Total	141	97.9	100.0
Missing	System	3	2.1	
Total		144	100.0	
A11. At which of the following level were you providing supervision from 2005-2008 (Mark all that are applicable to you)				
A11. B Tech Level				
		Frequency	Percent	Valid Percent
Valid	Unmarked	115	79.9	80.4
	Marked	28	19.4	19.6
	Total	143	99.3	100.0
Missing	System	1	.7	
Total		144	100.0	
A11. Honours Level				
		Frequency	Percent	Valid Percent
Valid	Unmarked	96	66.7	66.7
	Marked	47	32.6	32.6
	2	1	.7	.7
	Total	144	100.0	100.0
A11. Extra-curricular course level				
		Frequency	Percent	Valid Percent
Valid	Unmarked	131	91.0	91.0
	Marked	13	9.0	9.0
	Total	144	100.0	100.0

A11. Masters Level (course-work master's)		Frequency	Percent	Valid Percent
Valid	Unmarked	117	81.3	81.3
	Marked	26	18.1	18.1
	4	1	.7	.7
	Total	144	100.0	100.0
A11. Masters Level (research master's)		Frequency	Percent	Valid Percent
Valid	Unmarked	83	57.6	57.6
	Marked	61	42.4	42.4
	Total	144	100.0	100.0
A11. Doctoral Students		Frequency	Percent	Valid Percent
Valid	Unmarked	107	74.3	74.3
	Marked	37	25.7	25.7
	Total	144	100.0	100.0
A12. How many students did you supervise from 2005-2008?				
A12. B Tech students		Frequency	Percent	Valid Percent
Valid	0	6	4.2	17.6
	1	4	2.8	11.8
	2	3	2.1	8.8
	5	2	1.4	5.9
	6	1	.7	2.9
	7	1	.7	2.9
	10	3	2.1	8.8
	12	2	1.4	5.9
	13	1	.7	2.9
	15	1	.7	2.9
	17	1	.7	2.9
	20	1	.7	2.9
	25	2	1.4	5.9
	30	1	.7	2.9
	32	1	.7	2.9
	56	1	.7	2.9
	60	1	.7	2.9
	81	1	.7	2.9
	99	1	.7	2.9
	Total	34	23.6	82.4
Missing	System	110	76.4	
Total		144	100.0	
A12. Honours level students		Frequency	Percent	Valid Percent
Valid	0	5	3.5	9.4
	1	3	2.1	5.7
	2	5	3.5	9.4
	3	5	3.5	9.4
	4	4	2.8	7.5
	5	2	1.4	3.8
	6	3	2.1	5.7
	7	1	.7	1.9
	8	4	2.8	7.5
	9	1	.7	1.9
	10	3	2.1	5.7
	12	1	.7	1.9
	15	2	1.4	3.8
	20	3	2.1	5.7
	21	1	.7	1.9
	24	1	.7	1.9
	25	2	1.4	3.8



	30	2	1.4	3.8
	35	2	1.4	3.8
	40	1	.7	1.9
	45	2	1.4	3.8
				<b>90.6</b>
	Total	53	36.8	100.0
Missing	System	91	63.2	
Total		144	100.0	
<b>A12. Masters Level (course-work master's) students</b>				
		Frequency	Percent	Valid Percent
Valid	0	8	5.6	22.9
	1	4	2.8	11.4
	2	8	5.6	22.9
	4	2	1.4	5.7
	5	4	2.8	11.4
	6	1	.7	2.9
	9	2	1.4	5.7
	10	1	.7	2.9
	15	3	2.1	8.6
	17	1	.7	2.9
	20	1	.7	2.9
				<b>77.1</b>
	Total	35	24.3	100.0
Missing	System	109	75.7	
Total		144	100.0	
<b>A12. Masters Level (research master's) students</b>				
		Frequency	Percent	Valid Percent
Valid	0	5	3.5	7.1
	1	11	7.6	15.7
	2	14	9.7	20.0
	3	8	5.6	11.4
	4	9	6.3	12.9
	5	7	4.9	10.0
	8	5	3.5	7.1
	9	1	.7	1.4
	10	2	1.4	2.9
	12	2	1.4	2.9
	15	3	2.1	4.3
	20	2	1.4	2.9
	52	1	.7	1.4
				<b>92.9</b>
	Total	70	48.6	100.0
Missing	System	74	51.4	
Total		144	100.0	
<b>A12. Doctoral Students</b>				
		Frequency	Percent	Valid Percent
Valid	0	7	4.9	15.9
	1	13	9.0	29.5
	2	7	4.9	15.9
	3	5	3.5	11.4
	4	3	2.1	6.8
	5	1	.7	2.3
	6	4	2.8	9.1
	8	3	2.1	6.8
	10	1	.7	2.3
				<b>84.1</b>
	Total	44	30.6	100.0
Missing	System	100	69.4	
Total		144	100.0	

<b>A13. Are you currently registered for a further qualification at UJ?</b>				
		Frequency	Percent	Valid Percent
Valid	Yes	41	28.5	28.9
	No	101	70.1	71.1
	Total	142	98.6	100.0
Missing	System	2	1.4	
Total		144	100.0	
<b>A14. For which qualification are you currently registered?</b>				
		Frequency	Percent	Valid Percent
Valid	B Tech degree	1	.7	1.9
	Masters degree	13	9.0	24.5
	Doctorate	39	27.1	73.6
	Total	53	36.8	100.0
Missing	System	91	63.2	
Total		144	100.0	
<b>A15. Have you mentored or are you currently mentoring researchers (researchers refer to staff and post</b>				
		Frequency	Percent	Valid Percent
Valid	Yes	72	50.0	51.4
	No	68	47.2	48.6
	Total	140	97.2	100.0
Missing	System	4	2.8	
Total		144	100.0	

**Section B - Mentors**

<b>B1. How many years of experience do you have mentoring researchers (researchers refer to staff and</b>				
		Frequency	Percent	Valid Percent
Valid	Less than 1 year	8	5.6	12.5
	Between 1-3 years	16	11.1	25.0
	Between 4-6 years	11	7.6	17.2
	More than 6 years	29	20.1	45.3
	Total	64	44.4	100.0
Missing	System	80	55.6	
Total		144	100.0	
<b>B2. How many articles have you published in accredited journals in the last 5 years?</b>				
		Frequency	Percent	Valid Percent
Valid	0	10	6.9	16.1
	1	8	5.6	12.9
	2	7	4.9	11.3
	3	7	4.9	11.3
	4	1	.7	1.6
	5	5	3.5	8.1
	6	5	3.5	8.1
	7	5	3.5	8.1
	8	1	.7	1.6
	9	1	.7	1.6
	10	4	2.8	6.5
	12	4	2.8	6.5
	16	2	1.4	3.2
	21	1	.7	1.6
	34	1	.7	1.6
	Total	62	43.1	100.0
Missing	System	82	56.9	
Total		144	100.0	
<b>B3. Are you a NRF rated researcher?</b>				
		Frequency	Percent	Valid Percent
Valid	Yes	13	9.0	20.3
	No	51	35.4	79.7
	Total	64	44.4	100.0
Missing	System	80	55.6	
Total		144	100.0	
<b>B4. On what basis did you mentor or are currently mentoring? (Mark all that is applicable to you)</b>				
<b>A formal basis</b>				
		Frequency	Percent	Valid Percent
Valid	Unmarked	104	72.2	72.2
	Marked	40	27.8	27.8
	Total	144	100.0	100.0
<b>An informal basis</b>				
		Frequency	Percent	Valid Percent
Valid	Unmarked	105	72.9	72.9
	Marked	39	27.1	27.1
	Total	144	100.0	100.0

B5. Approximately how many people have you mentored in total?		Frequency	Percent	Valid Percent
Valid		82	56.9	56.9
	~4	1	.7	.7
	0	1	.7	.7
	1	4	2.8	2.8
	10	3	2.1	2.1
	10+	1	.7	.7
	108	1	.7	.7
	11	1	.7	.7
	12	2	1.4	1.4
	15	2	1.4	1.4
	2	6	4.2	4.2
	20	5	3.5	3.5
	3	6	4.2	4.2
	30	5	3.5	3.5
	4	7	4.9	4.9
	5	8	5.6	5.6
	50	2	1.4	1.4
	50+	1	.7	.7
	54	1	.7	.7
	6	2	1.4	1.4
	7	1	.7	.7
	8	1	.7	.7
	80	1	.7	.7
	Total	144	100.0	100.0
B6. How long does it take you to mentor a single researcher?				
		Frequency	Percent	Valid Percent
Valid	Less than 1 year	6	4.2	10.0
	Between 1-3 years	51	35.4	85.0
	Between 4-6 years	3	2.1	5.0
	Total	60	41.7	100.0
Missing	System	84	58.3	
Total		144	100.0	
B7. Do you have the opportunity to choose whom you mentor?				
		Frequency	Percent	Valid Percent
Valid	Yes	52	36.1	83.9
	No	10	6.9	16.1
	Total	62	43.1	100.0
Missing	System	82	56.9	
Total		144	100.0	
B8. Have you, in collaboration with your mentee(s): (Mark all that is applicable to you)				
B8. Published articles in accredited DoE Journals?				
		Frequency	Percent	Valid Percent
Valid	Yes	33	22.9	55.0
	No	27	18.8	45.0
	Total	60	41.7	100.0
Missing	System	84	58.3	
Total		144	100.0	
B8. Published chapters in books?				
		Frequency	Percent	Valid Percent
Valid	Yes	11	7.6	20.8
	No	42	29.2	79.2
	Total	53	36.8	100.0
Missing	System	91	63.2	
Total		144	100.0	

B8. Presented papers at peer-reviewed conferences?		Frequency	Percent	Valid Percent
Valid	Yes	38	26.4	62.3
	No	23	16.0	37.7
	Total	61	42.4	100.0
Missing	System	83	57.6	
Total		144	100.0	
B9. To what extent do you agree or disagree with the following statement? (One response per statement only) - look at gap chart				
B10. Which of the following has benefitted you as a mentor? (Mark all that are applicable to you)				
Mentoring increases my job satisfaction		Frequency	Percent	Valid Percent
Valid	Unmarked	101	70.1	70.1
	Marked	43	29.9	29.9
	Total	144	100.0	100.0
Mentoring facilitates self-reflection on my research		Frequency	Percent	Valid Percent
Valid	Unmarked	94	65.3	65.3
	Marked	50	34.7	34.7
	Total	144	100.0	100.0
Mentoring assists in developing professional relationships		Frequency	Percent	Valid Percent
Valid	Unmarked	102	70.8	70.8
	Marked	42	29.2	29.2
	Total	144	100.0	100.0
Mentoring promotes peer recognition		Frequency	Percent	Valid Percent
Valid	Unmarked	116	80.6	80.6
	Marked	28	19.4	19.4
	Total	144	100.0	100.0
Mentoring facilitates collegial staff relations		Frequency	Percent	Valid Percent
Valid	Unmarked	113	78.5	78.5
	Marked	31	21.5	21.5
	Total	144	100.0	100.0
Mentoring facilitates professional development		Frequency	Percent	Valid Percent
Valid	Unmarked	98	68.1	68.1
	Marked	46	31.9	31.9
	Total	144	100.0	100.0
Mentoring improves my communication skills		Frequency	Percent	Valid Percent
Valid	Unmarked	103	71.5	71.5
	Marked	41	28.5	28.5
	Total	144	100.0	100.0
Mentoring improves my observation skills		Frequency	Percent	Valid Percent
Valid	Unmarked	100	69.4	69.4
	Marked	44	30.6	30.6
	Total	144	100.0	100.0

B10. If there are other benefits to the mentoring process, please		Frequency	Percent	Valid Percent
Valid		130	90.3	90.3
	Contribution to skill development	1	.7	.7
	Form of personal social investment	1	.7	.7
	I learn more about myself	1	.7	.7
	In order to train postgraduate students I find mentoring is necessary.	1	.7	.7
	Increase skills development and knowledge transfer from experienced academics to upcoming profession	1	.7	.7
	increases research group efficiency	1	.7	.7
	It assists to build capacity in South Africa	1	.7	.7
	MTech mentoring will result in subsidizing of research in the Department	1	.7	.7
	Personal development and contacts with industry	1	.7	.7
	Promotes the overall quality of the research within a group and at a university.	1	.7	.7
	The most important aspect - it helps the students	1	.7	.7
	The options above don't seem to fit the question	1	.7	.7
	The topic of the mentee keeps the mentor up to date regarding developments in that specific field	1	.7	.7
	Watching students grow and develop - about them, not me	1	.7	.7
	Total	144	100.0	100.0
B11. Which of the following has been a constraints to you as a mentor? (Mark all that are applicable to you)				
Mentoring increases my current work load				
		Frequency	Percent	Valid Percent
Valid	Unmarked	86	59.7	59.7
	Marked	58	40.3	40.3
	Total	144	100.0	100.0
Mentoring is financially unrewarding				
		Frequency	Percent	Valid Percent
Valid	Unmarked	106	73.6	73.6
	Marked	38	26.4	26.4
	Total	144	100.0	100.0
Mentoring makes the mentee totally dependent on the mentor				
		Frequency	Percent	Valid Percent
Valid	Unmarked	141	97.9	97.9
	Marked	3	2.1	2.1
	Total	144	100.0	100.0
Mentoring hinders a mentor's career advancement				
		Frequency	Percent	Valid Percent
Valid	Unmarked	133	92.4	92.4
	Marked	11	7.6	7.6
	Total	144	100.0	100.0
Mentoring is a waste of time				
		Frequency	Percent	Valid Percent
Valid	Unmarked	144	100.0	100.0

B11. If there are other constraints to the mentoring process, please specify		Frequency	Percent	Valid Percent
Valid		136	94.4	94.4
	<i>I have too much work, especially with undergrad teaching and so mentoring does add to the load</i>	1	.7	.7
	It is a huge responsibility and it leads to reluctance in taking on new students.	1	.7	.7
	low levels of acceptance of benefit by mentees	1	.7	.7
	No understanding of the role that technological research in my field plays - only academic research	1	.7	.7
	Stipends for mentees are not attractive	1	.7	.7
	The administrative rules & regulations are a nightmare. It feels like a paper war.	1	.7	.7
	The five options don't fit the question	1	.7	.7
	The physical space for graduate students at UJ is wholly inadequate. Inadequate seminar room space.	1	.7	.7
	Total	144	100.0	100.0
B12. Have you been mentored or are you currently being mentored as a researcher?				
		Frequency	Percent	Valid Percent
Valid	Yes	52	36.1	40.0
	No	78	54.2	60.0
	Total	130	90.3	100.0
Missing	System	14	9.7	
Total		144	100.0	

<b>Section C - Mentees</b>				
<b>C1. When was the last time you were mentored?</b>				
		Frequency	Percent	Valid Percent
Valid	I am currently being mentored	32	22.2	68.1
	I was mentored 1 - 3 years ago	5	3.5	10.6
	I was mentored 4 - 6 years ago	4	2.8	8.5
	I was mentored 7 years ago or earlier	6	4.2	12.8
	Total	47	32.6	100.0
Missing	System	97	67.4	
Total		144	100.0	
<b>C2. For how long have you been mentored</b>				
		Frequency	Percent	Valid Percent
Valid	Less than 1 year	10	6.9	21.3
	Between 1-3 years	23	16.0	48.9
	Between 4-6 years	6	4.2	12.8
	More than 6 years	8	5.6	17.0
	Total	47	32.6	100.0
Missing	System	97	67.4	
Total		144	100.0	
<b>C3. On what basis were you mentored?</b>				
		Frequency	Percent	Valid Percent
Valid	Formal basis	32	22.2	65.3
	2	17	11.8	34.7
	Total	49	34.0	100.0
Missing	System	95	66.0	
Total		144	100.0	
<b>C4. Have you, in collaboration with your mentor: (Mark all that is applicable to you)</b>				
<b>Published articles in accredited DoE Journals?</b>				
		Frequency	Percent	Valid Percent
Valid	Yes	21	14.6	50.0
	No	21	14.6	50.0
	Total	42	29.2	100.0
Missing	System	102	70.8	
Total		144	100.0	
<b>Published chapters in books?</b>				
		Frequency	Percent	Valid Percent
Valid	Yes	5	3.5	13.2
	No	33	22.9	86.8
	Total	38	26.4	100.0
Missing	System	106	73.6	
Total		144	100.0	
<b>Presented papers at a peer-reviewed conference?</b>				
		Frequency	Percent	Valid Percent
Valid	Yes	24	16.7	54.5
	No	20	13.9	45.5
	Total	44	30.6	100.0
Missing	System	100	69.4	
Total		144	100.0	



C5. How many articles did you publish in accredited journals in the last 5 years?		Frequency	Percent	Valid Percent
Valid	0	11	7.6	25.6
	1	11	7.6	25.6
	2	6	4.2	14.0
	3	4	2.8	9.3
	4	1	.7	2.3
	5	1	.7	2.3
	6	2	1.4	4.7
	7	4	2.8	9.3
	10	1	.7	2.3
	16	1	.7	2.3
	21	1	.7	2.3
	Total	43	29.9	100.0
Missing	System	101	70.1	
Total		144	100.0	
C6. Are you a NRF rated researcher?		Frequency	Percent	Valid Percent
Valid	Yes	3	2.1	6.7
	No	42	29.2	93.3
	Total	45	31.3	100.0
Missing	System	99	68.8	
Total		144	100.0	
C7. Which of the following do you believe to be constraints of being mentee? (Mark all that are applicable to you)		Frequency	Percent	Valid Percent
It is a time consuming process				
Valid	Marked	23	16.0	100.0
Missing	System	121	84.0	
Total		144	100.0	
Mentors have unrealistic expectations				
Valid	2	5	3.5	100.0
Missing	System	139	96.5	
Total		144	100.0	
Mentors lack commitment				
Valid	3	12	8.3	100.0
Missing	System	132	91.7	
Total		144	100.0	
C7. If there are other constraints to the mentoring process, please specify		Frequency	Percent	Valid Percent
Valid		132	91.7	91.7
	Balance with work life	1	.7	.7
	Funding often at inadequate levels	1	.7	.7
	I think it depends entirely on the mentor. Good mentors will provide good mentorship.	1	.7	.7
	It takes commitment, time and close collaboration from both sides. Work pressure can ruin all these	1	.7	.7
	Just enrolled for Ph D so its too early to comment.	1	.7	.7
<i>quoted below Fig 13</i>	<i>lack of available mentors</i>	1	.7	.7
	No constraints	1	.7	.7
	Reconciliation of standards at the beginning of the process.	1	.7	.7
	Seniors prefer to mentor those of same religion, sex or ethnicity (due to lack of time and reward?)	1	.7	.7
<i>quoted below Fig 23 &amp; 4.3.2.2. (b)</i>	<i>Some mentors lack the knowledge in the specific field of research.</i>	1	.7	.7
	There are only advantages	1	.7	.7
	Workload of both mentor and mentee.	1	.7	.7

	Total	144	100.0	100.0
<b>C8. Which of the following do you believe are benefits of being a mentee? (Mark all that are applicable to you)</b>				
<b>Being mentored improves a mentee's self-confidence</b>				
		Frequency	Percent	Valid Percent
Valid	Marked	35	24.3	100.0
Missing	System	109	75.7	
Total		144	100.0	
<b>Being mentored offers a mentee personal professional development</b>				
		Frequency	Percent	Valid Percent
Valid	2	39	27.1	100.0
Missing	System	105	72.9	
Total		144	100.0	
<b>Mentors give valuable advice to mentees</b>				
		Frequency	Percent	Valid Percent
Valid	3	41	28.5	100.0
Missing	System	103	71.5	
Total		144	100.0	
<b>Mentors assist mentees to acquire new knowledge</b>				
		Frequency	Percent	Valid Percent
Valid	4	34	23.6	100.0
Missing	System	110	76.4	
Total		144	100.0	
<b>Mentors provides practical insight to mentees</b>				
		Frequency	Percent	Valid Percent
Valid	5	36	25.0	100.0
Missing	System	108	75.0	
Total		144	100.0	
<b>Mentors reduces mentees' stress levels</b>				
		Frequency	Percent	Valid Percent
Valid	6	15	10.4	100.0
Missing	System	129	89.6	
Total		144	100.0	
<b>Mentors provide mentees access to research networks</b>				
		Frequency	Percent	Valid Percent
Valid	7	32	22.2	100.0
Missing	System	112	77.8	
Total		144	100.0	
<b>Mentors reassure mentees</b>				
		Frequency	Percent	Valid Percent
Valid	8	24	16.7	100.0
Missing	System	120	83.3	
Total		144	100.0	
<b>Mentors assist mentees in reaching their research goals</b>				
		Frequency	Percent	Valid Percent
Valid	9	40	27.8	100.0
Missing	System	104	72.2	
Total		144	100.0	
<b>C8. If there are other benefits in the mentoring process, please specify</b>				
		Frequency	Percent	Valid Percent
Valid		141	97.9	97.9
	Personal growth towards the model of a researcher you want to become.	1	.7	.7
	Provide a shoulder to cry on. Provide practical examples. Help to unblock mental blocks.	1	.7	.7
	Reduction of time to become a productive researcher. Reduce research barrier to entry.	1	.7	.7
Total		144	100.0	100.0

C9. To what extent do you agree or disagree with the following? (Please use the scale provided) - see gap analysis graph

Section D - All respondents

D1. What in your opinion is the aim; of a mentorship programme? (Mark all that are applicable to you)

Doing novice researchers' work for them		Frequency	Percent	Valid Percent
Valid	Marked	7	4.9	100.0
Missing	System	137	95.1	
Total		144	100.0	
It is similar to having a personal assistant for my own research		Frequency	Percent	Valid Percent
Valid	2	5	3.5	100.0
Missing	System	139	96.5	
Total		144	100.0	
Guides young academics in terms of how to do research		Frequency	Percent	Valid Percent
Valid	3	104	72.2	100.0
Missing	System	40	27.8	
Total		144	100.0	
Having a person do literature reviews for you		Frequency	Percent	Valid Percent
Valid	4	3	2.1	100.0
Missing	System	141	97.9	
Total		144	100.0	
Assist a novice researcher to become an experienced researcher		Frequency	Percent	Valid Percent
Valid	5	99	68.8	100.0
Missing	System	45	31.3	
Total		144	100.0	
D2. Are you aware of any research mentorship programme at UJ?		Frequency	Percent	Valid Percent
Valid	Yes	16	11.1	12.6
	No	111	77.1	87.4
	Total	127	88.2	100.0
Missing	System	17	11.8	
Total		144	100.0	
D3. If yes, at what level?		Frequency	Percent	Valid Percent
Departmental		Frequency	Percent	Valid Percent
Valid	Marked	9	6.3	100.0
Missing	System	135	93.8	
Total		144	100.0	
Faculty		Frequency	Percent	Valid Percent
Valid	2	5	3.5	100.0
Missing	System	139	96.5	
Total		144	100.0	
Institutional		Frequency	Percent	Valid Percent
Valid	3	3	2.1	100.0
Missing	System	141	97.9	
Total		144	100.0	

<b>D4. Would you be in favour of a formal mentorship programme being instituted at UJ?</b>				
		Frequency	Percent	Valid Percent
Valid	Yes	91	63.2	79.8
	No	23	16.0	20.2
	Total	114	79.2	100.0
Missing	System	30	20.8	
Total		144	100.0	
<b>D5. At what level do you believe the mentorship programme should be offered?</b>				
<b>Departmental</b>				
		Frequency	Percent	Valid Percent
Valid	Marked	47	32.6	100.0
Missing	System	97	67.4	
Total		144	100.0	
<b>Faculty</b>				
		Frequency	Percent	Valid Percent
Valid	2	42	29.2	100.0
Missing	System	102	70.8	
Total		144	100.0	
<b>Institutional</b>				
		Frequency	Percent	Valid Percent
Valid	3	16	11.1	100.0
Missing	System	128	88.9	
Total		144	100.0	
<b>D6. Would you be interested in becoming involved in a mentorship programme at UJ?</b>				
<b>As a mentor</b>				
		Frequency	Percent	Valid Percent
Valid	Yes	64	44.4	75.3
	No	21	14.6	24.7
	Total	85	59.0	100.0
Missing	System	59	41.0	
Total		144	100.0	
<b>As a mentee (person being mentored)</b>				
		Frequency	Percent	Valid Percent
Valid	Yes	55	38.2	70.5
	No	23	16.0	29.5
	Total	78	54.2	100.0
Missing	System	66	45.8	
Total		144	100.0	
<b>D7. Would you prefer a mentor/mentee to be of the:</b>				
		Frequency	Percent	Valid Percent
Valid	Same sex	5	3.5	4.6
	Doesn't matter	103	71.5	95.4
	Total	108	75.0	100.0
Missing	System	36	25.0	
Total		144	100.0	
<b>D8. Would you prefer a mentor/mentee to be of the:</b>				
		Frequency	Percent	Valid Percent
Valid	Same cultural background	5	3.5	4.6
	Doesn't matter	103	71.5	95.4
	Total	108	75.0	100.0
Missing	System	36	25.0	
Total		144	100.0	

D9. Which of the following type of mentoring would you prefer?		Frequency	Percent	Valid Percent
Valid	Formal - relationship in a structured program	47	32.6	43.1
	Informal - conversations that happen by arrangement	34	23.6	31.2
	Friendship model - be my friend support system	7	4.9	6.4
	Peer mentoring - two colleagues mentor each other	11	7.6	10.1
	Group mentoring - one mentor meets with several mentees	10	6.9	9.2
	Total	109	75.7	100.0
Missing	System	35	24.3	
Total		144	100.0	
D9. If there are other types of mentoring that you prefer, please specify		Frequency	Percent	Valid Percent
Valid		136	94.4	94.4
	Any of these would be helpful. Didn't like the forced choice. Whatever works for an individual.	1	.7	.7
	Both formal and informal mentoring are helpful. Group mentoring is less threatening.	1	.7	.7
	Combination of formal and informal	1	.7	.7
	Creating physical spaces (seminar rooms, seminars etc), coffee rooms where intersections NO SPACE!!!	1	.7	.7
	For me, supervising post-grads is mentorship. What is your defn? The survey makes no sense w/o this.	1	.7	.7
	Formal mentoring should begin with group mentoring and progress to individual time where needed	1	.7	.7
	If you prefer mentor/mentee relationship it should be something you choose individually, not told	1	.7	.7
	Mentoring depends on the people involved. There shouldn't be a formal model although be formalised	1	.7	.7
	Total	144	100.0	100.0
D10. Indicate the extent to which you agree or disagree with the following statement. Please use the scale provided - see gap graph				
D11. Which of the following do you believe may benefit a mentorship programme at UJ?				
Mentorship enhances individual performance		Frequency	Percent	Valid Percent
Valid	Marked	97	67.4	100.0
Missing	System	47	32.6	
Total		144	100.0	
Mentorship strengthens commitment to the organisation		Frequency	Percent	Valid Percent
Valid	2	51	35.4	100.0
Missing	System	93	64.6	
Total		144	100.0	
Mentorship Improves communication between academics		Frequency	Percent	Valid Percent
Valid	3	85	59.0	100.0
Missing	System	59	41.0	
Total		144	100.0	
A good mentoring programme will be motivational to a researcher		Frequency	Percent	Valid Percent
Valid	4	96	66.7	100.0
Missing	System	48	33.3	
Total		144	100.0	
A good mentoring programme will be inspirational to a researcher		Frequency	Percent	Valid Percent
Valid	5	75	52.1	100.0
Missing	System	69	47.9	
Total		144	100.0	

<b>There is a mentoring culture at the UJ</b>				
		Frequency	Percent	Valid Percent
Valid	6	8	5.6	100.0
Missing	System	136	94.4	
Total		144	100.0	
<b>D11. If there are other benefits in the mentoring process, please specify</b>				
		Frequency	Percent	Valid Percent
Valid		134	93.1	93.1
	Don't understand this question D11	1	.7	.7
<i>quoted below Fig 24</i>	<i>Formal things don't work - it must be chosen by both mentor and mentee</i>	1	.7	.7
<i>quoted below Fig 24</i>	<i>I am not in favour of formal mentorship, as I keep saying, and I think that D11/12 relates to this.</i>	1	.7	.7
	<i>I'm not sure what the diff is btwn this &amp; good supervision. My supervisors were informal mentors.</i>	1	.7	.7
<i>quoted below Fig 22</i>	<i>It will improve efficiency at the institution</i>	1	.7	.7
	<i>Mentorship ensures focused, quality research.</i>	1	.7	.7
<i>quoted below Fig 24</i>	<i>Only if it is voluntarily done will there be a positive benefit to those willing to participate.</i>	1	.7	.7
<i>quoted below Fig 24</i>	<i>There is an informal mentoring culture that could be exploited more fully.</i>	1	.7	.7
<i>quoted below Fig 20</i>	<i>WILL INCREASE OUTPUT; WILL CREATE MORE MENTORS FOR THE NEXT GROUP; LIGHTEN THE BURDEN ON THE FEW DOI</i>	1	.7	.7
	<i>Your questions are biased such as the loaded one on academics resistance to CHANGE- bad science</i>	1	.7	.7
	Total	144	100.0	100.0
<b>D12. Which of the following do you believe may be a disadvantage to a mentorship programme at UJ?</b>				
<b>Competency level of mentors</b>				
		Frequency	Percent	Valid Percent
Valid	Marked	61	42.4	100.0
Missing	System	83	57.6	
Total		144	100.0	
<b>Insufficient time to get involved in mentoring</b>				
		Frequency	Percent	Valid Percent
Valid	2	107	74.3	100.0
Missing	System	37	25.7	
Total		144	100.0	
<b>Mentoring creates false expectations relating to achievement of the mentee</b>				
		Frequency	Percent	Valid Percent
Valid	3	38	26.4	100.0
Missing	System	106	73.6	
Total		144	100.0	
<b>Mentoring creates false understanding in the role of the mentor</b>				
		Frequency	Percent	Valid Percent
Valid	4	26	18.1	100.0
Missing	System	118	81.9	
Total		144	100.0	

D12. If there are other disadvantages in the mentoring process, please specify		Frequency	Percent	Valid Percent
Valid		133	92.4	92.4
	Again if it is by choice it would work, it is about personal commitment	1	.7	.7
<i>quoted below Fig 24</i>	<i>Formal programmes outside normal work hours discriminate against those with family responsibilities.</i>	1	.7	.7
	I have not been at UJ long enough to give a reasonable answer.	1	.7	.7
	none	1	.7	.7
<i>quoted under 4.3.2.2 (b)</i>	Potential for clashes between supervisor and mentor.	1	.7	.7
	Senior staff are lazy and in a rut. They are not well managed by HODs and Deans.	1	.7	.7
	SOME MAY BEGRUDGE THE TIME AND EXPERTISE THEY HAVE TO PROVIDE; OTHERS MAY REGARD IT AS A WASTE	1	.7	.7
	Student material at erstwhile TWR very poor - will require massive effort by mentor	1	.7	.7
<i>quoted below Fig. 5</i>	<i>The workload becomes too much.</i>	1	.7	.7
<i>quoted under 4.3.2.2 (b)</i>	<i>There are many people in high positions who do not publish and don't really know how to do research</i>	1	.7	.7
	You can't squeeze water out of stones! It will not be a magic bullet!	1	.7	.7
	Total	144	100.0	100.0
D13. Please enter any other comments regarding mentorship for researchers for our attention		Frequency	Percent	Valid Percent
Valid		118	81.9	81.9
	1.Mentoring is obvious when supervising students. 2.An Induction programme is required for new researchers (staff or students). 2. My mentor = friend/colleague, not part of my PhD.	1	.7	.7
	As done in the faculty of Science it makes sense. However even that takes a lot of time. In Science all first time study leaders and supervisors must have an experienced co-supervisor. This is suffi	1	.7	.7
<i>quoted below Fig 24</i>	<i>Attempts to FORMALISE mentorship are unlikely to meet with success. Successful mentorship is the result of voluntary associations between mentors and mentees, a highly personalised form of interaction</i>	1	.7	.7
	Emphasising again, this is a thing that only work if it is chosen by both parties and both are committed to the process. Forcing people together will only create friction and unhappiness.	1	.7	.7
	I aspire to be encouraged & supported in postgraduate research through a mentorship programme.	1	.7	.7
	I have supervised 120 BTECH students. The space provided in the question cannot take more than two digits. I also find the questionnaire very highly focussed to positive repoanses and not balanced	1	.7	.7
	I heard of UCT having a grand mentorship programme in which the more experienced work with novice researchers and this has resulted in many co-authored articles.	1	.7	.7
	Leave adequate space for these type of responses or exclude them	1	.7	.7
<i>quoted under 4.3.2.2 (b)</i>	<i>Many academics don't know how to do research and publish and they are in high positions supervising other people doing research. It shows up in student proposals. not enough space to answer</i>	1	.7	.7
	MANY PEOPLE FROM OTHER INSTITUTIONS WANT TO PUBLISH AND RESEARCH BUT ARE RESTRICTED BY THEIR WORKLOADS; THIS IS A MAJOR CONSIDERATION	1	.7	.7
	Mentoring can only really happen between a student and supervisor, or when researchers collaborate on a project. If there is no common goal, the mentoring wastes the time of the mentor.	1	.7	.7
	Mentoring has not been defined in the questionnaire. You cannot expect all respondents to have the same idea about what it is.	1	.7	.7
<i>quoted below Fig. 22</i>	<i>Mentoring is good for the University and it will increase the number of research publication.</i>	1	.7	.7
	Mentors should have a speciality. They should be students who have finished their degrees, post-grad degrees, etc. Mentoring provided by the ex-writing centre was superb and just what was needed.	1	.7	.7
<i>quoted below Fig 23</i>	<i>Mentorship should be confined to work hours. A preference for same sex or cultural background should not be entertained by the institution as it will only reinforce existing skews and biases</i>	1	.7	.7

<i>quoted under 4.3.2.2 (b)</i>	Mentorship should NEVER be enforced on any researcher, but should be based on the person's choice to become involved in the programme. Successful participation should be rewarded.	1	.7	.7
	Morale is low at the university. More work will not be welcomed by all personnell involved.	1	.7	.7
<i>quoted below Fig 24</i>	<b>Not in favour of formal mentorship.</b>	1	.7	.7
	One gets the impression sometimes that some mentors are only in it for the money, inserting their names first on every publication drafted.	1	.7	.7
	Start it sooner rather than later. Less talk on this issue and more action please	1	.7	.7
	Te supervision of post-grads is the best mentorship. For new staff, perhaps a good thing. It helped some women staff I knew at Flinders Uni in Adelaide: they were 'paired' with new retiring staff.	1	.7	.7
	The mentorship should also extend to postgraduate students beyond just mere supervision	1	.7	.7
	The Supervisor should also be the mentor.	1	.7	.7
	There is no mentoring culture at UJ. It is very necessary for novice researchers. It is important to get the buy-in from the mentors and from dept and faculty and institution.	1	.7	.7
	There should be a strong link with the relevant industry to work with real time data , while constantly improving the standard of teaching at the university.	1	.7	.7
<i>quoted below Fig 24 and Point 4.3.2.2 (b)</i>	<b>When enforced it is yet another aspect to be managed, with a negative vibe to it. With a willing mentor and a willing mentee it becomes a relationship that both aspire to. It should happen naturally.</b>	1	.7	.7
	Total	144	100.0	100.0



## ***ANNEXURE C***

### Interview questions

## Interview with Executive Deans of Faculties: Semi-structured Questions

According to the Vice-Chancellor one of the strategic priorities for UJ is:

***“Enhancing our research profile and research excellence, with key activities being increasing our research productivity and output; expanding the number of researchers” (VC Bulletin, 2009:1).***

1. What interventions does the faculty have to achieve the above priority?

If none in place, what suggestions can you give to promote this agenda amongst your staff within your faculty? Kindly elaborate, e.g. on resources, time-frames.

2. Does the faculty have any kind of research support programme as a capacity building initiative for novice researchers? If yes, could you elaborate?

3. *From a survey conducted amongst academic staff in four faculties, viz. Engineering, Humanities, Management and Science with regards to a research mentorship programme (REMP) for researchers at UJ, 63.20% responded in favour of a formal REMP being instituted at UJ.*

*In another question asked, 32.60% respondents preferred REMP at departmental level while 29.20% would like REMP to be instituted at faculty level.*

What do you think about this, and why?

4. While mentorship as a form of capacity building is a possibility, what do you think are the enabling and disabling factors to have such a programme?

5. Does the faculty have capacity e.g. human resource to manage such a programme?

6. *From the survey as mentioned in point 3 above 42.40% believed the “Competency level of mentors” may be a disadvantage to REMP.*

In your opinion what attributes should a mentor of research have?

Does your faculty have staff that could mentor other staff for research capacity building?

7. *From the survey as mentioned in point 3 above only 5.6% of the respondents felt that there is a mentoring culture at UJ?*

The notion of mentoring – are you aware of such a culture at UJ?

Do you think this culture can be expanded to reach more of the academic staff?

How do you think this should be done?

## Reference

VC Bulletin. 2009. From the Vice-Chancellor. VC Bulletin, 2009:1. Johannesburg: University of Johannesburg.

## ***ANNEXURE D***

Transcript of interview with Faculty A

## Annexure D

### Transcript of Interview: \*Faculty A

An interview was conducted on Friday, 27 November 2009 from 08:40 to 09:00 with the Dean: Faculty A. The researcher (interviewer) outlined the study and the purpose of the interview. Before the commencement of the interview confirmation of identity of the interviewee was requested. The following questions were posed and the responses voice recorded. The transcript appears below.

**According to the Vice-Chancellor one of the strategic priorities for UJ is:**

***“Enhancing our research profile and research excellence, with key activities being increasing our research productivity and output; expanding the number of researchers” (VC Bulletin, 2009:1).***

Interviewer	Interviewee
<p>1. What interventions does the faculty have to achieve the above priority? If none in place, what suggestions can you give to promote this agenda amongst your staff within your faculty? Kindly elaborate, e.g. on resources, time frames.</p>	<p>One of the things we feel is important is to teach people to do research. We are a faculty that is slightly dominated by members of staff that comes from the former technikon, so the idea of a research culture did not necessarily exist. We do organise a sort of workshop on how to do research, how to write their research proposal, how to write a paper, the usual tools that you need in order to be able to do research.</p> <p>The other intervention that we have actually been looking at is the idea of using Visiting Professorships as a way of increasing research capacity. This year alone we appointed 14 Visiting Professors some of them coming from the CSIR and some of them coming from overseas. The real goal of that is actually to bring capacity and mentorship into the faculty so that some of the success factors that these Visiting Professors have will actually be able to rub off on our permanent staff.</p>

	<p>The other intervention that we have actually done is coming to all intent our recruitment drive towards people with very strong research background. [With] regards to the number of PhDs have actually increased over the year by more than 15%. We believe that all these multiple strategies are going to assist us in making this faculty a good faculty as far as research and development is concerned.</p>
<p>2. Does the faculty have any kind of research support programme as a capacity building initiative for novice researchers? If yes, could you elaborate?</p>	<p>No, we do not have a programme per say but we are thinking about instituting a programme where a new researcher will be given seed funding and will be given a mentor to be able to assist him or her in developing his or her research activities.</p>
<p><i>From a survey conducted amongst academic staff in four faculties, viz. Engineering, Humanities, Management and Science with regards to a research mentorship programme (REMP) for researchers at UJ, 63.20% responded in favour of a formal REMP being instituted at UJ.</i></p> <p><i>In another questioned asked, 32.60% respondents preferred REMP at departmental level while 29.20% would like REMP to be instituted at faculty level.</i></p>	
<p>3. What do you think about this, and why?</p>	<p><i>I think that should be done at the departmental level because the similarities in research projects will probably be much more across departments than across the faculty.</i> Mentorship is not necessarily a second supervisor. We need to differentiate between a supervisor, who is a mentor also, and a mentor who is somebody who will just give a novice researcher some of the fundamentals that he or she needs to take into account in order to become a good researcher. We believe it should be at departmental level and we also believe it should be aimed at three main things:</p> <ul style="list-style-type: none"> <li>• How does one develop a research agenda?</li> <li>• How does one galvanise the financial resources that are needed to execute that research agenda?</li> <li>• How does one mobilise the human resources whether they</li> </ul>

	are postgraduate students, researchers and so forth so that they can capacitate that research agenda.
4. While mentorship as a form of capacity building is a possibility, what do you think are the enabling and disabling factors to have such a programme?	<p>To have people who are deemed to be mentors, and have not done the trade themselves is one of the most significant disabling factors. We used to have research champions who have not really done research themselves.</p> <p>The other factor we need to really emphasise is, some of our HoDs who not necessarily understand the importance of research. They sit in interviews where people still say but our main function is actually to teach. They never understand that the more research up to date you are the better you are going to become as a teacher. The people themselves not having operated at the research level actually become an impediment of the research agenda.</p> <p>There are also personalities - a mentor and mentee is people, and personal issues can come into the picture. What I have often found is that you do have some very young dynamic up and coming researchers who are not mentoring, who wouldn't want to be mentored. They think that they have everything that it takes and need to factor that into account that not everybody needs to be mentored. If you take somebody, a single minded person and put him into some mentorship programme it can have some negative consequences.</p> <p>The capacity is not where it is supposed to be, but we are building the capacity and it's a process that is going to take a bit of time. The faculty certainly has the capacity to galvanise enough resources to be able to put this programme into place sometimes into the future.</p>
5. Does the faculty have capacity to manage such a programme?	

<p><b>6 (a)</b> <i>From the survey as mentioned in point 3 above 42.40% believed the "Competency level of mentors" may be a disadvantage to REMP.</i></p> <p><b>In your opinion what attributes should a mentor of research have?</b></p>	<ul style="list-style-type: none"> <li>• They should have done research themselves, that is very important.</li> <li>• They should have good interpersonal skills.</li> <li>• A good researcher is also a person who is able to go out and galvanise different opinions and channel them towards a particular project, so it is important that person has good interpersonal skills.</li> <li>• I think if the mentor is well resourced whether in terms of connection to funding bodies or connection to other researchers across the world, to make life easier because they can increase capacity with that particular individual made contact.</li> <li>• One of the most important things for the researcher is to sit on editorial boards, start reviewing journal papers on behalf of journals. For a young researcher to be able to achieve this, a mentor is very important. For a young person to be invited to review a paper, you will have to know him and normally the ....at the end of the day.</li> </ul>
<p><b>6 (b)</b> <b>Does your faculty have staff that could mentor other staff for research capacity building?</b></p>	<p>Yes, we do. It is not adequate but we do have who will be able to mentor other staff.</p>
<p><b>7 (a)</b> <i>From the survey as mentioned in point 3 above only 5.6% of the respondents felt that there is a mentoring culture at UJ? The notion of mentoring – are you aware of such a culture at UJ?</i></p>	<p>In the faculty there is a pocket of young people who have been mentored to a very high level within the faculty. What we need to do, is to identify those pockets of excellence and see how we can expand that to the rest of the faculty.</p>

	<p><b>The interviewer enquired whether this will be done in an informal way.</b></p> <p>It will be done on a formal way. We have appointed somebody formally now, a retired professor, who used to be a professor here many years ago, to act as a mentor, work with young researchers so they can be able get some of the critical factors that can make a person a better researcher.</p>
<b>7 (b) Do you think this mentoring culture can be expanded to reach more of the academic staff?</b>	<p>Yes, I think so.</p>
<b>7 (c) How do you think the expansion of this mentoring culture should be done?</b>	<p>We need to first see what the critical factors are that we need to put into place so that we can make this a success.</p> <p>We only have pockets of excellence with regards to this mentoring issue, and after we have done that we then can be able to expand it.</p>

The researcher thanked the Dean for participating in the interview. Interview concluded at 09:00.

**\*Due to the researcher being registered for this study with an “outside” tertiary institution (i.e. not in the case study institution) anonymity is maintained so as not to jeopardise the institution and the sample that is being used in the case study, as well as other institutions mentioned, in any way.**

**Reference:** VC Bulletin. 2009. *From the Vice-Chancellor. VC Bulletin, 2009:1.* Johannesburg: University of Johannesburg.



### Transcript of Interview: \*Faculty B

An original request was made to the Dean of Faculty B for an appointment to conduct an interview. The Dean referred the researcher to the Vice-Dean who manages the research portfolio in the faculty. An interview was conducted on Wednesday, 18 November 2009 from 11.30 to 12.15. Before the commencement of the interview confirmation of identity of the interviewee was requested. The researcher (interviewer) outlined the study and the purpose of the interview. The following questions were posed and the responses voice recorded:

**According to the Vice-Chancellor one of the strategic priorities for UJ is:**

***“Enhancing our research profile and research excellence, with key activities being increasing our research productivity and output; expanding the number of researchers” (VC Bulletin, 2009:1).***

Interviewer	Interviewee
<p><b>1. What interventions does the faculty have to achieve the above priority? If none in place, what suggestions can you give to promote this agenda amongst your staff within your faculty? Kindly elaborate, e.g. on resources, time frames.</b></p>	<p>We have done a number of things and plan to do a number of things.</p> <p><b>Firstly</b>, the Dean cracked the whip by saying that under-performance in terms of research output will not be tolerated. To that effect, I visited with personal interviews with all members of staff in our faculty who have not produced any accredited output in the last 5 years. Maybe we need to talk later in the interview about what I found.</p> <p><b>Secondly</b>, is to increase the rewards for research output in the faculty? We decided to award portion of the DoE money into the research account of the individual for per unit so the individual will benefit.</p> <p><b>Confidential</b> – Out of my interviews with non-performers, obviously this is also confidential; this is my own opinion actually not confidential, I found that under-performance in terms of publication is much more complex than people just being lazy. It is more complex than just having a heavy teaching load, which is the usual excuse. When I looked at those who are the <b><i>so-called non-performers with exceptions, they were all young, female or black.</i></b></p>

	<p><b><i>Key conclusion was that they were paralysed or stage fright. They did not know what to do.</i></b></p> <p>The counter argument from people on why they do not know what to do because they have degrees! It is not that simple. It is not just people that came from a technikon background – this was also people who were in the Faculty B for quite some time.</p> <p>I am interested in what you are doing because my conclusion is that those individuals were very excited, with exceptions and willing and happy to do research. They needed a little bit of handholding, which you would call mentorship. Mentorship is a very complex thing.</p> <p>You can't just assign mentors to individuals. It needs to be much more organic. Take men e.g. they were horrified by the idea that they need to be helped while the women were keen to receive help from the faculty.</p>
--	---

<p>2. Does the faculty have any kind of research support programme as a capacity building initiative for novice researchers? If yes, could you elaborate?</p>	<p>Have bigger plans but time was little.</p> <p>I was supposed to drive that. Individual researchers were sent to *another University on a programme where you arrive there with a 60 to 70% done article and you polish it during the week. That has been extremely successful. It is quite a costly to do that and we wanted to replicate it here but putting it in place was a bit of a challenge. First person I got to help us with that only did people with quantitative data. It turned out that there was hardly anybody in the faculty with a paper on quantitative data so we scrapped that one. Then I approached *Mary from *another institution who is very well known in this area. She was filled up for this year so we will use *Mary next year where we will have a small group of people. That is the plan.</p> <p>We also encourage individual departments to use some of their research funds to do exactly this. I know that there are writing groups that are starting up. We are encouraging that e.g. in *Jane's group - there are a number of young researchers that come together. There are also other examples of that. But it stays a challenge.</p>
<p><b><i>From a survey conducted amongst academic staff in four faculties, viz. Engineering, Humanities, Management and Science with regards to a research mentorship programme (REMP) for researchers at UJ, 63.20% responded in favour of a formal REMP being instituted at UJ.</i></b></p> <p><b><i>In another questioned asked, 32.60% respondents preferred REMP at departmental level while 29.20% would like REMP to be instituted at faculty level.</i></b></p>	
<p>3. What do you think about this, and why?</p>	<p>Let me talk about Faculty B because I know it well. <b><i>It is one thing to say you want a mentorship but it is another thing to make it work.</i></b> If a department is very small and if everybody gets on very well and if there is a senior person, or a person who is very good with research and people are willing to be mentored, then it is fine. But in many departments people don't see eye-to-eye which I think is typical of Faculty B and people are trained to disagree. Forcing mentorship thing on people will not work. The easiest mentorship advice I could</p>

give somebody, is that you need to pair up people to write together which not something is commonly done in Faculty B. Faculty B have an expectation that individuals must prove themselves by single authorship. That's very common. I come from the \*ph and I am teaching in Faculty B. In ph people typically write together like in science; and their mentorship is a more organic process. You get money for a project and you all work together, senior and junior people work together and there is a process of mentorship.

If you just fenestrate the whole of Faculty B were there's not a history of research projects where you have teams of researchers, it is very difficult to get people to write together. But that would be one of the things I would encourage.

Not talking about lecturers writing with their students, that is another issue. But it is colleagues writing together, so it is publishing colleagues and non-publishing colleagues writing together.

Recently given a department/research centre the advice, that they start a 3-year cycle of moving into a 6 months space – a junior and a senior person for 6 months, people with something to write separately and jointly. So in a department of 12 people over a 3 year period, all junior and senior members of staff will have an opportunity for 6 months to live in that space, lets call it a virtual centre where there is some mentorship in the form of a senior/junior person; and that they do it organically so people will get on; occupy the space together for 6 months.

<p>4. While mentorship as a form of capacity building is a possibility, what do you think are the enabling and disabling factors to have such a programme?</p>	<p><b><i>Time is a real challenge. People are very time deficient.</i></b> We are many departments, are very under-staffed. That is a real challenge – is to find time. The thing that helps is that you have to have a dedicated period of time – time away seem to work very well – is to work together for a week or two weeks, so like a block of time. Lots of time seems to work very well.</p> <p>Working jointly on things works very well. I had a lot of experience with that junior/senior people together. We just completed something where we were 3 senior people and a junior person and it took us 6 weeks to write something for the World Health Organisation (WHO). It was a wonderful piece of work and I was mentored in that way by senior people. But I had to work on their projects initially and then I was left in charge of my own thing. I have done that subsequently – is to get people on my projects and then let them do their own stuff later on. I think that is important - there must be a common interest.</p>
	<p>I think if you are not in Faculty B, ideologically on the same page it will not work unless you are an exceptional mentor or an exceptional receiver. A power relation is a real problem and arrogance. We suffer from elitism at UJ, incredibly so and increasingly so as we appoint people who think they only come in to do only research here. They only work on their own stuff. There are languages problem. Many people do not have English as their first language and I think their particular challenge is in writing. I think you need to be very patient mentors.</p>

<p><b>5. Does the faculty have capacity to manage such a programme?</b></p>	<p>Must we now manage it? What is capacity? You just tell somebody to do that then it will probably be me. The faculty is not going to pay someone to do it. They are just going to dump the work on someone.</p> <p>Many of these things don't need management. The more things we manage the more unnatural [it is]. It needs to be more spontaneous. What is needed is apparently you need to put it on faculty's agenda very seriously then things start to happen. So you can't just tell them they must do it. There need to be a more formal request. Anything you tell academics particularly in Faculty B that they must do they will refuse.</p> <p>We need to take good examples and expand it. We need to build on what is already happening in some departments. I think we are very over-managed.</p> <p>If you take individuals - some of the individuals like doing it more than others, maybe to showcase those examples, because there is always competition. An example is *Jane who is a very good example - writing with more junior people. She is a very good example, not just with her PhD students but also with her young researchers. She puts an incredible effort into working and writing with them. She is a hard taskmaster but when you work with her, at the end of it I know people really appreciate it.</p>
---	---

<p><b>6 (a) <i>From the survey as mentioned in point 3 above 42.40% believed the “Competency level of mentors” may be a disadvantage to REMP.</i></b></p> <p><b>In your opinion what attributes should a mentor of research have?</b></p>	<p><b><i>How can you call someone a mentor if they are not competent?</i></b> I am not just talking about line managers. A true mentor is a person that is not officially appointed over you.</p> <p>A true mentor is somebody that walks a long way – a very good example – *Tom from Faculty D. My sister did her PhD with him. He is not an easy person to work with but he was an incredible mentor. He writes with his students, he claims authorship but doesn't claim first authorship. He works as hard as the student on the paper. He is a mentor so he also does the social stuff. He socialises his students. He took them on trips. He took them overseas to go see the specimens. He puts money into his students. He did it equal for men, women, black and white students, which I think is quite unusual for people to share their resource with their students. She did an incredible PhD with him. It took 5 years but it was a very old fashioned science. I like the idea of a mentor doing the social stuff and the academic stuff. So it is a formal and informal thing but a person is not put in charge of you. That is what I see as a mentor. A mentor is an informal “buddy” like someone to walk some distance with you.</p> <p>Many of us including myself as first generation university goers because I come from a rural background, I had no clue what it was. Over many years particular individuals guided and socialised me into academia. For older women it is often men but for younger women there are many women also. I do think there is a little bit of gender thing needed. I think men sometimes intimidate women unless you are very aware of it when you are a man. *Tom a good example as a good mentor particularly for females.</p>
---	---

<p><b>6 (b) Does your faculty have staff that could mentor other staff for research capacity building?</b></p>	<p>It will have to be in departments and research centres. There are people in the faculty that publish a lot. We need to encourage them to take younger non-publishing colleagues under their wings.</p> <p>We think there are people that can do it and are doing it but we don't always know about them, because a good mentor does not tell everybody they are mentoring people.</p>
<p><b>7 (a) <i>From the survey as mentioned in point 3 above only 5.6% of the respondents felt that there is a mentoring culture at UJ?</i> The notion of mentoring – are you aware of such a culture at UJ?</b></p>	<p>Is there such a culture in this country? In general is there a mentoring system in government? There is a lot of informal mentoring going on but if you say a slightly more formal mentoring culture, I don't know if there is one. It is a difficult question. Informally there is always mentoring but as a more formal thing, not necessarily.</p>
<p><b>7 (b) Do you think this mentoring culture can be expanded to reach more of the academic staff?</b></p>	<p>Yes. Heads of Departments and senior academics will have to drive it and set an example. There need to be commitment to it. I think gender, race, class [and] culture are barriers. I think we need to know each other better.</p> <p>We have no idea what kind of research individuals do in the department, in the faculty and in the wider university. There is not enough opportunity where people can talk to other people about what they actually do. What most lecturers do when they bump into other lecturers is to moan and complain about teaching and students rather than talk to people about research. That is the one problem we have is that we don't know what other people are doing.</p>



<p><b>7 (c) How do you think the expansion of this mentoring culture should be done?</b></p>	<p><b><i>Forcing people is never a good idea. It is through showcasing examples. Finding those examples – asking the mentors to mentor mentors.</i></b> Why not ask someone like *Jane to identify one or two senior colleagues and talk to them about how she mentors and what they can do to mentor. Bring the people who are already doing it together and adding more people who are interested.</p> <p>I do think there are little tricks - making specific time to do things together, to have a weekly meeting with someone, and have coffee or breakfast or once a month of something like that. It is an ongoing thing. It is really walking with someone or more than one person.</p>
--	---

The researcher thanked the Vice-Dean for participating in the interview which concluded at 12:15.

**\*Due to the researcher being registered for this study with an “outside” tertiary institution (i.e. not with the case study institution) anonymity is maintained so as not to jeopardise the institution and the sample being used in the case study, as well as other institutions mentioned, in any way.**

**Reference:** VC Bulletin. 2009. *From the Vice-Chancellor. VC Bulletin, 2009:1.* Johannesburg: University of Johannesburg.

### Transcript of Interview: \*Faculty C

An interview was conducted on Wednesday, 25 November 2009 from 10:00 to 10:30 with the Executive Dean together with the Vice-Dean (Acting) for Faculty C. The researcher (interviewer) outlined the study and the purpose of the interview. The following questions were posed and the responses voice recorded:

**According to the Vice-Chancellor one of the strategic priorities for UJ is:**

***“Enhancing our research profile and research excellence, with key activities being increasing our research productivity and output; expanding the number of researchers” (VC Bulletin, 2009:1).***

Interviewer	Interviewee
<p><b>1. What interventions does the faculty have to achieve the above priority? If none in place, what suggestions can you give to promote this agenda amongst your staff within your faculty? Kindly elaborate, e.g. on resources, time frames.</b></p>	<p>There are a number of things.</p> <p>One of the key things is resourcing! We have a central research fund. Colleagues can apply for research funding to do a project and they can also apply to us for partial support to travel to conferences abroad. We do require them to give an undertaking that they will publish an article in an accredited journal. We don't necessarily pick it up immediately but when they apply again we do need to get their track record and then we do see whether the commitment they made was honoured or not. The resourcing is there.</p> <p>We also had up to this year what we called the “Staff Paper Series” which is an initiative for more immature researchers not exclusively, but some mature researchers participated as well, but it was aimed at encouraging the immature researcher to prepare a presentation and to present it to staff. We had a programme of eleven presentations this year and last year it was almost seven presentations. They present to fellow staff members. These staff members comment on the presentations. Hopefully that is an opportunity to hone their research skills and gain confidence.</p>

	<p>The idea is to get the working paper; it must be rounded off and submitted again to a peer review journal. We have on average of between 40 to 50% of success of these papers percolating through to journals. Some of it takes a while. The effect of the thing might be better than one think, but I estimate about 40 to 50% success rate.</p> <p>The whole staff qualifications project is the backbone to research output. We have quite a number of staff members who hasn't got masters or a doctorate, or in some cases not even an honours degree. We have about 99% commitment in the staff qualifications project, but I think there are 3 people who are not within that project because of taking up retirement between now and 2011. Our belief is that the quicker we get those staff members through the staff qualifications project, especially to obtaining a masters degree well, then they go onto the doctorates degree which is the normal process. The quicker they <b>obtain their doctorate the quicker they can become research active. That is only when a staff member really become research active when they got a doctorate.</b> Considering the fact that most staff members with at least masters can publicise.</p> <p>My last remark is that we try to enhance our research output by promoters and supervisors publishing with the students. We set a climate. We indicated very clearly that research output is important and that climate is reinforced in various forums like MANCO.</p> <p>We also had an afternoon workshop on the 11 August where we reviewed the publication output of the previous year. It wasn't up to expectation and we decided on strategies to try and encourage research output. One of them was the fact that we thought we had low hanging fruit, which are the masters and the doctorate that are delivered. From there it is a short spectrum of publication that can be realised.</p>
--	---

<p><b>2. Does the faculty have any kind of research support programme as a capacity building initiative for novice researchers? If yes, could you elaborate?</b></p>	<p>Departments have initiatives e.g. *Department 1 has research initiatives that is ongoing. They have a research day where presentations are made.</p> <p>*Department 2 also has an initiative around research.</p> <p>One can understand in a sense because these are departments were in a techinkon that were subjected to a different ethos at that time. They are putting a lot of effort into bringing the staff into the university culture.</p> <p>Department 1 never had a research culture. *Prof. Stefan had a whole strategic session on research output. At that workshop held, we determined the capacity of the faculty as it stands at the moment. With the number of staff members that we have available to publicise, we can easily go for 45 DoE units. At the moment our stocktaking indicates about 52 and we hope we can push it to 60 at the least for this year. That will increase our output as compared to 2008 by 6 units.</p> <p>I can I also say what we have done in *Department 3. We have appointed a person that helps facilitate the submission of the articles for publication, does a bit of technical round up, language editing and through that IPPM we have enhanced our research output. That department is the biggest department in terms of research outputs. They provide between 50 and 60% in the whole faculty of research output.</p>
<p><b><i>From a survey conducted amongst academic staff in four faculties, viz. Engineering, Humanities, Management and Science with regards to a research mentorship programme (REMP) for researchers at UJ, 63.20% responded in favour of a formal REMP being instituted at UJ.</i></b></p> <p><b><i>In another questioned asked, 32.60% respondents preferred REMP at departmental level while 29.20% would like REMP to be instituted at faculty level.</i></b></p>	

<p>3. What do you think about this, and why?</p>	<p>We don't manage that. <b><i>It is a departmental initiative.</i></b> Departments do assign other staff members to, perhaps not always formally, the staff member understands there are senior peers that he or she would approach and use them as a sounding board as a mentor.</p> <p>In our faculty it is not much a central initiatives but it does happen spontaneously at departmental level. It is not something we would oppose. It is a very sensible thing to do. It is a survival mechanism for research in the department.</p> <p>In quite a number of departments like *Department 4, we have *Prof. Mike; in *Department 5 we have *Prof. Herman who drives the research agenda within the department. In the beginning of the year we get commitments from departments saying what can you produce? We have a sort of indication of where we are working towards. They are all performance reviewed now within the departments. A lot is being done to write in research output commitment into research output, and that initiative is being every year for their performance appraisal.</p> <p><b><i>The interviewer indicated from interviews with the other faculties, is that they are leaning towards informal mentorship.</i></b></p> <p>In our faculty, we run 1500 modules. We have 10500 students. Lecturing time takes a lot of time out of each lecturer. In some case at the old TWR with the diplomas, lecturers repeat lectures 4 or 5 times a week. So you can imagine what pressure they are and to expect for someone on one side to complete their studies, and on the other side to perform research. It just becomes a problem, especially those staff coming from the old TWR who are still in the process. We got to give them time and that is why they are in the staff qualifications projects. Until they complete their doctorate we can't expect much in terms of research output.</p>
--	--

	<p>In the August exercise of ours we tried to determine what the capacity in each department is. It turns out there are about 43 researchers who really are able to supervise and publish which means that mentorship will have to come from that corner as well. That means they carry a heavy burden, those senior people, because the others are still at various points of development. Those 43 individuals almost carry the whole load in the faculty. In certain cases there are senior professors that have 14 students to supervise. This is really enormous. Then we have a data band within IPPM of about 50 outside people who also acts as supervisors. We have 980 postgraduate students; we aren't including the honours.</p>
<p>4. While mentorship as a form of capacity building is a possibility, what do you think are the enabling and disabling factors to have such a programme?</p>	<p><b><i>From my experience</i></b> being from the TWR and partly here as well, <b><i>you need willing partner and you need people to commit. It runs on an informal basis between a senior and junior partner. It happens spontaneously and very often unexpectedly.</i></b></p>
<p>5. Does the faculty have capacity to manage such a programme?</p>	<p>It is a departmental initiative. We encourage, resource where necessary if that's required. The departments are the academic engines in the faculty and where these things must happen.</p> <p>Career development of the younger researcher should really happen in the department, managed by HoDs. We can't interfere so excessively in departments. <b><i>You can't really go to a colleague and say 'thou shall mentor'. It must be a commitment that he must be able to do it. You can't force people given the pressure under which they are.</i></b></p> <p>We have a list of 17 non-performing senior staff members with regards to research and we are managing that. We have just received reports on each one of them and I would say at least 40% of them are now becoming active. They got the message, they feeling the pressure and we can expect much more in that regard.</p>

<p>6 (a) <b><i>From the survey as mentioned in point 3 above 42.40% believed the “Competency level of mentors” may be a disadvantage to REMP.</i></b></p> <p><b>In your opinion what attributes should a mentor of research have?</b></p>	<p><b><i>Clearly there must be expertise.</i></b> To try and train somebody in something you not done yourself, experience yourself, would be ludicrous. You got to have published and supervised. You got to understand the ins and outs otherwise there’s no point in being a mentor.</p> <p>Personal attributes are important. People are either going to like you, trust you or turn away from you if you are a fairly cold personality or if you are do this thing mechanically so perhaps the relationship building between a mentor and mentee.</p> <p>Your personal attributes are important, your expertise is important and it got to be real and it’s got to be authentic or otherwise it’s not going to work.</p> <p>When mentoring takes place, a mentor makes sure that the mentee understands how important it is for a person who acts as a supervisor to have a very open clear good relationship with the particular student. In some cases we find there is conflict. When we pick that up we eventually have to change the supervisor. We have a clear vision within the faculty that 99% of the cases its going well, and students are being supervised in the way that has been prescribed in the guidelines within the university.</p> <p><b><i>Interviewer queried whether the mentor has to be an expert in the field that the student is studying</i></b></p> <p>*Department 5 e.g. you have consumer behaviour. *Prof. Meiring as the head of *Department 5, [has] got a wide range of expertise and experiences. It is easy for him to play the role as a mentor. With younger people that come through that have doctorate and associate professor level, those people are already focused in terms of their expertise. They don’t have the experience.</p>
---	--

	<p>You have your specialised fields. In the last 15 years of my career, I have realised that specialist work with certain topics and that is where you get the best results. Generalists are fine for a certain period of time. It all depends on the need of the mentee. If you need emotional support then we don't need that level of expertise. But most of them would need more than that I am sure.</p> <p>We would want somebody with subject expertise. When it relates to the technical grounds of the study, when it relates to the format in which the study has to be packed, there is a very clear understanding on what should be done and how it should be done. The technical part is fine. When it comes to the more expertise aspects, then you will find that the mentor might say go to that expert or that expert for advice, so it is available.</p>
<b>6 (b) Does your faculty have staff that could mentor other staff for research capacity building?</b>	Yes - the 43 researchers. Not as plentiful as we might like but the answer is still yes.
<b>7 (a) <i>From the survey as mentioned in point 3 above only 5.6% of the respondents felt that there is a mentoring culture at UJ?</i> The notion of mentoring – are you aware of such a culture at UJ?</b>	That depends on what you consider mentoring to be. I would still argue that it does happen but along more than the formal ways in departments.



<p><b>7 (b) Do you think this mentoring culture can be expanded to reach more of the academic staff?</b></p>	<p>I do not think it is really necessary to promote this to staff. People have an understanding of what is meant by it, to the extent that it does take place.</p> <p>It relates also to departments. We have a staff development programme decentralised in each department. Within that staff development programme in each department, this mentoring takes place. It is the responsibility of the HoD to make sure that ample opportunity is created for every junior staff member, not only to progress in terms of study, but also in terms of research. That is the job of the HoD.</p> <p>*Prof. Bernard is the Research Manager of the faculty and as Vice-Dean. The Dean deal with higher-level stuff. As mentioned we have a policy within the faculty on travel and going to conferences. It is in the last two years that we are now really forcing people that go to conferences and deliver papers, to provide accredited publication as the final output. Only every 2<sup>nd</sup> year can they apply. Years have gone by we never really managed this but in the last two years we are managing it. We are forcing them to come up with an accredited article. We do want a return.</p>
--	--

**7 (b) Continued**

**The interviewer asked the question about single authorship**

Mixture. It relates to promotion. At Senex there is a hard push – look at the publication that a staff member presents, the question is normally raised - what is the percentage of individual sole publication? It is easier for staff members to publicise with a student or with somebody else than sole publication. The sole publication is an issue that is dealt within the promotions policy. There must be a certain percentage; it needn't be 40%, maybe 20% in sole publications and the rest with others to get this publication as quick as possible. Our biggest constraints within the faculty are publication outlets. Now we just got an accredited journal in \*Department 6, the first in South Africa. Can you imagine those who wanted to publicise never had an accredited journal and it is within the \*Department 6. We see that as a big plus and it doesn't only mean that only people within \*Department 6 can publicise; it can be other people from other departments as well. We have in total now 5 journals within the faculty that is registered and they all accredited.

<p><b>7 (c) How do you think the expansion of this mentoring culture should be done?</b></p>	<p>We have from time to time training initiatives as well. I am afraid they had mixed fortunes. Again it is the question of workload and pressure and don't feel like another commitment.</p> <p>The one that *Bertie in IPPM has in research methodology is an extra-curricular programme. That is "kicking-in" very well. We had one round, which was again very well needed by staff members. For those extra-curricular programmes, staff members also have to pay. You can go on a course like that.</p> <p>Our finding is that especially the ex-TWR staffs didn't have the grounding in research methodology they should have. In masters and doctoral level there's a lot of empirical work that has to be done. You have to have strong ground in research methodology specifically in the statistical side. Staffs [members] attend the summer school in Faculty G. It is not something that we necessarily organise but staff is shrewd enough to know that they need it and they go.</p> <p>The other thing is IPPM has an orientation programme for the post graduate students every year. Those are staff members pitching there either for their studies; others again expose themselves and like to go to things like that. Training does happen, again not always, because of us nudging people in that direction, but they avail themselves of that opportunity.</p> <p>The expectation of the University is that Faculty C should be a strong research entity. To compare us with Faculty B at this stage is impossible. We would like to aim for 100 DoE units per year but if you take the capacity into consideration, people highly under pressure, with lecturing, and 3 campuses to run, you take the complexity of the faculty, the backlog in terms of qualifications; I think we are doing fairly well at this stage. If we can get to 60 this year and can most probably push up another 5 or 10 after that but I think one has to look at the progress you making over a period of 3 years.</p>
--	---

	<p>I believe 2014 if everything goes according to plan we might get to the point where we become a force within the university. We not too bad off with other universities; we have done the bench marking – on par with two universities, we not so far behind.</p> <p><b><i>The interviewer asked as to what their perceptions were on institutional drawbacks on research outputs.</i></b></p> <p>We are a comprehensive institution. The pressure that the university needs to be a research institution, that was one of the criticisms that came out of the institutional audit as well, you got to make up your mind whether you want to be a research institution. We are a comprehensive institution. If you take all the programmes into consideration you think what research output we are delivering, we doing fairly good in this point in time.</p> <p>My view is some where along the line we have to make up our minds. If you think we are lecturing from certificate level right up to doctorate level and you consider the numbers, you can't compare my faculty to Faculties *E, *H or *A. There must be a clear differentiation between faculties considering the constraints, the response levels, and the staffing before you can even think about pushing up the research output. We don't have an attitude "you take what you get", we try very hard to push but you can only push it up to a certain limit.</p>
--	--

The researcher thanked the Dean and Vice-Dean (Acting) for participating in the interview which concluded at 10:30.

**\*Due to the researcher being registered for this study with an "outside" tertiary institution (i.e. not with the case study institution) anonymity is maintained so as not to jeopardise the institution and sample that is being used in the case study, as well as other institutions mentioned, in any way.**

**Reference:** VC Bulletin. 2009. *From the Vice-Chancellor. VC Bulletin, 2009:1.* Johannesburg: University of Johannesburg.

### Transcript of Interview: \*Faculty D

An interview was conducted on Wednesday, 25 November 2009 from 08:00 to 09:50 with Prof. K Burger: Executive Dean for the Faculty of Science. The interviewee was asked to confirm her identity. The Researcher (interviewer) outlined the study and the purpose of the interview. The following questions were posed and the responses voice recorded.

***According to the Vice-Chancellor one of the strategic priorities for UJ is:***

***“Enhancing our research profile and research excellence, with key activities being increasing our research productivity and output; expanding the number of researchers” (VC Bulletin, 2009:1).***

Interviewer	Interviewee
<p><b>1. What interventions does the faculty have to achieve the above priority? If none in place, what suggestions can you give to promote this agenda amongst your staff within your faculty? Kindly elaborate, e.g. on resources, time frames.</b></p>	<p>What is important in the faculty, is to make funding available especially in the laboratory related subjects it is necessary to have sufficient funding. We have SASOL funds. The purpose is to boost the research. Every year we have our submission.</p> <p>Beginning of the year it is time for the URC meeting we evaluate those applications. Based on merit, e.g. outputs already achieved by the colleagues, potential masters and doctoral students, etc. we award a certain amount of money. That is a very strong incentive for colleagues. If they have applied the previous year for funding and they did not use that in the appropriate manner to achieve the output as they would indicate in their application, then off course we would ask questions.</p> <p>When we evaluate the applications we differentiate a little bit between the more established researchers and the younger, novice researchers. For the novice researcher we base our evaluation very much on the potential that we see and then it is more like seed money that we make available. We usually ask is that the novice</p>

	<p>researchers must start off within a team with more established researchers. There must be really a strong motivation if they want to now start a project on their own without funding. In that way we bring in mentorship as well.</p> <p>Usually with the established researchers that we only need to top-up because they will also be eligible for funding from our central sources and that is a strong encouragement for the younger researchers to become part of their team as well.</p> <p>With younger staff, when it comes to supervising experience for students, we will not allow an inexperienced staff member to supervise masters and doctoral students without having gone through a process where they have been co-supervisors together with a more experienced [supervisors]. That type of mentoring happens automatically in the faculty and it works very well.</p> <p>Up to last year we have also been very successful with the Thuthuka (TTK) programme. Many of the young researchers, eventually some of them became rated NRF researchers. The application for TTK was done not by the individuals themselves but together with more experienced colleagues who also advise when it comes to submission of applications to the NRF.</p> <p>It is not really that we appoint a mentor and say now you are responsible. I don't think colleagues would really agree to that.</p>
--	---

<p>2. <b>Does the faculty have any kind of research support programme as a capacity building initiative for novice researchers? If yes, could you elaborate?</b></p>	<p>Yes. In terms of our research funding that we make available, we look at the younger researchers and then we base our evaluation not on previous research output but on potential of research output.</p> <p>Also as I mentioned, the TTK programme. We really encourage our staff. We don't know what the future of the TTK programme will be.</p> <p>This New Generations Scholarships Programme (NGS) - we are at a high number. Off course, we look at our submissions. It must really not be as students only that we want, but also as a future academic. We really look at the research potential.</p> <p>Then we have several young staff members now that were recently appointed. What we do with them is [to] make life as beautiful possible. We don't overload them with teaching [as] many of them are still busy with their PhD. We really try to keep things sort of easy way into academia so they have a good experience and hopefully they will stay.</p> <p>We also try to, when the budget allows it, to really give them opportunity for conference attendance. We see that as a perk of academia and also a way of really boosting their confidence. We normally start by saying that they must first attend and present at the national conference, one or two; and then we consider sending them for international [conference].</p> <p><b><i>We also have now one staff member that already finished his PhD last year. From the faculty we supported him to spend a year overseas at a very prestigious institution. We feel that's also capacity building. He is setting up the network that will help him in the future with his research.</i></b></p>
--	--

	<p><b><i>Another staff member will now enrol for a PhD formally and will spend 6 months overseas. If that type of opportunity arises we try to accommodate that. It means other staff members need to work a bit harder and that we really encourage this type of international collaboration and exposure.</i></b></p>
<p><b><i>From a survey conducted amongst academic staff in four faculties, viz. Engineering, Humanities, Management and Science with regards to a research mentorship programme (REMP) for researchers at UJ, 63.20% responded in favour of a formal REMP being instituted at UJ.</i></b></p> <p><b><i>In another question asked, 32.60% respondents preferred REMP at departmental level while 29.20% would like REMP to be instituted at faculty level.</i></b></p>	
<p><b>3. What do you think about this, and why?</b></p>	<p>Perhaps a more informal way of mentoring. If you have the profile in the department of a good balance between more senior staff members and younger staff members, that can work very well and also where you have very strong niche areas in a department.</p> <p>You have that, it's a balance between senior and junior staff, you have groups working in a discipline then it is very natural that there is mentorship. [It is] not always only mentorship between senior and junior staff, but there is also mentorship between the peers. You will find that some researchers might be very strong in the lab, others might be more on the theory and there is also support for each other. I have learnt from colleagues is that they do learn from each other. If that happens then we are happy that there is sufficient mentorship.</p> <p>The problem however, is that at this stage we also have departments where there is really [no] research activities. There is postgraduate programme up to masters' level but there is no experienced researcher in the department. I would say in such a department one need to think of bringing in perhaps not formally, but in a sort of more structured way bringing in mentorship from another department. What we did in the two departments [is that] we now have postgraduate students that are enrolled in the departments but the</p>



	<p>main supervision comes from another department and the degrees are more inter-disciplinary. The approach was that if we want to enhance that research profile of the department we need to have more postgraduate students first of all, but we can't have then studies only in that discipline because we need to bring in the mentorship from elsewhere. We need to structure our study fields so that it is more inter-disciplinary to allow for this collaboration. So there is like a more formal example of mentorship but it is not like really saying you have to report.</p>
<p><b>4. While mentorship as a form of capacity building is a possibility, what do you think are the enabling and disabling factors to have such a programme?</b></p>	<p>Enabling factors should really be that it must not be like these coaching programmes [where] you come and speak and say this is how you do research. I think if it is not really like [where] the two will work together either by supervising students or working together on a research project, that will in the end result in a publication with shared authorship by the two colleagues, then it will not work. That would be for me an enabling environment where you have this sort of opportunity to work together.</p> <p>Disabling factors – doesn't happen in the faculty but it was something that we discussed previously. With the way the subsidy works now for publication, since colleagues need to share the subsidy, it might mean that they would rather opt for single author. That is something I must say, [that] from none of the colleagues in my faculty I got the impression that they will now rather go for single authorship. What some of them do is to try and balance. In some instances colleagues might have their theme projects and that's where the younger guys would also be involved. They have their set research where they do it on their own so they will get the single author publication. It will bring for them a little more subsidy for their own research and there will be the team work as well.</p>

	<p><b>The interviewer queried on whether there is an insistence on single authorship.</b></p> <p>No. My request is for colleagues just to try and balance within a department between quantity and quality. Colleagues understand that when it comes to younger researchers automatically they will work in a team and therefore they will not build up their research funds so quickly. Eventually we want that multiple authors on the paper also to include international collaborators. In many instances where you might have a paper with 7 or so authors on it and all of these authors are very high-flyer researchers, then in terms of quality it says more about that publication.</p> <p>With the younger researchers, if they start establishing themselves also in terms of their own research projects, they will probably go more for lower impact journals. In the department there is a good balance, there is the more established researchers, the rated scientists they will also go for the higher impact journals, not single author but the rest of the authors will be from international projects that they share with their collaborators. If colleagues go for more authors then they also must give more papers.</p>
<p><b>5. Does the faculty have capacity to manage such a programme?</b></p>	<p>No, if this is meant as a formal programme. <b><i>Staff that is not active researchers currently, I would guess that they might think that a formal mentorship programme will [work] for them. They don't know where to start; they don't have the confidence to really approach another team of researchers. I don't think it will work for them. Someone can't tell them how to do research and just leave them. Someone will need to do the research with them to really get them going. I don't see that there must be a formal programme. We don't have someone who I can think of, who will be able to give advice in such a way that it will work now and that can be used in all the disciplines.</i></b></p>

<p>6 (a) <i>From the survey as mentioned in point 3 above 42.40% believed the “Competency level of mentors” may be a disadvantage to REMP.</i></p> <p><b>In your opinion what attributes should a mentor of research have?</b></p>	<p><i>We can’t have someone come in and tell you how to do [research] if they don’t know the discipline.</i></p> <p><i>Attributes a mentor of research should have:</i></p> <ul style="list-style-type: none"> <li>• <i>have very strong own research experience.</i></li> <li>• <i>must still be doing research in the particular discipline.</i></li> <li>• <i>someone whom you can work with.</i></li> </ul> <p>There are researchers that are a bit more loners. They work together with their postgraduate students. But in some cases you will see only the very strong students that will survive because the standards are so very high. Such a researcher is an excellent mentor when it comes to strong postgraduate students.</p> <p>When it comes to someone that was out of research for some time, must now need a little bit more [of a ] softer hand. One would need to think of [putting] someone like that, not into a team with a leader like that, but more in a team where there might also be other colleagues sharing the same sort of difficulties, so as not [to] lose confidence before they even start.</p> <p>It is not easy to just define a mentor; it will depend very much on what is needed for the colleagues in terms of their development and support.</p>
--	--

<p><b>6 (b) Does your faculty have staff that could mentor other staff for research capacity building?</b></p>	<p>Absolutely! <i><b>The profile of the faculty currently is that there are a number of very senior staff members close to retirement, who are strong researchers.</b></i></p> <p>In some smaller departments it's a concern because it is not easy to find a replacer. We try and find successors before the person retire and then we give a commitment to such staff members and say that if you are very productive, and if it is someone we would like to retain, we would appoint you after retirement so don't stop taking in students 2 or 3 years before your retirement.</p> <p>We got a number of these very senior staff members and we make use of them after retirement to continue with this mentorship. We have got a number of very young staff members now showing great potential. We need to make sure that we have the senior staff members as long as possible in the system.</p> <p>In the middle we are also strong, say in the 40s or early 50s, we have a number of staff members but not in all the departments. In the smaller departments there is a quite a big gap now. For us that is a big challenge but it's only those two departments that we struggle with, because they are small, their mandate wasn't research. We brought in one researcher now in one of the department which we think will help with research. In the other department we are now doing these joint degrees with another faculty to bring in capacity from their side.</p>
--	---

<p><b>7 (a) <i>From the survey as mentioned in point 3 above only 5.6% of the respondents felt that there is a mentoring culture at UJ? The notion of mentoring – are you aware of such a culture at UJ?</i></b></p>	<p>The formal notion of mentoring – no! I think there might be in *Faculty B. That is the only one I know of is more like a formal one.</p> <p>In *Faculty G they have got a very well-established programme in academic writing, right through the year. Some of our staff also attends that just to improve the writing. When it comes to more scientific writing that is a different type of writing, we want to use our colleagues now to present a day workshop for students.</p> <p>I know *Prof. Arnold presented a workshop where he takes students, not only UJ students, but other students from Africa. They present a workshop in the specific discipline. They explore a topic. Part of the workshop was they must write-up about the topic in the format that will be required and buy a journal in that specific field. They are sharing the academic information and also learn to write it up and that was very successful.</p> <p>There are colleagues who did their masters a long time ago, who are now quite senior in years and will probably not enrol for a PhD in their home discipline. Several of those colleagues, because of what they have been doing now in the last couple of years, teaching. They are mainly colleagues from Doornfontein, but it is not only them, Its colleagues here at APK too!</p> <p>They are now really more interested in science education. That is something that they feel that they are already experts in because they are excellent lecturers. They did up to masters in their discipline and then for the PhD it is more like [an] inter-disciplinary degree.</p> <p>We have also started a lecture series in *SE to have more colleagues involved and give them the opportunity to present a lecture and to write that up, not necessarily for publication purposes but just too also build their confidence. That is also a programme that works very well.</p>
--	--

	<p>We also make use of those colleagues to present their knowledge at our 1<sup>st</sup> year Academy where we come together. All the 1<sup>st</sup> year lecturers across all the programmes share information [on] what works and what is not working. Those colleagues are then brought in as experts. They have status in the faculty. Especially the comprehensive nature of the university that is a way of improving also staff qualification profile of the faculty. It is also necessary because we struggle with other issues, things like articulation.</p>
<p><b>7 (b) Do you think this mentoring culture can be expanded to reach more of the academic staff?</b></p>	

<p><b>7 (c) How do you think the expansion of this mentoring culture should be done?</b></p>	<p>Every department can achieve these examples of mentorship. It's done in a collegial way; it's done more in an informal way. It's working well. Without that type of mentorship the younger colleagues would actually be lost.</p> <p>If we think of a more structured mentorship, we should think of exactly what we want to do. If it is perhaps that we want to focus on certain skills, it could be generic so perhaps not to the university but in a faculty, say the writing skills or presentation skills. There we can have, not necessarily a mentor, but someone coming in to do a presentation. We can say "we know that you are actually now acting as a mentor for this group of younger staff. Can we have something like perhaps you giving a formal presentation to them and invite others as well?" But this assignment [where you] say - you are this one's mentor and we want a report, that won't work!</p> <p><b><i>The interviewer posed a question on what the Dean thoughts were the possible causes for low research output institutionally.</i></b></p> <p>Before the merger the old RAU University was very much smaller in terms of students and staff. The per capita output of the old RAU was at some stage the 2<sup>nd</sup> highest of all universities in the country. At that stage we were extremely productive. Even more so if you were to compare the student numbers of the old RAU at that stage with the student numbers of *another university, the findings that were available to RAU colleagues, it was more evident to the colleagues here we were extremely productive given the higher student numbers.</p> <p>With the merger now the per capita and the drive for researchers continues now in all the universities. For 2 or 3 years a lot of time was spent in this university in making the merger a success. Although the productive researchers carried on with their research we were not in a position actually to allow them the research time. The other universities that did not go through such an intensive merger, they had the foundations already and they just carried on.</p>
--	---

I think we are behind now in terms of per capita because there is now many staff members in departments that do not do research. In the case of the technikon, they did not really have the mandate, there was not really research facilities, funding, postgraduate students, etc. to stimulate the research. I would say yes, if we would just look at and compare the productive researchers with all the other universities, I think we are still doing exceptionally well.

Overall there was the issue of the merger and also in terms of the student numbers colleagues need to handle, the profile of the students coming in, the multi-campus issue etc. that is part of the reason.

I also think that given this very huge institution, there is an understanding that some colleagues need to teach, I think there's also colleagues that hide behind it. I am not now speaking of technikon colleagues. There are colleagues here from the previous university side also which uses all these issues, the merger and stuff to make excuses. There must be change in attitude. To say you got a big class and so on, they must work a bit harder and get the research output.

Perhaps in other faculties, e.g. \*Faculty F, it is only now recently that they got extra posts. There I would guess, there was really no time for them because they had these huge classes. In many instances if you bring in extra staff to teach, that is the main problem. If that is the focus, you can't wait really to recruit that strong researcher which might be much harder to recruit. You appoint staff just to teach, to get hands-in, and then the profile of the staff is such that you can't really get all the output. That I think also happened with a huge growth in student numbers.

If we look at our portion of contract and temporary staff is very high in the university. You can't get output from contract and temporary staff.



	<p>We made that point in a discussion with our strategic break-away. To say that perhaps we should plan this, for every 3 contract position let's try and appoint one permanent person. Contract staff also, when it comes to teaching is not a permanent solution. With contract staff you can't really invest in research equipment even if they show strong research potential. We can provide them with support for conferences and so on but, when it comes to infrastructure we say no we want permanent person. I think that is part of the problem. Our staff complement is totally skewed, too many contact and temporary staff.</p> <p>Student profile also has something to do. We have too many undergraduate students compared to postgraduate students. Postgraduate students in our environment really stimulate research. This is now part of the institution because of the comprehensive nature.</p>
--	--

The researcher thanked the Dean for participating in the interview which concluded at 08:45.

**\*Due to the researcher being registered for this study with an “outside” tertiary institution (i.e. not with the case study institution) anonymity is maintained so as not to jeopardise the institution and the sample that is being used in the case study, as well as other institutions mentioned, in any way.**

**Reference:** VC Bulletin. 2009. *From the Vice-Chancellor. VC Bulletin, 2009:1.* Johannesburg: University of Johannesburg.

## ***ANNEXURE H***

Consent from UJ Management

## Nundulall, Reetha

---

**From:** Muller, Marie  
**Sent:** Tuesday, September 18, 2007 7:24 AM  
**To:** Nundulall, Reetha  
**Subject:** RE: RESEARCH DEVELOPMENT SURVEY Reetha

Fine

MARIE MULLER (Prof)  
REGISTRAR / REGISTRATEUR / MOREJASTARA / UREJISTRA  
UNIVERSITY OF JOHANNESBURG  
UNIVERSITEIT VAN JOHANNESBURG  
Tel: 011-559-3002  
Fax: 011-726-8373

---

**From:** Nundulall, Reetha  
**Sent:** 17 September 2007 03:38 PM  
**To:** Muller, Marie  
**Subject:** RE: RESEARCH DEVELOPMENT SURVEY Reetha

Dear Prof.

The second request was if I could use my UJ email facilities to send out the questionnaire to the academics in the respective faculties. Thanks.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

---

**From:** Muller, Marie  
**Sent:** 17 September 2007 08:50 AM  
**To:** Nundulall, Reetha  
**Subject:** RE: RESEARCH DEVELOPMENT SURVEY Reetha

Sorry – I have no further feedback than my initial feedback that forms part of this e-mail. The answer was no – no private research may be place on UJ intranet.  
regards

MARIE MULLER (Prof)  
REGISTRAR / REGISTRATEUR / MOREJASTARA / UREJISTRA  
UNIVERSITY OF JOHANNESBURG  
UNIVERSITEIT VAN JOHANNESBURG  
Tel: 011-559-3002  
Fax: 011-726-8373

---

**From:** Nundulall, Reetha  
**Sent:** 14 September 2007 03:21 PM  
**To:** Muller, Marie  
**Subject:** RESEARCH DEVELOPMENT SURVEY Reetha

Dear Prof. Muller

My email below (dated 27 Aug) refers.

Do you perhaps have any feedback from me? Thanks.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
Fax: 011-559-6279

---

**From:** Nundulall, Reetha  
**Sent:** 27 August 2007 10:06 AM  
**To:** Muller, Marie  
**Subject:** RESEARCH DEVELOPMENT SURVEY Reetha

Dear Prof. Muller

Thank you for your response.

I have another request. Since I have chosen only four faculties as my sample, is it possible to grant me permission to use my email address to send out the survey to the academics concerned? Thus far two out of four faculties have agreed. I am still waiting for approval from the other two faculties.

Thanking you.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

---

**From:** Muller, Marie  
**Sent:** 27 August 2007 09:33 AM  
**To:** Nundulall, Reetha  
**Cc:** Eyssen, Derick  
**Subject:** RE: RESEARCH DEVELOPMENT SURVEY Reetha

Dear Rheetha

Sorry for the delay – I wanted to first consult with Prof Derek in this regard.

Our decision is: regrettably we cannot allow private research projects to be "placed" on the intranet.

MARIE MULLER (Prof)  
REGISTRAR / REGISTRATEUR / MOREJASTARA / UREJISTRA  
UNIVERSITY OF JOHANNESBURG  
UNIVERSITEIT VAN JOHANNESBURG  
Tel: 011-559-3002  
Fax: 011-726-8373

---

**From:** Nundulall, Reetha  
**Sent:** 24 August 2007 10:16 AM  
**To:** Muller, Marie  
**Subject:** RESEARCH DEVELOPMENT SURVEY Reetha

Dear Prof. Muller

Emails below refer.

I am aware that I will be conducting this survey for my private qualification. However, the results will be of benefit to the UJ.

As I do not have private internet facilities I hereby seek your permission for me to post the survey on the UJ website which would make it easier for the academics participating to respond. In my opinion electronic communication tends to produce higher response.

I thank you for considering my matter.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

---

**From:** van der Walt, Ferdi  
**Sent:** 13 July 2007 07:23 AM  
**To:** Nundulall, Reetha  
**Subject:** FW: RESEARCH DEVELOPMENT SURVEY Reetha

Hi Reetha,

See the comments from Prof Marie Muller.

Regards,

Ferdi

---

**From:** Muller, Marie [mailto:mariem@uj.ac.za]  
**Sent:** 12 July 2007 03:58 PM  
**To:** Ferdi van der Walt  
**Cc:** Joubert, Hermien  
**Subject:** FW: RESEARCH DEVELOPMENT SURVEY Reetha

Hi Ferdi

There are a few mistakes (eg black is incorrectly used; the researcher should stick to the terminology used in the employment equity act). I recommend that the researcher verifies the types of appointments with Hermien Joubert or someone from HR.

Other than the few comments: the researcher can then go ahead with the distribution of the questionnaires.  
groete

MARIE MULLER (Prof)  
REGISTRAR / REGISTRATEUR  
UNIVERSITY OF JOHANNESBURG

UNIVERSITEIT VAN JOHANNESBURG  
Tel: 011-559-3002  
Fax: 011-559-3626 or 011-726-8372

NB!! PLEASE NOTE OUR NEW TELEPHONE & FAX NUMBER - THE PREFIX HAS CHANGED.

---

**From:** van der Walt, Ferdi  
**Sent:** 12 July 2007 07:27 AM  
**To:** Muller, Marie  
**Subject:** RESEARCH DEVELOPMENT SURVEY Reetha

Beste Marie,

Soos bespreek hiermee die vraelys.

Dankie vir hulp en bystand.

Vriendelike groete,

Ferdi

## Nundulall, Reetha

---

**From:** Nundulall, Reetha  
**Sent:** Friday, August 03, 2007 1:34 PM  
**To:** Goldman, Geoff  
**Subject:** RE: DRAFT RESEARCH PROPOSAL - Masters in Public Management

Hi! Geoff

Thanks. Noted.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

---

**From:** Goldman, Geoff  
**Sent:** 03 August 2007 01:31 PM  
**To:** Nundulall, Reetha  
**Subject:** RE: DRAFT RESEARCH PROPOSAL - Masters in Public Management

Hi Reetha

Only one comet (in Red). I think it is fine otherwise

Regards

**Geoff A Goldman**  
**Senior Lecturer**  
**Department of Business Management**  
**FACULTY OF MANAGEMENT**  
**UNIVERSITY OF JOHANNESBURG**

*The Faculty of Management strives to be the preferred provider of comprehensive and innovative management education, training and research programmes that are both relevant and that contribute to the broader development of the continent.*



**Tel: 011 406 3613**  
**E-mail: ggoldman@uj.ac.za**  
**Website: www.uj.ac.za**  
**Office: A Green 4 (Bunting Road Campus)**  
**Auckland Park**  
**PO Box 17011, Doornfontein, 2028**

---

**From:** Nundulall, Reetha  
**Sent:** 03 August 2007 10:10 AM

**To:** Goldman, Geoff; petemala@twr.ac.za

**Subject:** DRAFT RESEARCH PROPOSAL - Masters in Public Management

Dear Union Chairs

Emails below refer.

It would be appreciated if you could kindly let me have your feedback. Thanks.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

---

**From:** Nundulall, Reetha

**Sent:** 19 July 2007 10:21 AM

**To:** Goldman, Geoff; 'petemala@twr.ac.za'

**Subject:** DRAFT RESEARCH PROPOSAL - Masters in Public Management

Dear Union Leaders

Emails below refer.

I have received the necessary clearance to commence my study but was advised to also seek the unions "buy-in".

Attached is the questionnaire which Prof. Muller has perused. It would be appreciated if you could kindly advise me if I need to provide further information in order for you to give this matter your consideration. If not, I await to hear your response.

Thanking you

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

---

**From:** van der Walt, Ferdi

**Sent:** 12 July 2007 07:31 AM

**To:** Nundulall, Reetha

**Cc:** du Plessis, Hester

**Subject:** RE: DRAFT RESEARCH PROPOSAL

Dear Reetha,

I have spoken to Prof Marie Muller and forwarded your questionnaire to her for clearance. She has indicated that once she has given her clearance to proceed with the study there will be no need to get the clearance at regular intervals.

Prof Marie also suggested that you speak to the union representatives to get their buy-in before you start.



Regards,

Ferdi

---

**From:** Nundulall, Reetha  
**Sent:** 04 June 2007 03:01 PM  
**To:** van der Walt, Ferdi  
**Cc:** du Plessis, Hester  
**Subject:** DRAFT RESEARCH PROPOSAL

Dear Ferdi

Email below and my conversation with you on Friday, 1 June 2007 refer.

I confirm that Hettie du Plessis, Research Fellow in the Faculty of Art, Design and Architecture has agreed to assist with checking my research work during the course of my study should your schedule not permit it. Hettie will give you a report. This is to ensure that I meet the UJ requirements. However, I am not sure whether I need the Registrar's clearance initially or it must be sought at regular intervals.

Trust that this is in order.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

---

**From:** Greeff, Isabel  
**Sent:** 11 May 2007 11:41 AM  
**To:** Nundulall, Reetha  
**Cc:** van der Walt, Ferdi  
**Subject:** RE: DRAFT RESEARCH PROPOSAL

Dear Retha

Thank you for your e-mail. Please go ahead and ask Ferdi to assist you with the ethical clearance as far as UJ is concerned. Once he has given his input, please contact the Registrar (Prof Marie Muller) who will give you formal clearance based on Ferdi's advice.

Best wishes  
Prof Derek

---

**From:** Nundulall, Reetha  
**Sent:** Wednesday, May 09, 2007 10:54 AM  
**To:** Greeff, Isabel  
**Cc:** van der Walt, Ferdi  
**Subject:** DRAFT RESEARCH PROPOSAL

Dear Prof. van der Merwe

Attached is my draft proposal. Permission was granted by you for me base my research on UJ as I will be registering outside UJ.

The topic "Mentorship as a means to accelerate research output at University of Johannesburg (UJ)".

I did commit myself to not compromise UJ in any way. I had a chat to Ferdi van der Walt regarding my proposal & ethical clearance. He advised that ethical clearance will be granted by the institution that I register with and not by UJ. He requested that I write to you for directive on whether he could peruse my work for clearance or whether it must go through a formal process.

Thanking you

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
Phone: 011-4068491  
Fax: 011-4062507

## ***ANNEXURE I***

Consent from Faculty of Engineering

## Nundulall, Reetha

---

**From:** Andrew, Theo  
**Sent:** Monday, August 13, 2007 2:21 PM  
**To:** Nundulall, Reetha  
**Subject:** RE: Masters studies - survey/interviews

Rita

You would be most welcome.

Theo Andrew, PhD, FSAIEE, MISSS  
Professor & Executive Dean: Faculty of Engineering & the Built Environment  
University of Johannesburg  
P. O. Box 17011  
37 Nind Street  
Doornfontein, Gauteng, 2028  
South Africa  
Tel: +27 11 5596165/4  
Fax: +27 11 5596448  
Mobile: 0825729037  
Email: [tandrew@uj.ac.za](mailto:tandrew@uj.ac.za)

Please note new telephone numbers

---

**From:** Nundulall, Reetha  
**Sent:** 03 August 2007 11:57 AM  
**To:** Andrew, Theo  
**Subject:** Masters studies - survey/interviews

Dear Prof. Andrew

I am currently working on my draft proposal towards my M.Tech in Public Administration. As I will be registering with another institution and my research is based on UJ, I have received the necessary clearance from the relevant senior authorities at UJ.

The research topic is "Mentorship as a means to increase research output at UJ". One of the requirements during the course of my study will be to conduct a survey with academic employees and interview relevant senior employees (heads of department, deans, research managers). I have chosen your faculty as one of my sample.

I hereby rely on your assistance in this matter for me to complete my studies successfully. It will be a pleasure to inform you of the results at the end of my research.

Thanking you in advance.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

## ***ANNEXURE J***

Consent from Faculty of Humanities

## Nundulall, Reetha

---

**From:** Ryan, Rory  
**Sent:** Friday, September 14, 2007 12:49 PM  
**To:** Nundulall, Reetha  
**Subject:** FW: R. Nundulall Correspondence

Reetha

Please proceed with your study. Best of luck  
Rory

---

**From:** Muller, Marie  
**Sent:** 14 September 2007 12:08 PM  
**To:** Ryan, Rory  
**Subject:** RE: R. Nundulall Correspondence

Approved Rory

MARIE MULLER (Prof)  
REGISTRAR / REGISTRATEUR / MOREJASTARA / UREJISTRA  
UNIVERSITY OF JOHANNESBURG  
UNIVERSITEIT VAN JOHANNESBURG  
Tel: 011-559-3002  
Fax: 011-726-8373

---

**From:** Ryan, Rory  
**Sent:** 12 September 2007 01:09 PM  
**To:** Muller, Marie  
**Subject:** FW: R. Nundulall Correspondence

Dear Marie

Please see, first, the memo 'Ms Reetha Nundulall'. This is a memo from the Chair of the Humanities Ethics Committee, Ria Smit, recommending that Nundulall be granted permission to proceed with the study. I recommend that Nundulall be allowed to proceed.

To refresh your memory, I include the whole bundle of correspondence on this thus far.  
Rory

---

**From:** Smit, Ria  
**Sent:** 12 September 2007 12:27 PM  
**To:** Ryan, Rory  
**Subject:** FW: R. Nundulall Correspondence

Rory,

Please see below the original electronic correspondence (you and) I had with Reetha Nundulall.

Regards,  
Ria

Prof. Ria Smit  
Department of Sociology  
Auckland Park Kingsway Campus  
University of Johannesburg  
P.O. Box 524

Auckland Park, 2006  
South Africa  
Tel: +27 11 559 2319  
Fax: +27 11 559 3787  
[rsmit@uj.ac.za](mailto:rsmit@uj.ac.za)

---

**From:** Nundulall, Reetha  
**Sent:** 21 August 2007 01:10 PM  
**To:** Smit, Ria  
**Subject:** Masters studies

Dear Prof. Smit

Emails below refer.

Please find attached proposal and questionnaire. It is still very much in the draft stage.

Also attached is a scanned copy of emails regarding approval received from Profs. D vd Merwe and Muller as well as from Nutesa Chairperson. Verbal approval has been received from Mr Peter Malaka (Nehawu chairperson). I have requested for him to submit approval in writing.

In principle Durban University of Technology has accepted me as a student but will only register me next year (2008) hence, no supervisor appointed as yet.

Trust I have provided you with the relevant information. Please do not hesitate to contact me should you have any queries.

Thanking you

Regards

Reetha Nundulall

Senior Research Administrator

Room 169, 1st Floor

Administration Building

Research Office

University of Johannesburg

**Phone: 011-559-6598**

Fax: 011-559-6279

---

**From:** Smit, Ria  
**Sent:** Tuesday, August 07, 2007 10:22 AM  
**To:** Nundulall, Reetha  
**Subject:** Masters studies  
**Importance:** High

Dear Ms. Nundulall

Prof. Ryan, dean of the Faculty of Humanities, has forwarded to me your request to use our faculty as part of your research sample. As chair of the Faculty of Humanities Ethics Committee, I receive all such research

related requests, and the said committee is responsible for scrutinising research proposals from an ethical point of view. In order to make a recommendation to the dean, I would appreciate it if you can provide me with the following documentation:

- (a) A short research proposal ( $\pm$  5 pages)
- (b) A draft copy of the questionnaire/interview schedules to be used
- (c) A letter from your supervisor
- (d) A copy of the letter from UJ management giving you permission to conduct the research among staff

We look forward to hearing from you.

Warm regards  
Ria Smit

Dear Prof. Ryan

I am currently working on my draft proposal towards my M.Tech in Public Administration. As I will be registering with another institution and my research is based on UJ, I have received the necessary clearance from the relevant senior authorities at UJ.

The research topic is "Mentorship as a means to increase research output at UJ". One of the requirements during the course of my study will be to conduct a survey with academic employees and interview relevant senior employees (heads of department, deans, research managers). I have chosen your faculty as one of my sample.

I hereby rely on your assistance in this matter for me to complete my studies successfully. It will be a pleasure to inform you of the results at the end of my research.

Thank you for your assistance.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**



## ***ANNEXURE K***

Consent from Faculty of Management

## Nundulall, Reetha

---

**From:** Luiz, John  
**Sent:** Saturday, August 04, 2007 8:02 PM  
**To:** Nundulall, Reetha  
**Subject:** RE: Masters studies - survey/interviews

Dear Reetha

I wish you well with your research and look forward to the results.

Regards  
John Luiz

Prof John Luiz  
Dean of Management  
University of Johannesburg  
+27 (0)11 559-4122

---

**From:** Nundulall, Reetha  
**Sent:** Fri 2007/08/03 11:57 AM  
**To:** Luiz, John  
**Subject:** Masters studies - survey/interviews

Dear Prof. Luiz

I am currently working on my draft proposal towards my M.Tech in Public Administration. As I will be registering with another institution and my research is based on UJ, I have received the necessary clearance from the relevant senior authorities at UJ.

The research topic is "Mentorship as a means to increase research output at UJ". One of the requirements during the course of my study will be to conduct a survey with academic employees and interview relevant senior employees (heads of department, deans, research managers). I have chosen your faculty as one of my sample.

I hereby rely on your assistance in this matter for me to complete my studies successfully. It will be a pleasure to inform you of the results at the end of my research.

Thanking you in advance.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

## ***ANNEXURE L***

Consent from Faculty of Science

**Nundulall, Reetha**

---

**From:** Burger, Kinta  
**Sent:** Thursday, September 20, 2007 8:16 AM  
**To:** Nundulall, Reetha  
**Subject:** RE: Masters studies - survey/interviews

Dear Reetha

It will be my pleasure to assist you, as long as it will not impact too much on the time of academics

Regards  
Kinta

Dean: Faculty of Science  
University of Johannesburg  
PO Box 524  
Auckland Park  
2006  
Tel: +27 11 559 3247  
Fax: +27 11 559 3207

---

**From:** Nundulall, Reetha  
**Sent:** 18 September 2007 12:33 PM  
**To:** Burger, Kinta  
**Subject:** Masters studies - survey/interviews

Dear Prof. Burger

Email below refers.

I made a similar request to the Faculty of Humanities. The draft proposal and questionnaire have been through their ethical clearance process which did give rise to some queries regarding confidentiality etc.

Please find attachment doc.1 whereby these queries are outlined together with my response. Attachment doc.2 is whereby approval was granted.

Trust this will be of assistance to you in your decision-making. However, should these not meet to your satisfaction then I am willing to meet with you.

Thanking you for your consideration.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building

Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

---

**From:** Nundulall, Reetha  
**Sent:** 03 August 2007 11:56 AM  
**To:** Burger, Kinta  
**Subject:** Masters studies - survey/interviews

Dear Prof. Burger

I am currently working on my draft proposal towards my M.Tech in Public Administration. As I will be registering with another institution and my research is based on UJ, I have received the necessary clearance from the relevant senior authorities at UJ.

The research topic is "Mentorship as a means to increase research output at UJ". One of the requirements during the course of my study will be to conduct a survey with academic employees and interview relevant senior employees (heads of department, deans, research managers). I have chosen your faculty as one of my sample.

I hereby rely on your assistance in this matter for me to complete my studies successfully. It will be a pleasure to inform you of the results at the end of my research.

Thanking you in advance.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

## ***ANNEXURE M***

Clearance: UJ

## Nundulall, Reetha

---

**From:** van der Walt, Ferdi  
**Sent:** Thursday, May 20, 2010 7:56 AM  
**To:** Nundulall, Reetha  
**Subject:** FW: Ethical clearance: R Nundulall

As promised.

F

---

**From:** Van Der Merwe, Derek  
**Sent:** Thursday, May 20, 2010 7:19 AM  
**To:** van der Walt, Ferdi  
**Subject:** Ethical clearance: R Nundulall

Dear Ferdi

I refer to your letter to the Registrar dated 30 April 2010, and my subsequent telephone conversation with you. I am satisfied that appropriate measures have been put in place to ensure that the study Ms Nundulall undertook as part of her Masters research complies with standard ethical principles and am happy to accept your view that no ethical concerns are raised by this study.

Ms Nundulall is therefore welcome to proceed with the presentation of her thesis for assessment.

Regards  
Prof Derek van der Merwe

## **Nundulall, Reetha**

---

**From:** van der Walt, Ferdi  
**Sent:** Thursday, May 20, 2010 7:03 AM  
**To:** Nundulall, Reetha  
**Subject:** RE: DRAFT RESEARCH PROPOSAL - completed masters thesis by R Nundulall

Dear Reetha,

I have discussed your proposed thesis with Prof Derek van der Merwe who is now again responsible for giving the clearance to continue.  
He is satisfied and will send you (or me) an e-mail confirming this.

Best regards,

Ferdi

Ferdi van der Walt  
Research and Innovation Department  
University of Johannesburg  
Kingsway Campus  
Auckland Park  
C-Ring 218  
011-559-3818

**From:** Nundulall, Reetha  
**Sent:** Thursday, May 06, 2010 8:45 AM  
**To:** van der Walt, Ferdi  
**Subject:** FW: DRAFT RESEARCH PROPOSAL - completed masters thesis by R Nundulall

Hi! Ferdi  
A reminder re attached document. thanks. R

**From:** Nundulall, Reetha  
**Sent:** Friday, April 30, 2010 2:03 PM  
**To:** van der Walt, Ferdi  
**Subject:** DRAFT RESEARCH PROPOSAL - completed masters thesis by R Nundulall

**From:** Nundulall, Reetha  
**Sent:** Monday, June 04, 2007 3:01 PM  
**To:** fvanderwalt@uj.ac.za  
**Cc:** du Plessis, Hester  
**Subject:** DRAFT RESEARCH PROPOSAL

Dear Ferdi

Email below and my conversation with you on Friday, 1 June 2007 refer.

I confirm that Hettie du Plessis, Research Fellow in the Faculty of Art, Design and Architecture has agreed to assist with checking my research work during the course of my study should your schedule not permit it. Hettie will give you a report. This is to ensure that I meet the UJ requirements. However, I am not sure whether I need the Registrar's clearance initially or it must be sought at regular intervals.

Trust that this is in order.

Regards



Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research Office  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

---

**From:** Greeff, Isabel  
**Sent:** 11 May 2007 11:41 AM  
**To:** Nundulall, Reetha  
**Cc:** van der Walt, Ferdi  
**Subject:** RE: DRAFT RESEARCH PROPOSAL

Dear Retha

Thank you for your e-mail. Please go ahead and ask Ferdi to assist you with the ethical clearance as far as UJ is concerned. Once he has given his input, please contact the Registrar (Prof Marie Muller) who will give you formal clearance based on Ferdi's advice.

Best wishes  
Prof Derek

---

**From:** Nundulall, Reetha  
**Sent:** Wednesday, May 09, 2007 10:54 AM  
**To:** Greeff, Isabel  
**Cc:** van der Walt, Ferdi  
**Subject:** DRAFT RESEARCH PROPOSAL

Dear Prof. van der Merwe

Attached is my draft proposal. Permission was granted by you for me base my research on UJ as I will be registering outside UJ.

The topic "Mentorship as a means to accelerate research output at University of Johannesburg (UJ)".

I did commit myself to not compromise UJ in any way. I had a chat to Ferdi van der Walt regarding my proposal and ethical clearance. He advised that ethical clearance will be granted by the institution that I register with and not by UJ. He requested that I write to you for directive on whether he could peruse my work for clearance or whether it must go through a formal process.

Thanking you

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building



# Memorandum

To: Prof M Muller  
Registrar

From: Mr F van der Walt  
Head: Strategic Support  
Research & Innovation Division

Date: 30 April 2010

## **UJ CLEARANCE: F NUNDULALL - MASTERS STUDY**

Ms Reetha Nundulall, Staff No. 720001018, registered as a Masters student at the Durban University of Technology was granted permission by the relevant authorities to conduct her study at University of Johannesburg (UJ).

A requirement was that on completion of her study, prior to public viewing, she should obtain UJ clearance to ensure that the institution and the relevant participants in the study were not compromised in any way.

I have perused her thesis and is of the opinion that her document can be made public once passed by her registered institution. She has referenced her sources when using UJ documentation and interview quotations. Clearance was given by the interviewees that the transcripts were a true reflection of the interview.

Please advise if you require her thesis to go through another screening.

Regards

Sincerely

Ferdi van der Walt

## ***ANNEXURE N***

Clearance: Faculty of Engineering

## Nundulall, Reetha

---

**From:** Marwala, Tshilidzi  
**Sent:** Monday, April 12, 2010 9:11 AM  
**To:** Nundulall, Reetha  
**Subject:** RE: finalisation of study - confirmation of correctness of interview

Good Day

Thanks. This is correct reflection of our conversation.

Regards,  
Tshilidzi

---

**From:** Nundulall, Reetha  
**Sent:** Tuesday, April 06, 2010 09:16  
**To:** Marwala, Tshilidzi  
**Subject:** finalisation of study - confirmation of correctness of interview

Dear Prof.

I am now finalising my thesis for submission. Attached is the transcript and voice recording of an interview I held with you in 2009. I am also enclosing a summary of all my interviews for your interest.

I would appreciate it if you could confirm that the transcrip is correct. Those highlighted in bold - I have quoted these statement in the context of Chapter 4 - data analysis.

Ferdi van der Walt will be perusing my thesis for UJ clearance purposes.

I once again thank you for finding the time for me in your busy scheduling.

Reetha Nundulall  
Research & Innovation Division  
Phone: 011-5596598  
Fax: 011-5596279  
Email: [reethan@uj.ac.za](mailto:reethan@uj.ac.za)

## ***ANNEXURE O***

Clearance: Faculty of Humanities

## Nundulall, Reetha

---

**From:** De Wet, Thea  
**Sent:** Friday, April 30, 2010 10:44 AM  
**To:** Nundulall, Reetha  
**Subject:** RE: finalisation of study - confirmation of correctness of interview - humanities

Hi Reetha

Sorry I had it my head that I e-mailed you! I looked at the transcript and I'm happy with it. I also have an electronic copy of it for you (very big).

Thea

-----Original Message-----

**From:** Nundulall, Reetha  
**Sent:** Friday, April 30, 2010 10:04 AM  
**To:** De Wet, Thea  
**Subject:** RE: finalisation of study - confirmation of correctness of interview - humanities

Hi! Thea

sorry to nag - any luck?

-----Original Message-----

**From:** De Wet, Thea  
**Sent:** Tuesday, April 20, 2010 8:17 AM  
**To:** Nundulall, Reetha  
**Subject:** RE: finalisation of study - confirmation of correctness of interview - humanities

Hi Reetha

Sorry for not coming back to you. Will have a look at your transcript etc later today.

Thea

---

**From:** Nundulall, Reetha  
**Sent:** 20 April 2010 08:13 AM  
**To:** De Wet, Thea  
**Subject:** FW: finalisation of study - confirmation of correctness of interview - humanities

Hi! Thea

Email below refers.

Do you perhaps have any feedback for me? Thanks. Reetha

**From:** Nundulall, Reetha  
**Sent:** Tuesday, April 06, 2010 9:20 AM  
**To:** De Wet, Thea  
**Subject:** finalisation of study - confirmation of correctness of interview - humanities

Dear Thea

I am now finalising my thesis for submission. Attached is the transcript of an interview I held with you in 2009. I am also enclosing a summary of all my interviews for your interest.

I would appreciate it if you could confirm that the transcrip is correct. Those highlighted in bold - I have quoted these statement in the context of Chapter 4 - data analysis.

Ferdi van der Walt will be perusing my thesis for UJ clearance purposes.

I once again thank you for finding the time for me in your busy scheduling.

Reetha Nundulall

## ***ANNEXURE P***

Clearance: Faculty of Management

## Nundulall, Reetha

---

**From:** Muller, Anton  
**Sent:** Tuesday, April 20, 2010 10:15 AM  
**To:** Nundulall, Reetha  
**Subject:** RE: finalisation of study - confirmation of correctness of interview and document analysis - management

Hi Reetha

I have the best of intentions, but faculty business and my health have kept me very tied up. Go ahead as far as I am concerned.

Anton

Prof. Anton Muller  
**VICE-DEAN AND FACULTY RESEARCH MANAGER**  
**FACULTY OF MANAGEMENT**  
**UNIVERSITY OF JOHANNESBURG**  
Tel: 011 559 1178/2028  
Fax: 011 559 1168/3876  
E-mail: [amuller@uj.ac.za](mailto:amuller@uj.ac.za)  
Office: APB: A Green 1; APK: B Ring 533

---

**From:** Nundulall, Reetha  
**Sent:** 20 April 2010 08:12 AM  
**To:** Muller, Anton  
**Subject:** FW: finalisation of study - confirmation of correctness of interview and document analysis - management

Hi! Anton

Emails below refer.

Do I still need your clearance or was this done with Prof. Kruger? Thanks. Reetha

**From:** Kruger, Stephen  
**Sent:** Tuesday, April 06, 2010 1:18 PM  
**To:** Nundulall, Reetha  
**Subject:** RE: finalisation of study - confirmation of correctness of interview and document analysis - management

This seems fine to me.

Regards

*Prof Stephen Kruger*

**EXECUTIVE DEAN**  
**FACULTY OF MANAGEMENT**  
**UNIVERSITY OF JOHANNESBURG**

*A Faculty of excellence and management scholarship that pursues exciting new frontiers of knowledge and develops innovative, socially responsible leaders relevant to a global, inter-connected market.*



Tel: 011 559-4122/27/2088  
Fax: 011 559-4123  
Cell: 0825524078



## ***ANNEXURE Q***

Clearance: Faculty of Science

## Nundulall, Reetha

---

**From:** Nundulall, Reetha  
**Sent:** Tuesday, April 20, 2010 8:11 AM  
**To:** Burger, Kinta  
**Subject:** FW: finalisation of study - confirmation of correctness of interview - science  
**Attachments:** interview - transcript - reformatted - faculty D.docx; interview - recorded - science.mp3; Chapter 4 - data analysis - interviews - final.doc

Dear Prof

Email below refers.

Do you perhaps have any feedback for me? Thanks. Reetha

---

**From:** Nundulall, Reetha  
**Sent:** Tuesday, April 06, 2010 9:27 AM  
**To:** Burger, Kinta  
**Subject:** finalisation of study - confirmation of correctness of interview - science

Dear Prof. Kinta

I am now finalising my thesis for submission. Attached is the transcript and recording of an interview I held with you in 2009. I am also enclosing a summary of all my interviews for your interest.

I would appreciate it if you could confirm that the transcript is correct. Those highlighted in bold - I have quoted these statement in the context of Chapter 4 - data analysis.

Ferdi van der Walt will be perusing my thesis for UJ clearance purposes.

I once again thank you for finding the time for me in your busy scheduling.

Reetha Nundulall  
Research & Innovation Division  
Phone: 011-5596598  
Fax: 011-5596279  
Email: [reethan@uj.ac.za](mailto:reethan@uj.ac.za)

As per Prof Burger's  
telephonic conversation  
on 20 April 2010 @ 13h00 -  
Transcript is OK -

She Queried the name of  
Prof Annegarn only. Advised  
her that the name has  
been changed due to  
anonymity

20/04/2010

13h02.

## ***ANNEXURE R***

Clearance: NRF

## Nundulall, Reetha

---

**From:** Romilla R. Maharaj [romilla@nrf.ac.za]  
**Sent:** Thursday, May 27, 2010 2:02 PM  
**To:** Nundulall, Reetha  
**Cc:** Chrisna van Staden  
**Subject:** FW: permission to use data - nrf clearance  
**Attachments:** Chapter 1 - proposal - mentorship - final.doc; Chapter 2 - literature review - final.doc; references.doc

Dear Reetha

My apology for the late response. I do not see any controversial statements.

I do however suggest that you point out what worked and what did not. Also suggest that you quote the mandate of the NRF as an agency mandated by an Act of parliament. Also better to write ....agency of government rather than government's

Best wishes  
Romilla



National Research  
Foundation

Meiring Naude Road  
Brummeria  
PO Box 2600  
Pretoria, 0001  
South Africa  
<http://www.nrf.ac.za>

RISA

Research and Innovation  
Support and Advancement

Dr Romilla Maharaj

Executive Director

Human and Institutional Capacity Development

Tel: +27 (0) 12 481 4087

Email: romilla@nrf.ac.za

---

**From:** Nundulall, Reetha [mailto:reethan@uj.ac.za]  
**Sent:** 30 April 2010 09:59 AM  
**To:** Romilla R. Maharaj  
**Cc:** Sibongile Sowazi; Diana de Clercq; Anthipi Pouris  
**Subject:** RE: permission to use data - nrf clearance

Dear Romilla

Emails below refer.

I am now consolidating my study for submission. With reference to using the NRF's TTK pilot mentoring data I am forwarding my study for your clearance for public viewing. Kindly refer to yellow highlights in:

- Chapter 1 - Page 10
- Chapter 2 - Pages 43, 50/51
- Reference - Page 1

I thank you for allowing me the use of the data. I await your response. Reetha

**From:** Dr Romilla R. Maharaj [mailto:romilla@nrf.ac.za]  
**Sent:** Thursday, March 06, 2008 8:41 AM  
**To:** Nundulall, Reetha  
**Cc:** Sibongile Sowazi; Diana de Clercq  
**Subject:** RE: permission to use data

Thank you

Romilla

---

**From:** Nundulall, Reetha [mailto:reethan@uj.ac.za]  
**Sent:** Thursday, March 06, 2008 8:32 AM

**To:** Dr Romilla R. Maharaj  
**Cc:** Sibongile Sowazi; Diana de Clercq  
**Subject:** RE: permission to use data

Dear Romilla

Thank you very much for your response. It is much appreciated.

I hereby accept the conditions as set out.

Reetha Nundulall  
Senior Research Administrator  
Research & Innovation Division  
Room 169, 1st Floor  
Administration Building  
Doomfontein Campus  
Phone: 011-559-6598  
Fax: 011-559-6279  
Email: reethan@uj.ac.za

---

**From:** Dr Romilla R. Maharaj [mailto:romilla@nrf.ac.za]  
**Sent:** 06 March 2008 08:17 AM  
**To:** Nundulall, Reetha  
**Cc:** Sibongile Sowazi; Diana de Clercq  
**Subject:** RE: permission to use data

Dear Reetha

I have now read the report and am of the opinion that this information could be useful to you for your research project. This report of a pilot mentoring programme provides many insights to guide the development of comprehensive mentoring and coaching programmes.

You may make reference to the report with the following conditions.

1. The report is to be cited as unpublished.
2. It must be referenced as an evaluation of a Pilot Mentoring Programme at five HEIs
3. No institution may be referred to by name as we have not engaged the institutions as yet.
4. Any reference to the NRF must receive NRF prior approval before releasing the information into the public domain.

Please you please send me written acceptance of these conditions for NRF records.

I look forward to engaging you on your research findings.

Best wishes  
Romilla

---

**From:** Nundulall, Reetha [mailto:reethan@uj.ac.za]  
**Sent:** Thursday, February 14, 2008 9:02 AM  
**To:** Dr Romilla R. Maharaj  
**Subject:** RE: permission to use data

Dear Dr Maharaj

Thanks for your report.

In the meantime I will submit my proposal (there are not details mentioned about the programme). Should your response not be positive then I will adjust my proposal accordingly.

Regards

Reetha Nundulall

Senior Research Administrator  
Research & Innovation Division  
Room 169, 1st Floor  
Administration Building  
Doomfontein Campus  
Phone: 011-559-6598  
Fax: 011-559-6279  
Email: reethan@uj.ac.za

---

**From:** Dr Romilla R. Maharaj [mailto:romilla@nrf.ac.za]  
**Sent:** 13 February 2008 12:01 PM  
**To:** Nundulall, Reetha  
**Cc:** Sibongile Sowazi; Diana de Clercq  
**Subject:** RE: permission to use data  
**Importance:** High

Dear Reetha

I will review the report in question and give you an official NRF response.

Regards  
Romilla

---

**From:** Nundulall, Reetha [mailto:reethan@uj.ac.za]  
**Sent:** Thursday, January 31, 2008 12:07 PM  
**To:** Dr Romilla R. Maharaj  
**Subject:** permission to use data

Dear Dr Maharaj

I was referred to you by one of your colleagues.

My emails below refer.

I will be registering for my M.Tech. in Public Management at DUT. My topic – An exploration of mentorship as a means to improve research output at tertiary institutions. I will be using UJ as a case study.

NRF did provide me a copy of their Pilot Mentoring Programme for TTK grantholders. I have been liaising with Sibongile (see emails below). I have been trying to get hold of him but to no avail. As I have to submit my proposal I am urgently awaiting for the final approval that Sibongile needed to obtain. As mentioned I will be using the data in my literature review only and undertake not to mention any institutions name.

Trust you will be able to give my matter your attention.

Thanking you.

Reetha Nundulall  
Senior Research Administrator  
Research & Innovation Division  
Room 169, 1st Floor  
Administration Building  
Doomfontein Campus  
Phone: 011-559-6598  
Fax: 011-559-6279  
Email: reethan@uj.ac.za

---

**From:** Nundulall, Reetha  
**Sent:** 08 January 2008 03:52 PM

**To:** 'Sibongile Sowazi'  
**Subject:** RE: permission to use data

Hi Sibongile

Emails below refer. Do you perhaps have any feedback for me? I have to submit my proposal this month. Maybe I could send you the relevant sections where TTK mentoring is mentioned.

It would be appreciated if I could have your urgent feedback. Thanks.

Reetha Nundulall  
Senior Research Administrator  
Research & Innovation Division  
Room 169, 1st Floor  
Administration Building  
Doornfontein Campus  
Phone: 011-559-6598  
Fax: 011-559-6279  
Email: reethan@uj.ac.za

---

**From:** Sibongile Sowazi [mailto:sibongile@nrf.ac.za]  
**Sent:** 29 November 2007 02:05 PM  
**To:** Nundulall, Reetha  
**Subject:** RE: permission to use data

Hi Reetha,  
Personally, I do not have any problems with you using the data; however, I need to check it with our Executive Director. The NRF has new policies which include, among others, Intellectual Property. I will get back to you soon.

Kind regards,  
Sibo

---

**From:** Nundulall, Reetha [mailto:reethan@uj.ac.za]  
**Sent:** 29 November 2007 12:52 PM  
**To:** Sibongile Sowazi  
**Subject:** permission to use data

Dear Sibongile

Email below refers.

Please may I have your confirmation? Originally we did have a verbal agreement to use your data. I will not name any institutions in my work.

Thanks.

Reetha Nundulall  
Senior Research Administrator  
Research & Innovation Division  
Room 169, 1st Floor  
Administration Building  
Doornfontein Campus  
Phone: 011-559-6598  
Fax: 011-559-6279  
Email: reethan@uj.ac.za

---

**From:** Nundulall, Reetha  
**Sent:** 12 October 2007 08:34 AM

**To:** sibongile@nrf.ac.za  
**Subject:** permission to use data

Hi! Sibongile

Some time ago I mentioned that I am going to do my Masters research on mentorship. I am now working on my proposal.

You did forward me this report at my request. However, I would like permission in writing that I may use data from this report. I will ensure that I do not quote any institution's name.

Thanking you.

Regards

Reetha Nundulall  
Senior Research Administrator  
Room 169, 1st Floor  
Administration Building  
Research and Innovation Division  
University of Johannesburg  
**Phone: 011-559-6598**  
**Fax: 011-559-6279**

---

This email and all contents are subject to the following disclaimer:

<http://disclaimer.uj.ac.za>