

External group coaching and mentoring: Building a research community of practice at a university of technology

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Globally, a clarion call has been made for higher education institutions to establish creative and effective research capacity-building systems with the purpose of developing a next generation of scholars. The training and skills development of a researcher entail a process of increasing levels of participation in diverse communities of practice. We argue that external group research coaching and mentoring could provide a formative social context which negotiates the tensions of engagement. It could also improve accountability and building of a shared repertoire inherent to a research community of practice at a university of technology in South Africa. The purpose of this qualitative single-case study is to evaluate the practical relevance of the external coaching and mentoring programme in negotiating the tensions inherent in building a research community of practice. The findings indicate that the majority of students moved from a peripheral position of uncertainty and doubt to one of mutual engagement. A handful of students' participation remained peripheral and, in some instances, became outbound. The ways in which the next generation of scholars engaged with each other and with the world profoundly shaped their identity. Rites of passage to membership of this research community of practice were negotiated and an initial shared repertoire of resources was developed.

Keywords: Community of practice, coaching, mentoring, postgraduate, research, higher education, development, situated learning

South Africa's got a major problem with its professoriate, with especially white men leaving the system. What we need to do is take every really promising young academic, who has more than the basic smarts, and mentor them (Professor Jonathan Jansen, Rector, University of the Free State, 2011).

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Introduction

Universities across Africa are running out of academics and South Africa is no exception to this trend. According to the Secretary General of the Association of Africa Universities, Professor Mohamedbhai, universities need to think 'out of the box' if they are to succeed in developing a next generation of scholars (MacGregor, 2008). Boyer (1990) postulates that scholarship consists of four overlapping functions, namely discovery (the research function); integration (the ability to build multidisciplinary connections and to integrate research findings into a larger body of knowledge); application (applying knowledge for the greater good of society), and teaching (the key function of scholarship). A next generation of scholars may, therefore, be described as promising young academics whose main focus areas of teaching and learning as well as research and community service are focused on serving society. More particularly, they serve their immediate communities by means of a transdisciplinary agenda. Consequently, these academics are able to respond more effectively to the ever-changing knowledge environment. Based on Boyer's model, the term 'scholar' in this study refers to young academics who seek scholarly activities related to all forms of learning.

The Vaal University of Technology (VUT), the case under study, originated from the Vaal Triangle College for Advanced Technical Education which was established in 1966 in response to industrial growth in the Vaal Triangle region. It was anticipated that the College would be a training facility for technicians who could service the chemical and engineering industries in the region as opposed to opting for full university status. While 60 White students were registered at inception in 1966 at the Vaal Triangle College for Advanced Technical Education, the VUT had 22.014 students, the majority of whom were Black students, in 2011 (VUT, 2011). A large number of the current body of students come from underprivileged communities.

The original institution did not have a primary research focus; efforts to grow research have been pursued since 1996 (VUT, 2011). Given the low research base from which VUT departed as a University of Technology (UoT), the opportunity has arisen for a research culture to be socially constructed by creating a research community of practice (RCoP). A one-size-fit all approach to the socialisation of a next generation of scholars, particularly within a transdisciplinary environment, has limited prospect of success. This approach neglects to consider not only the distinct disciplinary cultures of the science paradigm, scholars and research practice, but also the transitioning academic identities such as race, gender, class, academic background and phase of higher education degree studies (VUT Hub and Spokes Model, 2009).

The research coaching and mentoring programme at VUT was developed according to the Hub and Spokes Model (2009). This Model is a structured programme which aims at inviting mentors (research leaders of strategic focus areas at VUT) into a structured relationship with postgraduate students to support the growth of the next generation of scholars at VUT. The programme includes both an internal and an external coaching and mentoring approach that are facilitated

concurrently. The internal process encompasses the mentoring activities that take place during the relationship between the research leaders (supervisors) and the mentees (postgraduate students). The external process, which forms the focus of this article, refers to the formalised external group coaching and mentoring programme taking place between two external research coaches/mentors and the postgraduate students (hereafter referred to as students) of the Hub and Spokes programme. The agenda is led by students (external coaches and mentors are responsive to the students' expressed needs, and the content of the meetings is, to a large extent, determined by the students). An additional unique aspect of the programme is rooted in an appreciative approach, which values the positive core of personal and organisational life.

Coaching and mentoring programmes

Clutterbuck and Megginson (2005) broadly describe coaching as being associated with some form of performance change in the immediate work context, while mentoring is more concerned with career self-management. We view research coaching as a collaborative process between a research coach and coachee that facilitates personal and professional development in order to achieve sustainable, high-impact and socially responsible research output. We believe that mentoring activities are integral to a research coaching relationship. A coaching and mentoring programme refers to a purposeful and structured didactic offering including the content, sequence and accompanying activities in order to achieve specific outcomes (adapted from CHE, 2004).

In response to a number of appeals such as the one by Jansen (2011) that promising young academics be mentored, numerous public and private higher education institutions have adopted formalised, internal coaching and mentoring programmes as:

- a method of structured support for research productivity (Geber, 2010; McMillan & Parker, 2005; Schulze, 2009);
- a strategy to promote research output and manage research diversity in private higher education institutions (Maritz, Visagie & Burger, 2012);
- a career management strategy for fast-tracking newcomers (Geber, 2003), or
- part of staff development (De Gruchy & Holness, 2007; Maritz & Visagie, 2011).

All these programmes are, however, internal institutional programmes focused on developing individual academic staff.

Darwin and Palmer (2009) reported that internal coaching and mentoring programmes often find it difficult to obtain sufficient coaches or mentors. In addition, Koro-Ljungberg and Hayes (2006) mentioned structural barriers such as unwillingness by faculty to mentor or faculty work overload. Darwin and Palmer (2009) suggested

moving away from the traditional dyadic model of mentoring to a group mentoring model.

Group models have the benefit of generating different perspectives, with group members integrating energies and experiences. Support comes from peers as well as other external or organisational members. Group models also support collaborative learning and could be more cost and time efficient. Miller (2002) argued that external coaches and mentors have merit, because they do not have a personal history with the students, making it easier to start afresh without any preconceived ideas or prejudice.

Situated learning and communities of practice

In this article, we employ Lave and Wenger's (1991) sociocultural model of situated learning. According to Harrison (2008), many aspects of graduate student research involved situated learning within a community of research practice in which legitimate peripheral participation occurred. Over time, with recognition, support, encouragement, and nurturing, a student's position within the academic research community typically evolved from that of an observer on the periphery to a more central and responsible role of active researcher. Community of practice (CoP) is a core concept of the situated learning theory.

Lave and Wenger (1991) coined the term CoP while studying apprenticeship as a learning model. Although apprenticeship is normally thought of as a relationship between a student and a master, studies of apprenticeship have revealed that a more complex set of social relationships influence learning.

CoP refers to the community that acts as a living curriculum for the apprentice. Such CoPs are formed by those who engage in a process of collective learning in a shared domain of interest (Wenger, 2006). Participating in a CoP is essential to human learning:

It is at the very core of what makes us human beings capable of meaningful knowing (Wenger, 2000:229).

Wenger (1998) introduced three dimensions of the relationship between practice and community, namely mutual engagement, a joint enterprise, and a shared repertoire of ways of doing things. Mutual engagement is the basis for relationships that are essential to the functioning of a CoP. It involves regular interaction of the members, who negotiate meaning of practice within the community (Moule, 2006). The interaction may be formal meetings or informal exchange, which enables engagement and acts to maintain the community. Wenger (1998) suggested that communities are composed of diverse individuals, yet by collaborating, they influence each other's functioning within the community. Individuals create their own identities that function within the community through mutual engagement, a sharing practice.

In a previous edition of this journal, Dison (2004: 97) supports this aspect in her findings:

It is through this identification and commitment to pursuing a goal and through guided participation in practice, that they [postgraduate students] acquire the knowledge and develop the skills and competencies as researchers.

Joint enterprise refers to the collective process that maintains the existence of the CoP. It not only mandates the sharing of goals, but also aims at establishing a negotiated enterprise, involving mutual accountability (Wenger, 1998). Working in a mutual accountable way requires a conscious concern about each participant's engagement within such a community of research practice. There should be a sense of both individual and communal responsibility.

Wenger (1998) pointed out that a community of practice is not merely a community of interest, but the members develop a shared repertoire of resources: ways of doing things, and ways of addressing recurring problems – in short, a shared practice. However, it is not only about the sharing of resources, but also about understanding the technology of practice by being transparent (Lave & Wenger, 1991).

While the ideas propounded by situated learning provided our basic inspiration, we recognise certain limitations in both theory and practice. In later writings, Lave (2004) challenged the strict dichotomy between periphery and full participation by proposing that participation might involve learning trajectories which do not lead to an idealised full participation. There might be a number of other forms of participation, including marginal participation. It is argued that not everyone aspires to (or can achieve) full participation. In addition, the power relationships within a CoP might deny novices full participation if the novice attempts to transform the knowledge and practice of the existing community.

The students involved in the study at VUT are members of different professional and research communities, and it can be anticipated that the community will not always necessarily interact harmoniously. However, if communality is favoured, it might limit diversity and conflict might be ignored (Moule, 2006).

In this article, we argue that external group research coaching and mentoring could provide a formative social context which negotiates the tensions of engagement, while improving accountability and building a shared repertoire inherent to a research community of practice (RCoP) at a University of Technology in South Africa.

The purpose of this study at VUT is to evaluate the practical relevance of the external coaching and mentoring programme in negotiating the tensions inherent to building a RCoP.

Methodology

This study adopted a qualitative, exploratory, single descriptive case study approach (PlanoClark & Creswell 2010). Case studies focus on contemporary phenomena

within real-life contexts (Yin, 2009). For the purposes of this study, the phenomenon refers to building a RCoP.

Entrance to the setting was negotiated via the internal programme champion (BJ). The external coaches (JM and RV) started building a relationship with the organisation's internal programme champion during 2009, in order to create an awareness of the culture, values, challenges and strengths of the organisation. Both external coaches have doctoral degrees, are qualified advanced business and life coaches and have over 10 years' research experience. The programme was officially launched in June 2010.

The participants selected for this study were chosen because they formed the first cohort of students in the VUT Hub and Spokes Mentor Programme. Due to its emergent nature, the programme was populated over a period of six months. The programme commenced with eight participants in June 2010 and grew to 17 participants by November 2010. The participants were widely diverse in terms of age (between 23 and 35 years), race (13 Black and four White) and gender (nine female and eight male). Two were enrolled for doctoral degrees and 15 were enrolled for masters degrees. They were all at different stages of their degrees, varying from proposal stages and data collection to near completion.

- Data were collected by means of: five reflective reports written by the external coaches that served to document each session (number of participants attending, topic, overview of the session and coaching questions);
- 15 reflective responses written by the students in letter format (the coaches wrote a reflective letter to the students after each session to which the students responded individually);
- six group drawings (during one of the coaching sessions students were requested to draw and discuss a next-generation scholar);
- 41 qualitative evaluations of sessions, and one in-depth interview with the programme champion.

In addition, our field notes (De Vos, Stydom, Fouché & Delpont, 2011) served as written accounts of the events, conversations, observations and our thoughts. Data were analysed using the descriptive thematic analysis technique, as suggested by Tesch (Creswell, 2003).

Authenticity was ensured by means of the principle of fairness, awareness and action (Guba & Lincoln, in Denzin & Lincoln, 2005). This meant that the views, perspectives, claims, concerns and voices of students were heard and accepted.

Ethical measures were taken with reference to respect for persons, beneficence and justice (Belmont Report, 1979, in Amdur & Banker, 2011). Informed consent was obtained from all the students by means of a letter communicating the necessary information pertaining to the study. Participation was voluntary and the students could withdraw their participation at any time.

Findings and discussion

Data suggested that the programme promotes the establishment of an emergent RCoP by providing a formative social context to negotiate the tensions of engagement, accountability and a shared repertoire. The majority of the students moved from a peripheral position of uncertainty and doubt to one of mutual engagement. A few students' participation remained peripheral and, in some instances, it became more removed. The ways in which the students engaged with one another and with the world profoundly shaped their identity. Rites of passage of membership to this RCoP were negotiated and an initial shared repertoire of resources was developed.

The following themes are discussed, namely mutual engagement and identity dimensions, negotiating a joint enterprise and accountability, and building a shared repertoire. The mutual engagement and identity dimension is discussed in greater detail, as it contains both textual data and the data from student's drawings.

Mutual engagement and identity dimensions

Being a next-generation scholar meant being engaged in the enterprise of research practice, as well as in the generation of RCoPs. It also refers to the commitment of the students, as a next generation of scholars, to actions, the meaning of which they negotiated with one another (Wenger, 1998). The external group coaching and mentoring programme provided the time and place for monthly meetings, a range of continual research activities to promote research competence (for example, abstract writing, time and project management, coaching skills and tools), and opportunities for research participation (mock conference). Mutual engagement was facilitated by interactive discussions and storytelling, sharing and pondering the challenges and highlights in research journeys, reflective letter-writing and conversations, creative drawings and, to a limited extent, online participation (e-mails and Facebook).

Early engagement saw most students move from a position of uncertainty and doubt to a space where they experienced a sense of belonging to a community of research scholars. Engagement was enriched by the awareness that other participants shared similar values and challenges:

My highlight with regards [to] this session was that it enabled the mentees to be more acquainted with each other and with each other's struggles and successes. There was a stronger sense of belonging that was established (Mstudent 2).

It would appear that the students especially valued the social interaction and support gained from the programme; particularly when the interaction took place in an informal and relaxed setting:

...it is in informal settings where people can open up to each other (to either the group or a specific individual) and advices can flow much easier where one does not feel pressure of having their thoughts and feelings evaluated before they are accepted or validated.

I therefore believe that if some kind of programme can be put in place that enables students to meet in relaxed settings in order to just have conversations. It is from this environment that some deep rooted matters can be brought forward as trust gets established towards certain individuals and/or the group (Mstudent 5).

Goos and Bennison (2004) pointed out that the participants in their cohort found the face-to-face interaction crucial in creating familiarity and trust where students could have an outlet for discussion of ideas, problems and a release valve for stress. Islam (2012) noted that the setting created through the CoP (with reference to pre-service teachers) provided an opportunity to share experiences, devise strategies and reflect upon these strategies. Govender and Dhunpath (2011) also reported that the support from cohort peers within and outside CoP provided emotional and social safety nets.

Two students did not attend the initial meeting and seemed less engaged during the second meeting. They only attended the fifth session again. At that point, some marginalisation had occurred within the group, thus creating tension between group members. Their non-attendance was pointed out by fellow students during each feedback session and clearly seemed to be a cause for concern. A group member commented on this dynamic:

When some of us do not show interest in some activity, this hurts me; because I believe that ultimately we are family ... it won't work unless we all come ready to make some effort (Mstudent 1).

In his study, Moule (2006) similarly found that some participants failed to engage in a communal endeavour, with some students obviously preferring to work autonomously. This finding also supports Lave's (2004) argument that not everyone aspires to full participation. Wenger (2000) commented that a healthy social identity should be socially empowering, rather than marginalising. One member left the Hub and Spokes programme for another scholarship; another chose to accept a permanent industry position. This dynamic might be explained by what Wenger (1998) calls 'identity trajectories'. Peripheral identity trajectories might never lead to full participation (either by choice or necessity). Outbound identity trajectories led away from a community, and involved developing new relationships, or finding a different position with respect to a community.

We agree with Handley, Sturdy, Fincham and Clark (2006) that these tensions are likely to be continually mediated, but might never be fully resolved and that some students' participation may remain marginal or ambiguous.

As a result of such a dynamic, compulsory programme attendance became necessary. Membership is usually voluntary within situated learning. While compulsory attendance might motivate students to attend, they might simply attend for the sake of attending without actually participating.

With the additional eight students joining during the second session, we (JM and RV) anticipated a change in the group dynamics. These eight members, however,

integrated effortlessly, since the original members reached out and welcomed the newcomers as part of the family. Goos and Bennis (2004) explained that CoPs evolve over time and they may have developed mechanisms for maintenance and inclusion of new members.

Another indication of community maintenance emerged, as the students requested at various points in the programme to be allowed to do things together:

I wish that once in a while we could take a tour and visit or observe what one of the students is doing in a project, for example to see M's photo-bioreactor to understand what he is trying to do (Mstudent 7).

Evidence of transitioning research identities became eminent, as the students started to develop a next-generation scholar identity. An identity was not an abstract idea or a label, such as a title, an ethnic category, or a personality trait (Wenger, 2000). Identity was a lived experience of belonging (or not belonging). Identities were thus socially constructed. One student commented:

I try by all means to be a next generation scholar and to do research from the bottom of my heart (Dstudent 1).

A healthy identity would seek a wide range of experiences and would also be responsive to new possibilities. Students demonstrated their openness in the following quotations:

My perspective towards life and research has changed (Mstudent 3). Engaging with my fellow students is an advantage to me because it broadens my mind expanding into more realities of which research is all about (Mstudent 1).

One of the first activities of the programme was negotiating the concept, attributes and competencies of a next-generation scholar by means of drawings and discussions in smaller groups. Most groups illustrated, by way of drawings, that they viewed the next-generation scholar not as an isolated entity, but as part of a supportive community. From the drawings and discussions, a next-generation scholar was described as a whole person (head, hands and heart) who displays the following attributes:

A big, inquisitive mind to be used to the fullest extent; big eyes, to observe change around us, and large ears to listen to others and hear the problem. A large mouth would speak confidently about what [the next generation scholar] we see and think (Group A).

It would appear that the next-generation scholar's most important attribute is located in the heart where there is discipline, passion, courage, motivation and perseverance. The heart cares about other people and wants to make a remarkable difference. An important skill seems to be the ability to manage time to an optimal level. Finally, scholars should have large feet (figuratively speaking) to be able to stand their ground firmly, and to go the extra mile.

Negotiating a joint enterprise and accountability

Identity formation is a dual process of identification which provides the experiences and materials for building an identity and negotiability during which the students determine the degree to which they have control over the meanings of the research and research community enterprise. Negotiation of these enterprises creates relationships of mutual and personal accountability among participants (Wenger, 1998).

Although the greater joint enterprise of this community was the timely completion of postgraduate research studies, participants were adamant that rites of passage to membership be expressed by active involvement and participation in the Hub and Spokes programme. Other regimes of accountability (Wenger, 2000) whereby actions and requests are judged, were:

- showing respect by attending sessions;
- supportive behaviour such as providing advice and assistance (for example, statistical interpretation, proofreading literature reviews, information, feedback), and
- peer coaching and mentoring.

An interesting aspect that emerged from the reflective replies was that a particular provocative coaching question led to a moment of waking up, as a student realised the power of personal accountability:

The external coaches asked [me]: 'How do you stop yourself from being the researcher you want to be?' This question and the process of answering [the question], changed the way I think of, and look at myself in relation to the output I produce in my work as a researcher ... I, on that day, started a journey to take back my power and control my destiny. This led to my completed proposal by July (Mstudent 11).

An aspect that may have hampered the negotiation of a joint enterprise and accountability was the evolving group dynamics when some members did not attend the session, or if they did attend, they did not participate. A divide was noticed when White students fraternised with other White students, while Black students socialised more with other Black students. Islam (2012: 26) equally found this dynamic at play in the study of pre-service teachers, noting that "a lack of social capital hampers some...from gaining the most out of the CoP".

Building a shared repertoire

A shared repertoire refers to shared resources while negotiating meaning. Resources in this community include both internal (personal) and external resources. A student explained that self-knowledge and knowledge about their research project were critical resources:

It all starts with knowing yourself (Dstudent 2). I actually know more about my project than I thought I knew (Mstudent 6).

External resources refer to the expertise of peers (managing a bibliography, writing skills, presentation skills), increased competence while confidence is growing, learning (intra- and interpersonal awareness, and research practice), discussions (by way of storytelling and peer interactions), and tools (such as the Grow model). The involvement of supervisors as an external resource with knowledge and expertise increased a sense of belonging to a trusted RCoP:

Having the professors present and their inputs were valuable... it made me feel accepted by the 'Hub' as a 'Spoke' (Mstudent 4).

However, both the students and the external coaches raised concerns about the limited involvement of the internal mentors in the external programme and student activities.

Handley *et al.* (2006) suggest that individual learning should be viewed as emergent, involving opportunities to participate actively in the practices of the community, as well as the development of an identity which provides a sense of belonging and commitment. Participating in events such as a mock conference, writing abstracts for the conference, giving and receiving feedback on research presentations, completing research proposals and dissertations allow students the opportunity to assume a more central position in the practice of research within the scholarly community. Presenting at conferences allows for extending participation beyond the realm of that group, faculty and university.

Conclusion

The external group coaching and mentoring programme facilitated students' personal and professional growth by the acquisition of new skills, the generation of opportunities for intellectual discourse, risk-taking and challenges, as well as easing the integration within the formal and informal RCoP. Therefore, it provided them with both a supportive space, in which their learning could be accelerated, and a formative social context in which to negotiate the tensions of engagement, while improving accountability and building a shared repertoire inherent to a RCoP. The emergence of spontaneous peer mentoring activities was an additional benefit that might contribute to the students' personal satisfaction derived from assisting someone else with developing their potential. Successful programme implementation might further pave the way for extending the structured coaching and mentoring programme to postgraduate students in all research disciplines at VUT.

Although a sense of ambiguity initially prevailed, organisational stakeholders displayed tolerance of, and even support for the growing and emerging nature of the programme. For such a programme to reach its full potential, it needed to become part of the organisational and research culture to ensure sustainability. Lack of ownership and participation from related role players might, therefore, undermine the success of the programme.

A limitation of this study was the limited participation and feedback from other stakeholders, such as the supervisors. We suggest an investigation into supervisors' (as internal mentors) experience of the external coaching and mentoring programme. Another limitation was the lack of surveying the students' development as next-generation scholars within another CoP.

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