

Mentorship as a strategy to improve research output at tertiary institutions: A case study of University of Johannesburg

Introduction

The increasing pace of globalisation, is not only affecting the shape and mode of operation of HEIs, but also their purpose. HEIs in South Africa are no exception to this challenge, as they are now also 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 HEIs in South Africa to look at practices in other countries to inform their decisions i.e. institutions will have to benchmark.

The functions of HEIs 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 HEIs. For instance, 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).

Jeenah and Pouris (2008, 1), maintain that the quality and quantity of research publications are used as benchmarks to monitor performance of South Africa’s national system of innovation. The importance of research output is emphasised by Waghid and

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 are 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. Mbali (2010, 749), however, argues against the use of journal articles solely to measure output and expresses the view that there should be more discipline-by-discipline research into what these publications are. Research output varies in values and ranges from articles in high impact journals to books, book chapters and publication of doctoral theses. However, some research outputs are valued more than others, e.g. research published in accredited journals have a higher value than research reports. Whereas the former attracts funding in the form of subsidy from the Department of Higher Education and Training (DHET), the other may not. The manner in which HEIs promote research output through capacity development initiatives are important for attracting funding. The funding allocation to HEIs in South Africa is based on three windows, one of which is research and development. The purpose of this study is, therefore, to determine whether mentorship is a useful strategy for improving research output.

Problem statement

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. 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 and Pouris (2008, 6). South Africa, although in the top 500 of world university rankings by the 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 2008, 1).

The problem explored is the relatively low research output at a merged HEI. The expectation of HEIs is that every academic should publish research or produce artefacts. While some HEIs 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 for HEIs. Geber (2005, 1) pointed out 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. According to Beckerman (2011, 1), in many disciplines, a record of scholarly publications has become more critical for tenure and promotion, and further

that deans have identified these publications as the most important consideration for tenure and promotions. Hence, there is the need to find sustainable mechanisms to enhance and support research capacity which is a core function of an academic. It was true in the past that those in the employ of former technikons had 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.

A formal Research Mentoring Programme (REMP) has been proposed by the researchers as a possible research capacity development strategy to improve research output. The recommendation of a formal REMP is also supported by a report from the Department of Higher Education and Training (2010, 6) which states 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. The Department of Higher Education and Training (DHET) 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.

Before the implementation of such a programme, the perceptions and views of researchers and managers regarding three objectives were explored:

- To determine the reasons for the relatively low research outputs at a selected merged HEI;
- To determine whether the selected HEI has REMP in place as well as the nature of such a programme and
- To explore the perceptions, attitudes and preferences of researchers/academics

and managers regarding mentorship as a means to improve research output.

Literature review

In comparison to other nations, South Africa has yet to meet global standards relating to research. This is evident from the literature reviewed on research development and research output, which confirms that it is stagnant and comparatively low. Possible reasons for this scenario can be found in arguments made by Budanani Tacheba of Botswana's Department of Research, Science and Technology, who states that 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). Further reasons advanced as to why South Africa has not met global standards, include:

- South Africa is small as far as research capacity is concerned, making it difficult to compete with the best in the world (MacGregor 2008, 1);
- South Africa is experiencing an ageing and shrinking scientific population and that the human resource is not being adequately developed and renewed (Department of Science and Technology 2002, 21);
- The migration of scientists (Research Africa 2008b, 5);
- Flawed strategy for capacity building. Jansen (2003, 10) mentions that the strategy for capacity building was flawed by making limited short-term investments in a large number of people, and that institutional conditions did not nurture, support and promote trainee scholars;
- The decline in research and development in the private sector (Department of

Science and Technology 2002, 21);

- The decline in government spending on research and development (Habib and Morrow 2007, 114);
- deteriorating working conditions for most university academics (Habib and Morrow 2007, 113) and
- When South Africa is compared to other developing nations, such as India and Brazil, they have more researchers and have been spending more money on research and development than South Africa (Jeenah and Pouris 2008, 5).

The government and HEIs have expressed concern with regard to the low research output in South Africa (Department of Higher Education and Training 2010, 6). This has resulted in government having to revise old and to implement new policies and strategies, to sustain research and development. The aim is to build capacity and improve research output with special emphasis on publishing in accredited publications. HEIs have a critical role in assisting government to realise its goal by producing knowledge and innovation through skilled labour, while at the same time acknowledging the social needs of the country. 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 and le Grange (2003, 5) are of the opinion that research and development have 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.

According to Blunt and 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, who in turn 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.

A review of literature relating to mentorship indicates that it is popular as it is recognised as an effective strategy that significantly enhances the growth of individuals as well as the development of 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. The University of Stellenbosch (2007, 1), for instance, 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. Attempts made to build research capacity through mentoring include those by the Universities of Witwatersrand and Cape Town. The 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. The 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 Department of Science and Technology launched an Internship Programme in 2006 with the objective of increasing the pool of human resources available to Science Councils, Science Institutions and National System of Innovation. The envisaged outcome of the Internship Programme is that the Science System will be 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).

From a global perspective, a research-intensive Australian university, viz. Melbourne, 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 (University of Melbourne 2007, 1). At the University of Leeds (2007, 4), in the School of English, the school's research committee during 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 plans. Further, in 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, in this context, was that of support, advice and encouragement to staff to fulfil their potential and to promote their research careers. 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 (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 members, for expert advice on statistical and research methodology and created a statistical mentoring network for Cleveland State University researchers. This programme is beneficial in that it will provide mentors and mentees opportunities for possible research collaboration and supports 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 at assisting 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 and 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 Internships with the purpose of training and mentoring young black researchers and preparing them up to a level of suitability to be appointed as researchers, and also to increase the human resource base of health researchers in the country.

Mentoring is also considered an appropriate means to address equity in research, as can be seen in the case at Swiss universities. FrauschafftWissen (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 and 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 2008, 2).

In South Africa, as an agency of government responsible for promoting and supporting basic and applied research as well as innovation, the National Research Foundation (NRF) piloted a mentoring programme for its Thuthuka (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).

From the examples of the mentorship programmes highlighted, it is evident that 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. Rex Marine Genomics (2006, 3), for instance, maintains 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.

An observation on the various mentoring programmes proposed or implemented, seems to have a common goal in terms of which 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.

Research methodology

For the purpose of this study, a case study approach was used. Currently there are 23 public HEIs in South Africa. There is institutional diversity as a result of mergers in the higher education system. This implies 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 was deemed most appropriate as it considers contextual factors that promote a particular way of doing things.

The case study was conducted on a merged HEI in Gauteng, namely, the University of Johannesburg (UJ).

Data collection

Data was collected through a survey using questionnaires and interviews. A document analysis was also undertaken.

Survey

A survey in the form of a questionnaire was emailed to academic staff (excluding temporary staff) in four faculties to ascertain their views on REMP. The research instrument was a questionnaire that consisted of open and closed questions. The target population consisted of all academic staff (1 544 individuals) in the nine faculties.

For this study a purposive sampling was used. All academic staff members (excluding temporary staff) from the four selected faculties, namely, the Engineering, Humanities, Management and Science Faculties, constituted the sample (788 individuals). These faculties were chosen as they are large in student and staff numbers in comparison to the other five faculties at the institution but with considerable differences in their research output. Data was obtained from questionnaires completed by 144 participants.

Document analysis

A document analysis of records and reports (including, university and faculty policies and research reports), was carried out to ascertain what interventions the institution was considering or implementing to promote research, and to identify barriers that hindered research and enabling factors that promoted research capacity development.

Interviews

Semi-structured one-on-one interviews were conducted with the deans from the four sample faculties, and a research manager from one of the four sample faculties. The staff members selected for the interviews 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 mentorship in order to improve research output in the institution. The interviews were recorded.

Data analysis

Part of the analysis was focused on *A-priori* categories of analysis as well as a grounded approach to analysis. The grounded approach to analysis focused on data generated through the interviews and document analysis. The data from the questionnaire was analysed using the SPSS for Windows (version 17).

Findings

The analysis of the data gathered through the questionnaires revealed the following trends:

Response from Mentors

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.

Mentors benefitted, especially in terms 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 (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 and Deniston 1994, 38; Johnson 2007, 12-12; Pierce 1998, 4, as cited by Schulze (2009, 34)).

While the mentors experienced benefits of mentoring from the mentoring process, they also indicated some constraints that affected them as mentors as indicated in Figure 1.

Figure 1 to be inserted here.

Figure 1 shows that the two important points of concern were:

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

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

A cross analysis of mentors was done in terms of age and qualifications to ascertain the potential of the institution and faculties' ability to sustain a possible formal REMP in view of long-term capacity.

Figure 2 to be inserted here.

Figure 2 shows 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 in 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 in 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.

Although data indicates there are mentors with capacity to mentor, the concern is that the majority of the mentors are retired or reaching retirement age. Hence, these statistics confirm the findings from the literature reviewed, which highlighted some hindering factors contributing to South Africa's slow progress in meeting global standards in terms of research. According to the Department of Science and Technology (2002, 21):

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.

This was also confirmed in an interview with one of the faculties in response to a question on staff capacity to mentor other staff. The profile of this particular faculty shows that there are a number of very senior staff members who are strong researchers, are close to retirement.

This concern is further highlighted by van der Walt (2010, 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.

Response from Mentees

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

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*".

Figure 3 to be inserted here.

Although mentees experienced the benefits of being mentored, some constraints were also indicated, as indicated in Figure 3. An important finding was that:

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

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

Figure 4 indicates that from 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 a 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 researchers are of the opinion that these mentees could be possible replacements for those mentors who are reaching retirement or that have retired.

Hence, 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.

Figure 4 to be inserted here

General Response for a 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.

A positive response was received on the aims of REMP with an important finding:

- 72.2% of all the respondents believed that REMP guide young academics in terms of the research process and methodology and
- 97.9% are of the view that REMP assist a novice researcher to become an experienced researcher

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%).

While respondents expressed the advantages of REMP, some of the disadvantages were also highlighted, as indicated in Figure 5.

Figure 5 to be inserted here.

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 disadvantage of *insufficient time to get involved in mentoring* is in accordance with the view of one of the managers interviewed who stated: “*Time is a real challenge. People are very time deficient.*”

Time constraints as a disadvantage, is also evident in a study conducted by Schulze (2009, 41; 2010, 792), where reference was made to such 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 cited by Schulze (2009, 41)).

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 (2010, 1-2) suggestion for a structured programme that may consist of various elements, one of which is mentoring skills, be implemented at UJ.

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.

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Figure 6 reflects 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.

An overall finding that is quite significant is that the request for a formal REMP (by staff members responding to questionnaires) 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.

Document Analysis

An analysis of institutional documentation (i.e. one faculty's research policy, the institutional research policy and research reports) clearly indicated the commitment towards developing research and capacity with a view to becoming a research-focused HEI.

Various interventions are in place, some of which are: the provision of infrastructure; financial rewards to publishing researchers from publication subsidy; Vice-Chancellor's

awards for various categories of researchers (Research Report 2008, 5); establishment of a post-graduate centre; developing a new generation of scholars and funding for research projects (Nandarani Maistry, UJ's Head of Postgraduate Support, Research and Innovation Division (as quoted by Breitenbach 2008/9, 7)).

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 2008, 3).

Interviews

Semi-structured interviews were conducted with the Deans and in one case the Vice-Dean of the four sample faculties. The findings of the interviews are summarised in respect of each of the three objectives:

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

The interviewees were asked what they thought were the possible causes for the low research output. The following causes were identified:

- UJ was established as a result of the merging of two educational institutions with different research cultures. One institution (ex-Technikon Witwatersrand) was focused on teaching and limited research and was mandated only later on to do research, while the other institution (ex-Rand Afrikaans University) 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. This has resulted in an increase in lecturing loads;
- Multi-campus, where some programmes in a faculty are held over the various campuses with the added challenge of synchronisation;
- Faculties do not have time for research because of the large classes to teach;
- Appointment of too many contract and temporary staff (as this category of staff receive little or no funding for research, they are unable to make a significant contribution to research output publications) and
- As a comprehensive institution there are too many undergraduate students compared to postgraduate students who encourage research.

2. *Whether REMP exists at the institution 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 a low percentage (only 11%) of respondents were aware of a REMP at UJ. There is obviously a need for the faculties and departments to publicise more widely, the mentoring undertaken in some of their departments, in order to increase awareness.

3. Explore the perceptions, attitudes and preferences of researchers/ academics and managers regarding mentorship as a strategy to improve research output.

From the interviews with the deans it was established that the interviewees were of the opinion that an informal type of mentorship was favoured instead of a formal structured mentorship programme. Interviewees were also of the view 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 available to the researchers to benchmark its success.

From the survey conducted among academic staff, it was established that a formal REMP was favoured by a majority of the respondents at departmental level. This differed with the findings from the interviews with the relevant senior managers of the

sample faculties, who preferred the informal and collegial mentoring that was currently taking place in some of their departments. There were respondents who were willing to participate in a formal REMP either as mentors or mentees.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Research production is increasingly becoming a focal point in higher education transformation. The merging of HEIs has produced various challenges, such as changing the focus from a purely teaching function, to research and teaching, as well as the expectation on novice researchers 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 DHET. The manners in which HEIs promote research output through capacity development initiatives, is important from the perspective of attracting such research funding.

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

The literature reviewed indicated that mentorship is popular in many fields, for instance, 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.

5.2 Recommendations

In view of the experiences of UJ, the following recommendations are made to assist HEIs, especially the merged institutions, to realise their research output goals:

1. The implementation of a formal REMP;
2. Participants of REMP should be selected on a voluntary basis;
3. The retention of retired senior academics to be mentors;
4. A dedicated programme coordinator should be appointed to set up and manage the mentoring programme and
5. Institutional support for the programme.

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 availability of the required resources, 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. The TTK report goes on further to state that, 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 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 supports the 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 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 cited by Wanzala 2008, 20) early retirement undermines the science development in any country, as most scientists start publishing in their mid-forties and fifties.

The recommendations made above 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 who favoured the informal collegial mentoring that was taking place in some departments.

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, it is also recommended that:

- Mentors should be given a lesser work load and
- Mentors should be given financial incentives.

Based on feedback from mentees in the survey that mentoring is a time consuming process, it is recommended that:

- Mentoring is programmed within official working hours.

On the basis of the feedback received from the survey that there are mentors and mentees who were willing to participate in the programme, it is recommended that REMP should be a formal 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. In one case there were only a few staff members with expertise that were carrying the load of a large faculty in terms of research and research publications. This issue could perhaps be addressed by retaining retired staff members with expertise.

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. Currently 22% of mentees are being mentored. These mentees, once through the mentoring process, could be possible replacements for the “depleting” resources of mentors.

Some of the salient findings on mentorship in this study are highlighted in Figure 7.

Figure 7 to be inserted here.

Hence, in implementing mentorship programmes in South Africa, especially at HEIs, one should bear in mind the following aspects:

- Firstly, the availability of skilled human resources both internally and externally

for possible mentors, should be ascertained;

- Secondly, incentives can be used to attract mentors;
- Thirdly, the specific needs of the individual must be identified before deciding on the type of mentorship programme to be initiated;
- Fourthly, there must be commitment from the mentor and mentee for the programme to be successful;
- Fifthly, there must be sufficient funding secured to sustain the programme and
- Sixthly, mentoring should be voluntary and non-threatening.

In order for REMP to be successful it must have the active involvement of all the relevant parties concerned, e.g. line managers, the human resource department and support from top management. According to Breen, Jaganyi, van Wilgen and van Wyk (2004, 430-431), capacity building is not the sole responsibility of the researcher, but a shared responsibility with the institutions that promote research.

6.1 REFERENCES

Academy of Medical Sciences. 2005. Academy mentoring programme. Available at: http://www.acmedsci.ac.uk/r_mentor.htm.

Alt, H. 2002. Benchmarking in the globalised world and its impact on South African higher education. *South African Journal of Higher Education* 16 (1): 9-14.

American College of Nuclear Physicians. 2006. ACNP mentorship programme. Available at: <http://acnp.snm.org/index.cfm?PageID=3639&RPID=60>.

Beckerman, N.L. 2011. Teaching the teachers. Available at: <http://www.aaup.org/AAUP/pubsres/academe/2010/JA/feat/beck.htm?PF=1>.

Blunt, R.J.S. and 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. and Rohde, S. 2005. FrauschaftWissen – a peer-mentoring programme promoting women’s careers in science. Available at: <http://www.wsl.ch/projects/frauschaftwissen/welcome-en.ehtml>.

Breen, C.M., Jaganyi, J.J., van Wilgen, B.W. and van Wyk, E. 2004. Research projects and capacity building. *Water SA* 30 (4): 4 October.

Breitenbach, D. 2008/9. Changing the face of postgraduate studies in South Africa. *UJadvance Tydskrif*. Somer '08/'09: 6-7.

Burns, I. 2006. Mellon retiree mentorship scheme. Circular (F 14/20) from I Burns for the Deputy Registrar (Academic and Research). 7 July.

Caucasus Research Resource Centres. 2006. Mentorship programme. Available at: <http://www.crrc.ge/print.php/en/22/>.

Cleveland State University. 2006. Statistical mentoring programme. Available at: <http://www.csuohio.edu/stamp>.

Department of Higher Education and Training. 2010. *Report on the evaluation of the 2008 institutional research publication outputs*. Pretoria: Government Printers.

Department of Science and Technology. 2002. *South Africa's national research and development strategy*. Pretoria: Government Printers.

Department of Science and Technology. 2006. Media release: New mentoring programme to help optimise skills development. Available at: <http://www.dst.gov.za/media-room/press-releases-1/new-mentoring-programme>.

Geber, H. 2005. Can mentoring stave off the looming crisis in Higher Education research publications? Unpublished Paper. FOTIM mentorship conference, October 11-12, Johannesburg.

Gevers, W. 2006. *Report on a Strategic approach to research publishing in South Africa*. March 2006. Pretoria: ASSAF.

Habib, A and Morrow, S. 2007. Research, research productivity and the state in South Africa. *Journal of Higher Education in Africa* 5 (1): 113-130.

Jansen, J D. 2003. Guest Editorial. On the state of South African universities. *South African Journal of Higher Education*, 17 (3): 9-12.

Jeenah, M. and Pouris, A. 2008. South African research in the context of Africa and globally. *South African Journal of Science* 104 (9-10): 351-354.

Jivanjee, P. 2006. Underrepresented researchers mentoring programme. Available at: <http://www.rtc.pdx.edu/pgProjMentoring.php>.

MacGregor, K. 2008. South Africa: Universities set priorities for research. University World News. 14 May. Available at: <http://www.universityworldnews.com/article.php?story=20071108145540742>.

Masuku, C. 2008. Leading research support at UJ. Research Report. Johannesburg: University of Johannesburg.

Mbali, C. 2010. Against journal articles for measuring value in university output. *South African Journal of Higher Education* 24 (5): 745-757.

Medical Research Council. 2008. Research development. Opportunities for research training: MRC research training internships for black scientists. Available at: <http://www.mrc.ac.za/researchdevelopment/restrainblack.htm>.

Mohan-Ram, V. 1999. Mentoring at NIH. Available at: http://sciencecareers.sciencemag.org/career_development/previous_issues/articles/028

Monash University. 2008. Mentoring at Monash: A guide for mentees and mentors – women’s leadership and advancement scheme. Available at: <http://www.adm.monash.edu/sss/equity-diversity/wlas/guide-for-mentees-and-mentor>.

NRF. 2006. Evaluation report for the THUTHUKA pilot mentoring programme. Unpublished Report. Pretoria: NRF.

Oxford Learning Institute. 2006-7. *Annual Report 2006-7: Annexes*. Available at: <http://www.learning.ox.ac.uk/oli.php?page=284>.

Research 2003. 2008. Framework of research and support. Available at: <http://www.research2003.uct.ac.za/strat/frame.php>.

Research Africa. 2008a. *African scientists call for change in university research ranking criteria*. 24 June: 5.

Research Africa. 2008b. *UK parliament releases report on global migration of scientists*. 22 July.

Research Report. 2008. University of Johannesburg.

Research top priority at UJ. 2007. *Citizen*, Supplement A. October 18:1.

Rex Marine Genomics Europe. 2006. GAP mentoring programme. Available at: <http://marine-genomics-europe.org/index2.php?ppid=27&mode=libre&rub=b>.

Schulze, S. 2009. A model for research mentoring in higher education: a case study in the field of education. *Journal of Educational Studies* 8 (4): 29-46.

Schulze, S. 2010. Mentees' views of a structured mentoring programme at Unisa. *South African Journal of Higher Education* 24 (5): 782-799.

University of California. 2008. *Graduate research mentorship programme*. Santa Barbara: University of University.

University of Leeds. 2007. Good practice in research mentoring: Guidelines for Faculties and Schools. Available at:

<http://www.leeds.ac.uk.sddu/research/mentoring.html>.

University of Melbourne. 2007. University plan: growing esteem: research and research training. Available at:

<http://growingesteem.unimelb.edu.au/2007universityplan/research.html>.

University of Stellenbosch. 2007. *Proposed mentor programme in teaching and research for lecturers at SU*. Cape Town: University of Stellenbosch.

Van der Walt, F. 2010. Proposal on research capacity development. May 2010. University of Johannesburg.

Waghid, Y and le Grange, L. 2003. Research and development in higher education: rating or not? *South African Journal of Higher Education* 17 (1): 5-8.

Wanzala, J. 2008. No early rest for Africa's greying scientists. *Research Africa*. 27 May: 29-46.

[Figure 1.Word.docx](#)

[Figure 2.Word.docx](#)

[Figure 3.Word.docx](#)

[Figure 4 Profile of mentees.Word.docx](#)

[Figure 5.Word.docx](#)

[Figure 6.Word.docx](#)

[Figure 7.Word.docx](#)