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# Proven researchers' perceptions of influences on academics' research output: a case study

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This article reports on the perceptions of a group of proven researchers at a higher education institution on various aspects of research. The aim was to make recommendations on how the research output of academics may be improved. Wenger's theory of learning in communities of practice was used as the theoretical framework. The approach was qualitative, by means of a case study design. Data was gathered mainly by means of interviews and document analysis. The findings indicate that individual motivation plays a significant role. However, communities of practice also play a role in stimulating the research development of novices and experienced researchers. Institutional support for learning systems can foster optimal participation in research communities.

## Bewese navorsers se persepsies van invloede op akademici se navorsingsuitsette: 'n gevallestudie

Die artikel beskryf die persepsies van 'n groep bewese navorsers by 'n hoëronderrig-instansie oor verskeie aspekte van navorsing. Die doel was om aanbevelings te maak oor hoe akademici se navorsingsuitsette verbeter kan word. Wenger se teorie oor leer binne praktykgerigte gemeenskappe is gebruik as teoretiese raamwerk. Die benadering was kwalitatief deur middel van 'n gevallestudie-ontwerp. Data is hoofsaaklik ingesamel by wyse van onderhoude en dokumentanalise. Dit is bevind dat individuele motivering 'n belangrike rol speel. Aan die ander kant speel navorsingsgemeenskappe ook 'n rol om navorsingsontwikkeling by nuwelinge en ervare navorsers te stimuleer. Instellings se ondersteuning van leersisteme kan optimale navorsingsdeelname aan navorsingsgemeenskappe bewerkstellig.

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Publish or perish! — words that resonate strongly with academics in Higher Education (HE) internationally as well as in South Africa. Publications provide communities with evidence of the work academics do, advance knowledge, enhance the reputation of individuals and universities, and improve teaching (Le Grange 2003: 129-30). A positive correlation between research productivity and teaching effectiveness indicates that they are possibly mutually reinforcing (Sutherland & Wolhuter 2002).

According to the research policy of the University of South Africa (UNISA) where this study was undertaken, academics are expected to publish at least the following number of research articles over a period of five years: professors, seven; associate professors, six; senior lecturers, five; lecturers, four; and junior lecturers, three. Grants for attending conferences locally and overseas are influenced by research output. Requirements are waived for researchers with a National Research Foundation (NRF) rating or a research output that exceeds expectations. In addition, promotion and merit awards are ultimately determined by research output. Academics can also gain financially from subsidies that are paid to the institution for publication in accredited journals.

In spite of the requirements and incentives, many academics at UNISA do not meet the expectations. For example, the research output of three related departments relevant to this study for the year preceding this research project was as follows: 54 publications delivered by 29 academics from a total of 107 staff members. Press statements confirmed that the research output at UNISA was relatively low (Rademeyer 2006: 5), that it was primarily researchers older than 50 who were publishing, and that the general quality of journals was low (Brits 2006: 6).

It was therefore imperative to investigate the factors that influence the research output of academics. The investigation took place at UNISA. The factors identified were interpreted in the light of Wenger's theory on learning in communities of practice, which serves as theoretical framework for the study.

## 1. Theoretical framework: Wenger's theory on learning in communities of practice

Wenger's (1999 & 2007) theory places learning in the context of lived experience of participation in communities of practice. For example, researchers participate in the practices of the research community. This social theory is characterised by the following components: meaning (learning as experience); practice (learning as doing) is related to a shared history, social resources, frameworks and perspectives that can sustain mutual engagement in action; community (learning as belonging) is related to the social configurations in which our enterprise is viewed as valuable and our participation as competence, and identity (learning as becoming) indicates how persons view themselves and is related to how learning changes who we are and how we create personal histories in the context of our community.

Learning refers to personal experience and social competence (Wenger 2000: 226). Communities of practice define competence by three elements (Wenger 2000: 229):

- Members understand what their community is about and hold each other accountable to a sense of joint activity. To be competent is to be able to contribute to this.
- Members build their community through mutual engagement. They interact and establish norms. To be competent is to be able to engage meaningfully.
- Communities of practice have a shared repertoire of communal resources including language, routines, artefacts, tools, styles and stories. To be competent is to have access to this repertoire and be able to use it appropriately.

Novices (called apprentices) learn to solve problems through participation. The practice of the community creates the "curriculum". Lave & Wenger (1991: 21) state:

> … a training program that consists of instructional settings separated from actual performance would tend to split the learner's ability to manage the learning situation apart from his ability to perform the skill.

Language plays an important role, since language gives access to interaction in the social world. Novices play several roles in the community of practice, for example as learning practitioners or in being responsible for smaller parts of a project. As novices learn to perform tasks and master understandings, they move towards more intensive participation. Their identities develop accordingly from novices to proven researchers.

When designing itself, a community should look at the following elements: events (such as conferences that bring the community together and develop identity), leadership (such as project leaders and networkers), connectivity (discussing research issues and offering support); membership, learning projects (that explore knowledge, find gaps and define projects that can close the gaps), and artefacts (such as documents, tools and websites) (Wenger 2000: 230-2).

The success of organisations depends on their ability to design themselves as social learning systems. The three constitutive elements of learning systems are: communities of practice, boundary processes among these communities, and identities as shaped by our participation in these systems. For example, an HE institution has a learning system for research. The building blocks of this system comprise different communities of practice, including academics, librarians, statisticians and editorial staff. Inside communities learning takes place because competence and experience need to converge for a community to exist. Boundaries connect different communities. Boundary interactions can create bridges if they are well-co-ordinated, transparent and negotiable (Wenger 2000: 234). An identity (as a proven researcher) is a lived experience of belonging or not belonging. A healthy identity will cross boundaries and be open to new experiences. It is a vehicle for participating in the social world (Wenger 2000: 239). The idea of identity is strongly tied to motivation — the desire to become a better practitioner/researcher.

According to Wenger (2000: 243), the above-mentioned view on learning systems implies that:

- Individuals should find the communities they belong to. Learning means engaging and contributing to the practices of communities of learning.

- For communities, learning means refining practices and ensuring new generations of members. Communities of practice should balance core and boundary processes to enable deep learning in a specific area and be linked to other parts of the system.
- Organisations should foster social learning systems, but they cannot fully own or control them. To be effective, organisations should support the interconnected communities of practice and provide conditions for optimal participation. Lave & Wenger (1991: 55) warn that organisations should carefully organise their socio-cultural spaces into accessible places of activity; make essential knowledge available; co-ordinate participation within a community; handle conflicts, interests and the motivation of participants. Organisations should also carefully consider the impact of their policies on performance/research output (Foote *et al* 2002: 290). This includes time-sensitivity and the potential cost of "wrong" decisions.

With Wenger's theory as the background, a literature review of factors relating to research productivity in HE follows. Thereafter the article reports on an investigation into proven researchers' views on factors that influence research output at UNISA.

## 2. Research productivity: international context

The complex interplay of various individual (dispositional) and institutional (environmental) variables influence the research output of academics. Individual factors that were identified include gender, sense of control (greater control is positively associated with a better research output) and rank (full professors are more productive than lecturers in the other ranks) (cf Dundar & Lewis 1998, Gander 1999, Perry *et al* 2000).

The research culture of a university influences the research output of academics. In line with Wenger's notion of how organisations impact on learning systems and communities of practice, the research culture depends on the emphasis of the institution on research, a positive group climate, frequent communication, available resources (particularly human resources), and appropriate rewards

and support (cf Bland & Ruffin 1992, Neumann & Finaly-Neumann 1990, Perry *et al* 2000: 187, 188). A decentralised management structure and strong leadership at dean level were also pinpointed as critical elements (Pratt *et al* 1999: 43).

Other factors that influence research productivity are the presence of a "star" faculty (a small but very productive group of researchers in departments), financial and other physical resources (such as a well-resourced library), teaching load (a high ratio of graduate rather than under-graduate teaching is associated with high research productivity in the natural sciences) and the availability of research assistants (Wenger's apprentices) (Dundar & Lewis 1998).

A number of studies focused on the relationship between teaching and research. This illustrates how boundaries between different communities of practice are crossed. Academics placed different emphases on teaching and research when describing their responsibilities (Berrell 1998: 87, Serow 2000). Their views ranged from perceiving teaching and research as mutually incompatible to a symbiotic relationship between the two (cf Barnett 1992, McCaughey 1992, Robertson & Bond 2001). One study found that research productivity and teaching effectiveness were nearly uncorrelated (Marsh & Hattie 2002: 635). Hence, Brand (2000: 42) argued for allowing academics to pursue those roles they were most gifted at and interested in.

The win-win role of mentoring programmes to support novices, including those for non-native English speakers, has been indicated (Gosden 1995, Morrison-Beedy *et al* 2001). This presents an opportunity for apprentices to learn to perform tasks and move towards more central participation. Accordingly, their identities as researchers develop as they gain experience. Research has indicated that mentoring needs to include an expert mentor; commitment of both parties to the process; mutual respect and realistic time frames. Limitations include time limitations; other work commitments; failure to move to closure and uncertainty regarding relationships (Balint *et al* 1994, Kartje 1996). Mentoring approaches need to be well organised by universities since they are not always introduced voluntarily (Berrell 1998: 91).

## 3. Research productivity: South African context

Some research has been conducted to determine why South African academics publish. Reasons mentioned included a sense of duty (Poggenpoel & Myburgh 1997: 89-96), to improve their fields of specialisation and to contribute to knowledge (Mwamwenda 1994). In the latter project, the research was restricted by limited questionnaire responses that did not allow for motivations such as financial gain or psychological reasons (recognition for instance). The fact that research output was not a criterion for promotion at the time the research was conducted significantly influenced the results.

In addition to the above, some academics believed research was conducted to contribute knowledge and improve communities (Poggenpoel & Myburgh 1997: 89-96). To enhance knowledge, some participants emphasised the scientific nature of research. This referred to the truth value of results and the logical relationships between the different components/steps of the research project.

There seems to be a limited understanding of what research involves at South African HE institutions. The University of the North had the lowest research output of all universities at a specific stage (Ruth 2001: 155). During this time, interviews with 13 heads of departments revealed that they were sharply divided on what constitutes research and teaching and how these were linked. There were also conflicting views on what was available and required to support an effective teaching and research environment. Thus, organisational structures could not provide conditions for optimal participation in communities of practice.

Research has identified certain factors that influence research, such as age, race and gender (Singh 2000). Mwamwenda (1997: 95) determined that the most productive group was males aged 50 to 59, of senior ranks and with doctoral degrees. A 2002 report confirmed that the majority of South African research outputs were by ageing, white males (Christiansen & Slammert 2005: 1048). According to the report, only 17% of these outputs were by females. This may be the legacy of the apartheid era. In the previous dispensation, white males were privileged with regard to appointments and promotions.

This offered them greater opportunity than other groups to access the research arena and gain relevant experience. South Africa thus need research development that would increase publications by young, black and female researchers (Christiansen & Slammert 2005: 1047, Rademeyer 2006: 5). Another survey identified lack of time, work overload and lack of support as factors limiting research output (Wissing *et al* 2002).

Inexperienced staff indicated a need for training and mentors (Vakalisa 1998, Zeelen 2003). This included training during masters and doctoral studies (Jansen *et al* 2004: 79). Vakalisa (1998: 61) states that

> ... capacity building in research skills needs urgent attention because it is only by producing able researchers that institutions of higher learning will be able to meet the needs of our new democracy.

The following were recommended: workshops/seminars, mentoring, identifying young talented researchers, defending dissertations and theses in public so that others can learn from this, establishing a centre for academic development and a culture of using leave for research purposes. Other recommendations included allowing more research time for academics, contracting research outcomes in task agreements, training in the writing of articles and involving postgraduate students as research assistants (cf Vakalisa 1998: 61, Wissing *et al* 2002: 92, Zeelen 2003: 144). Accordingly, the research directorate of UNISA offered numerous training programmes, of which one focused on writing for publication.

Although most of what has been mentioned is in line with learning by participating in communities of practitioners, contracting research outcomes in task agreements is a measure of control that does not support effective functioning of communities. According to Wenger's theory, training in the writing of articles will only lead to learning if the training programme is integrated into actual performance.

Although the above-mentioned indications throw some light on the issue of research in HE in the South African context, many of the studies are limited by their sample selection, poor questionnaire design or lack of in-depth investigation of academics' views on

research. In addition, no investigation into the matter has yet taken place in the context where this research project was launched. The following research question was posed: what are the perceptions of a group of proven researchers at one cluster of departments of influences on research output? The ultimate aim is to make recommendations on how the research output of academics may be improved. The remainder of the article is devoted to addressing these issues. The research method is explained and the findings are discussed and interpreted.

## 4. Research design and method

The research approach was qualitative. The research was undertaken within an interpretive framework in the sense that it was a communal process, informed by participating practitioners, and sensitive to the role of context (Henning 2004: 19). The design type was a case study. Case studies are intensive descriptions and analyses of a single unit or bounded system such as a group or a community. Thus, it was an in-depth investigation of a group of academics at one cluster (three departments) at UNISA into their views of influences on research output.

Thirteen participants (six male, seven female) were purposefully selected on grounds of being proven researchers. Policy defines a proven researcher as an academic in possession of a doctorate and who has produced at least three research articles in the previous five years. Their research productivity was also considered. Two participants were NRF rated and two had received awards as best researchers in the cluster. Eight participants were full professors (11 to 28 years' teaching experience); three were associate professors (14 to 19 years' teaching experience) and two were senior lecturers (5 to 15 years' teaching experience). Two researchers (one female), were black. Only two participants were black because they were in the minority as proven researchers.[1]

1 The reason for this may be because HE institutions have difficulty retaining well qualified black staff since they are in high demand and are able to find more lucrative jobs elsewhere (Christiansen & Slammert 2005: 1048).

Data was gathered by means of interviews. An interview schedule had open-ended questions focusing on various aspects of research. Questions covered the way academics proved themselves as researchers, incentives for doing research, support systems they used, stumbling blocks they experienced and recommendations for novice researchers. Probing questions were asked. The interviews were conducted in the offices of participants during work hours and lasted at least one hour. The interviews were tape-recorded and transcribed *verbatim*. Document analysis (regarding research policies) and informal interviews (with research directorate staff) complemented interview data and served to gain additional information.

Analysis was done by means of the constant comparative method (Poggenpoel 1998: 339, Merriam 1998: 159). The basic strategy for analysis was just what its name implies — constant comparison. Thus, analysis began with identifying units of information that aimed at some required understanding and these were the smallest pieces of information that could stand by themselves. After all the units were identified they were placed into categories. The next step was to compare units applicable to each category. Constant comparison of the units generated the categories' theoretical properties. Thereafter, units of all the interview transcripts were compared with the properties describing each category. Categories were also compared with one another and integrated. In the next level of explanation, findings were interpreted in the light of Wenger's theory.

Ethical measures undertaken included informed consent, assurances of anonymity and confidentiality, and consent to use a tape-recorder. Guba's model for trustworthiness was considered (Poggenpoel 1998: 349-51). In this model the following methods were used: making sampling decisions carefully, using a tape-recorder, having professional *verbatim* transcriptions made of interviews, obtaining feedback from participants when unsure about the meaning of statements, and ensuring inter-coder reliability by involving both researchers in the data analysis.

In the next section the findings are explained and briefly discussed. This is followed by an interpretation of the findings in the

light of the theoretical framework for the study. The study concludes with some recommendations.

## 5. Findings and discussion

The findings gave rise to two main categories, namely influences on the research process and perceptions of participants about various aspects of research. From these two categories, the authors identified sub-categories (cf Table 1).

Table 1: Overview of categories and sub-categories from analyses of interviews with proven researchers (n=13)

| Categories | Sub-categories |
|---|---|
| Influences on the research process | • Influences on personal development as a researcher<br>• Incentives for doing research<br>• Organisational support systems<br>• Stumbling blocks<br>• Gender/race influences<br>• The influence of teaching<br>• The development of a research identity |
| Participants' perceptions about various aspects of research | • The "highs" and the "lows" of research<br>• What participants view as good research<br>• Recommendations for novice researchers<br>• Research concerns |

The categories and sub-categories are presented in the text below and are illustrated by means of quotations from the interview text.

### 5.1 Influences on the research process

#### 5.1.1 Influences on personal development as a researcher

- *Motivators for getting started*

Participants indicated three different motivators for embarking on their research careers:

- Some identified their own postgraduate studies as a starting-point. In this group were those who had skilled supervisors who guided them. For others, a lack of skilled supervisors forced them to obtain the research skills they needed. One said:

> I really used my D to school myself in qualitative research. That was the only schooling that I got. It was purely on my own through books.

- For others, being appointed as researchers or research assistants meant they received training by means of workshops, participation in big projects, or mentoring. One participant stated:

> I landed in a huge countrywide project on the development of science and maths. So, I landed right in the middle of this big project and I had to sink or swim. Fortunately I had an excellent department head as mentor.

- The members of a third group believed their research careers started at postdoctoral level when they were employed as academics. At the time they were motivated by various reasons, such as, adapting to the institution's climate of "publish or perish"; not being promoted and hence the need to prove oneself as an academic; a sense of responsibility to students as supervisors; "basic inquisitiveness"; the pleasure derived from writing, plus the financial gain of publishing books; and the need to make a contribution to academic discourse. A participant said:

> It forced me to try and make sense of my own situation in addressing a discipline which I believed needed to recapture [...]academic legitimacy that could only be captured if you were prepared to enter into the frail debates that surrounded it. I also pursued a vision, that when one was compelled to research, you are not researching a single truth, but you are researching truth in its many manifold expressions. And that is what consumed me and drove me to produce some useful research.

From the above it is clear that participants were intrinsically motivated to do research, with or without assistance. This is also illustrated in the following section.

- *Individual efforts versus support*

Many participants developed into researchers through others' support. In contrast, some schooled themselves. For example:

> I was disillusioned here with some of the so-called research professors. I realised they were not very intellectual, read little and very selectively and did not think very critically about what they read. I had mentors with whom I had discussions, but not with my supervisor. I had pathetic supervision and had to teach myself.

Informal and formal mentoring also played a role as participants consulted colleagues on various issues, embarked on team research or underwent formal training at the institutions where they were employed. They also took responsibility for developing their own styles of doing research and writing research reports.

### 5.1.2 Incentives for doing research

Participants were divided on what they experienced as the main incentive for doing research. Generally, they were not motivated to aim for NRF rating. Rather, a number of the participants were driven by heartfelt passions for an issue. One stated: "Something needed to be said, and I responded to that". Some were excited by people's stories and learning something new and interesting from them. For others, duty, recognition, promotion, monetary awards or grants to attend conferences locally and abroad played an important role:

> It buys me the opportunity to go overseas, to go to conferences or to research institutes. I went to Unesco this year on a parent involvement course and those three days I spent in that library [...]! I came back with things that led on to another publication. You can say: 'But you've got the library, the Internet. How on earth could three days in Geneva mean so much?' I can pinpoint to you what I gained from that!

However, it may be assumed that motivational factors are not static, but change over time, as academics' research experience grows and they interact with others from different research contexts.

### 5.1.3 Organisational support systems

The role of the organisational learning system for research in enhancing or inhibiting research output is indicated by participants' responses. Librarians, statisticians, editors and respected peers were identified as playing important roles in support of research. Peers were often asked to critically read draft articles, although this was not readily undertaken because of heavy workloads. More than one participant, therefore, expressed the need for colloquia, especially those people who had experienced these at institutions of previous employment. One said:

> I miss colloquia. I wish here [...] we could have space to present our research projects to talk about the things that interest us [...] debate, argue and so on. There is just no scholarly networking and interaction here.

This indicates the need for establishing a research culture at an institution to support research and is in line with previous findings (cf Bland & Ruffin 1992, Perry *et al* 2000: 187, 188).

Facilities that influence research endeavours include the availability of computers, internet access and library facilities. One explained: "I am always onto the Internet. I compile my own bibliographies. It is phenomenal because you can sit and print it here; you don't have to wait for it".

### 5.1.4 Stumbling blocks

Many participants experienced themselves as the main stumbling blocks. For example, some were intimidated by the writing of the research report: "I write a few words, then I make coffee, then I pick a few roses, then I do this and then I do that!" Others indicated that they wanted to live balanced lives that included hobbies, friends and families.

However, in accordance with other findings (Wissing *et al* 2002), lack of time was identified as main stumbling block. This was caused by "all-consuming" teaching commitments and excessive administrative duties, especially of participants in managerial positions. Excessive administration made academics feel like clerks and caused depression and lack of job satisfaction. One proclaimed: "Look … if I open my e-mail and it is another administrative request, and some more data they want, look ….!" while another said, "It destroys me!" Institutional transformation burdened academics with endless meetings, forms for completion and the re-structuring of courses. This took place at a time of overburdened infrastructure which forced academics to handle countless student enquiries and complaints.

Participants also complained about institutional requirements. Particular reference was made to the fact that academics, who earned conference attendance based on previous publications, were required to publish additional articles in accredited journals on their return. This led to endless follow-up reports which participants "hated", made them feel supervised and caused demotivation. They experienced the system as "punishing, not nursing researchers". It also did not make sense that the same requirements were set for domestic and

foreign grants. This confirms the importance of a reward-support framework for commitment to research and hence improvement of research output (Neumann & Finaly-Neumann 1990).

The lack of institutional infrastructure for research support was also mentioned and included the lack of close professional staff to give advice on research issues, colloquia or research assistants. The role that research assistants could play was also highlighted by Dundar & Lewis (1998). Participants experienced the environment at work as "hostile" rather than "supportive".

### 5.1.5 Gender and race influences

The literature review indicated that gender influences research (cf Singh 2000).[2] It was confirmed by this research project. For example, a black female researcher experienced continuous sexual harassment when she travelled alone as part of a research project. She also pointed out that black female researchers were generally not taken seriously by many other researchers and were expected to be research assistants.

Politics also influence research output. White males referred to being discriminated against and put last in line for funding. On the positive side, a white English-speaking male experienced himself as a "foreigner" when first entering the research arena. At the time, the discipline he was involved in was highly politicised and dominated by white Afrikaans-speaking academics. Eventually his voice was heard, because it was an English one. Participants also pointed out that the waiting time for publication in Afrikaans journals was significantly shorter because of fewer articles being submitted. This allows for an increased output by academics willing to publish in Afrikaans.

### 5.1.6 The influence of teaching

Participants generally saw teaching and research as mutually influencing each other. This is in line with research by McCaughey (1992), amongst others, but not with other research by Barnett (1992). The link between teaching and research was most evident with regard

2 In the light of this, it needs to be mentioned that UNISA had started to make special funds available to support the research endeavours of black females. This could improve their research output.

to postgraduate supervision because supervisors often attracted students according to their publications. Supervision sometimes led to joint publications. Research also enabled participants to keep abreast with developments in the courses they taught. This relationship is illustrated by the following remark:

> With personnel development I wrote a module. Then I realised it could easily be linked to [my research on] invitational schools [...]. It has happened the other way round as well. Total quality management started as a research project. Then I realised it was an excellent topic for my master's programme.

However, problems were experienced when academics' teaching duties and research interests were not in line.

### 5.1.7 The development of a research identity

Although the research process was sometimes stressful and frustrating, most participants mentioned feelings of satisfaction and enrichment. Such feelings motivated them to do research, provided it was on projects they were interested in. This clearly illustrates the importance of autonomy in the selection of research projects to pursue. Participants enjoyed the task variation brought about by the gathering of data, listening to participants' stories and discovering new facts. Such discoveries caused feelings of empowerment and strengthened their identities as proven researchers. One participant explained:

> Research has been the core of my life in many ways. It has been driven by the desire to push out the boundaries of one's own personal knowledge into a space that continually needs to be explored as there is always more to what one has in any moment in time. Research is the agency which provides one with the opportunity to actually push those boundaries and discover more in whatever way it may require one to pursue that knowledge.

Having articles accepted for publication and thus making a contribution to developments in their fields or being asked to present talks also develops research identities. One example is:

> This year I did something like 16 talks to parents or teacher groups and I so enjoyed it! I come home on a high from that kind of dissemination of research [...] that is as exciting to me as going into space!

## 5.2 Perceptions participants have about various aspects of research

### 5.2.1 The "highs" and the "lows" of research

The "highs" enhance research identity, motivation and output. This includes the academic recognition of having articles accepted for publication, being cited, being asked for copies of conference papers or acquiring NRF rating. For example:

> Highs [...] obviously I think of the recognition given to one in international context [...] the publication of articles in international journals [...] when a researcher's voice is heard in international circles. Highs in terms of the recognition of one's peers in citations, in responses.

Other highs included making new discoveries, especially of the unexpected. This was enhanced within the dynamics of team research which a participant described as "unbelievably exciting". "Lows" constituted anything that prevented researchers from getting on with their research projects, such as excessive teaching commitments and administrative overload, as indicated earlier. Since teaching and administrative duties are influenced by management, this is in accordance with previous findings on the important role management plays in the research output of academics (Pratt *et al* 1999: 43).

A general complaint was about the prolonged period before articles are published or the reasons given for rejection. Through experience participants have learnt to handle the rejection of articles and use criticism to improve their articles. One said:

> It is a road marked by many potholes, bruised egos and a spirit that is sometimes battered, but one builds up momentum to carry on again.

### 5.2.2 What participants view as good research

Participants were generally influenced by their research aims in defining research of a high quality. This was described as balancing theory and an empirical investigation, published research, rigorous, original and ethical research, and delivering a product that is "unique" or has a significant impact. This is in accordance with findings in an earlier South African study (Poggenpoel & Myburgh 1997):

> It is research that is driven by a commitment to further the boundaries of knowledge [...] There is an element of courage in it as well. Good research does not leave the researcher unchanged. It makes a contribution [... .] You can feel good about your research if others start to quote you.

Some believed that this was only possible if researchers were passionate about an issue: "I think it shows in the research when your heart is not there". This confirms the role of individual motivation in research productivity.

### 5.2.3 Recommendations for novice researchers

Researchers' views on how novices could move from peripheral towards more intensive participation were influenced by their own histories. Participants believed that research was primarily determined by motivation and they emphasised the role of self-empowerment: "Research is hands on. You should just do it". Participants recommended that, to empower themselves, novices should identify a research interest and acquire a good basic knowledge of research methods (by means of courses, conferences, textbooks or academic publications). As regards mentoring, some researchers were willing to act as mentors, provided novices specialised in the same field and did not become overly dependent. Others would only be willing to act as mentors if they were compensated for it in some way. In line with previous studies (cf Balint *et al* 1994, Berrell 1998), this confirms the important role of management in organising mentoring programmes well.

### 5.2.4 Research concerns

Participants pointed out a number of research concerns. These focused on five issues in particular:

- There was concern that research outputs were, to a significant extent, limited to white academics and seldom included important stakeholders such as students and school teachers.
- Regarding the topics of investigation, a participant was concerned that institutional problems and community service did not receive enough attention. "If you did not focus on communities who struggled with real problems, your research could not make a contribution", one said.

- In line with newspaper reports (Brits 2006), participants had quality concerns.
- Concern was also expressed that research findings were not reflected in policy documents.
- Institutional requirements also caused concern, for example those relating to excessive administrative burdens, as indicated.

## 6. Discussion in terms of the theoretical framework

If the findings are interpreted in terms of Wenger's theory and the aim of the study, three themes are evident: the role of individual motivation, a lack of optimal functioning of the community of practice that was involved in the study (the research community of the three departments which function as one cluster), and a lack of an institutional support structure. Each of these will be explained briefly.

### 6.1 Individual motivation

Proven researchers took responsibility for engaging meaningfully in the practices of their research community. Participants were all intrinsically motivated to do research, consciously planned for available time, set goals for themselves (for example, of what they wanted to achieve annually), and learnt to handle criticism and rework rejected articles. They undertook to approach peers or study the work of others in the wider research community to enhance their own knowledge and skills. Thus, they understood what their community was about and how to use its communal resources. Gaining experience, they moved towards more intensive participation in, and significant contribution to, knowledge in their own fields of interest. Accordingly, their identities as competent researchers developed. This motivated further participation and increased output.

### 6.2 Research community

It was clear that the community did not function optimally. It seemed to lack leadership to actively strive to refine practices as a community and ensure a new generation of members. For example, there were no structures in place within the community for research training

and capacity building (for instance by means of departmental colloquia, mentoring programmes, support with research design/analysis issues or team research where participants could learn through experience). Moreover, the relevant research community did not try to cross boundaries to other research communities at the institution and thus enrich their research knowledge and skills. At best, they used the support of other communities of practice such as editorial or library staff when needed.

### 6.3 The institution

A focus on the control rather than on the nurturing of the social learning system in which the communities of research practice function inhibited rather than stimulated research output. An example of control was the fact that staff were inundated with requests for information regarding their research plans and for reports on their research progress. Such administrative burdens impacted negatively on research output because they made staff feel supervised, caused demotivation and were time-consuming. Moreover, institutional policies on obtaining research grants were experienced as systems of punishment instead of reward. Policies and practices did not make sense to academics or enable novices to enter the research arena easily. Academics lacked uninterrupted time for meaningful research as well as for the alignment of research and teaching duties. Better institutional structures for research support were also needed, such as advice with research design or data analysis issues.

## 7. Conclusion and recommendations

The research was limited to one cluster of departments in one college of UNISA. However, it successfully indicated how the research output of academics was primarily influenced by the interrelationship of individual factors with various others in the relevant research community and the institution.

Leadership in research communities is needed for the effective functioning of such communities to build research capacity and stimulate research output. More research is needed on how to accomplish

this. However, individuals and communities are influenced by institutional structures (or lack thereof) as well as by the various research policies and practices in place. Management can therefore play a significant role in enhancing the contexts in which academics work to enable them to improve their research outputs. Managers should take cognisance of the various influences on research output as identified by this research and interpreted in light of Wenger's theory.

HE institutions cannot sow the seeds of a passion for research in the hearts of academics. However, they can do a great deal to create a climate that fosters the social learning systems for research. Ultimately the gains, in terms of knowledge, prestige and finances, are not in aid of the academics only, but also for the institution and the country.

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