



Mentoring novice researchers in higher education: a “communities of practice” perspective

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Abstract

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This article reports on the mentoring of novice researchers, in particular of women and black academics, at a South African higher education institution. The model used for mentoring was informed by a “communities of practice” perspective which used situated and constructivist learning theories as a conceptual framework. One mentor and eleven protégés were involved. The protégés were divided into three groups of two, four and five participants each. Each group functioned as a community of practice (CoP) and embarked on a research project of its own choice. The purpose of the study was to evaluate the mentoring model, and therefore it explains the participants’ views of their learning and development from a CoP perspective. Data were collected by means of interviews and observation. The findings indicate how the development of the protégés from legitimate peripheral to more central participation was influenced by the university context, activities and relationships in each CoP, and participants’ individual dispositions. Recommendations to improve the model and for further study are made.

Opsomming

Die mentor van ontwikkelende navorsers in hoëronderwys: 'n “gemeenskap van praktisyens”-perspektief

Hierdie artikel doen verslag oor die mentorskap van ontwikkelende navorsers, wat veral vroue en swart akademici

insluit, by 'n Suid-Afrikaans hoëronderwysinstansie. Die mentor-model wat gebruik is, is deur 'n “gemeenskap van praktisyns” (GvP)-perspektief beïnvloed wat gesitueerde en konstruktiewistiese leerteorieë as konseptuele raamwerk gebruik het. Een mentor en elf protégé's is betrek. Laasgenoemde is verdeel in drie groepe van twee, vier, en vyf deelnemers elk. Elke groep het gefunksioneer as 'n GvP met 'n navorsingsprojek van hulle eie keuse. Die studie het ten doel om die mentormodel te evalueer. Dit verduidelik dus die deelnemers se sienings van hulle leer en ontwikkeling vanuit 'n GvP-perspektief. Data-in sameling is deur middel van onderhoude en observasie gedoen. Bevindings toon aan hoe hulle ontwikkeling van wettige, periferale deelname na meer sentrale deelname beïnvloed is deur die universiteitskonteks, aktiwiteite en verhoudings in die GvP en hulle eie gesindhede. Aanbevelings om die model te verbeter asook vir verdere navorsing word ook aangetoon.

1. Introduction

The research reported in this article was conducted at a higher educational institution during a time of transformation. In 2007 management tabled new research policies and plans to develop women, black and younger researchers to ensure that they would account for no less than 30% of the total crop of researchers at the institution by 2015. In line with this goal, one of the objectives was to facilitate the transfer of skills between proven and developing women researchers.

Management identified formal mentoring as one way to develop research skills in novices and, to this end, launched a number of initiatives. Considering that mentoring cannot be enforced since this causes negative attitudes, Simon (2003:81, 82) offers a Christian viewpoint. She states that mentoring is “not just [as] a means of achieving institutional goals but also [as] an expression of the Christian virtues, especially practical wisdom, love, hospitality, conviction, and humility. These virtues seek the flourishing of others ...” This wish to add value to others’ lives and help shape future generations, has also been noted by other authors (e.g. Steinmann, 2006:5). Erikson’s development theory may also explain their willingness to mentor. When mentoring, the mentor turns from the self towards others and thus moves towards the healthy resolution of the seventh stage of psychosocial development, generativity, which is in contrast to self-absorption and stagnation (Cunningham, 1999:447).

Regardless of the reasons for mentoring, Gazza (2004:47) stresses that “it is not enough to say that a mentoring program is in place.

Institutions must collect and review evidence regarding the effectiveness of programs." Therefore this article aims to report on the implementation and evaluation of a model to mentor research novices in the field of education. Annual research reports of this group reveal that most publications are by a few proven researchers only. The model which was designed and then implemented over sixteen months was informed by a "communities of practice" perspective which used situated and constructivist learning theories as a conceptual framework.

2. Conceptual framework

2.1 Situated learning theory

The situated learning theory is of particular importance for this study. The two basic principles of the situated learning theory are that learning is influenced by the context, culture and activity in which it occurs, and that social activity is a critical component of learning (Wenger, 2000).

Two concepts are important in Lave and Wenger's (1991) theory of situated learning, namely *community of practice* (CoP) and *legitimate peripheral participation*. By means of a CoP, knowledge is created, held and transferred. It is the context in which individuals develop the practices and identities appropriate to that community. Wenger (1998:73) identifies three elements that define a CoP: firstly, there is *mutual engagement* of participants in actions whose meanings they negotiate with one another; secondly, there is negotiation of a *joint enterprise*, which creates relations of mutual accountability among participants; and thirdly, there is development of a *shared repertoire*, including language, conventions and understandings.

Novices are legitimate peripheral participants in the practices of their communities. Practice is defined as "undertaking or engaging fully in a task, job or profession" (Brown & Duguid quoted in Handley *et al.*, 2006:644). New members are allowed to participate in the practices of the community in order to learn. As newcomers participate, their identities develop according to how they experience themselves and the feedback they receive from others (Wenger, 1998:149). Lave and Wenger (1991) thus view learning as a social process, where identity, membership and interpersonal relations are significant. As novices acquire the knowledge and skills of the practice, they move to more central participation and eventually assume the role of experts.

The limitations of the situated learning theory are identified by some authors (e.g. Handley *et al.*, 2006:647; Hodkinson & Hodkinson, 2003; 2008). For this study, relevant criticism include the fact that Wenger is not clear on several issues, including how spatially close practitioners need to be for effective learning to take place; identification versus disidentification if learners do not identify fully or are not really interested in the practices of a community they are expected to learn (also noted by Hodges, 1998); or the role of conflict in a learning community.

2.2 Constructivist learning theory

As a philosophy of learning, constructivist epistemology sheds some light on how learning occurs in a CoP even though numerous different pedagogies are all based on constructivist theory (Henze, 2009:87). Fox (2001:24) identifies six claims which together are held to define constructivist views of learning:

- Learning is an active process.
- Knowledge is constructed, rather than innate or passively absorbed.
- Knowledge is invented, not discovered.
- Knowledge is both personal and idiosyncratic, and socially constructed.
- Learning is essentially a process of making sense of the world.
- Effective learning requires meaningful, open ended, challenging problems for the learner to solve.

Numerous criticisms have been levelled against constructivism, in particular metaphysical and epistemological constructivism (Henze, 2009). For example, epistemological constructivists (the majority of social constructivists) reject the idea of an objective reality. The theory says that what we call knowledge is simply a construction of our experiences and therefore we cannot claim certainty or that others are wrong. Our main issue is to justify our beliefs. This view does not consider the use of inappropriate justification methods. The idea that it is acceptable to believe one's own constructed knowledge also leads to the fact that teachers may not teach students culturally-shared rules of evidence and logic; the term *knowledge* is reduced to include students' *opinions*; it rejects the idea of belief and concept evaluation in accordance with established criteria; it can lead to radical individualism or uncritical group thinking; and it

reduces teachers to joint travellers rather than knowledgeable guides (Henze, 2009:105). Henze (2009:103) also points out that the Christian who accepts the testimony of revelation will have problems with metaphysical and epistemological constructivism. The Christian faith is grounded upon the existence of an objective reality – a God who is (Exod. 3:6). There are objective truths that have been revealed and can be discerned by all open to receive them (John 8:32; Rom. 16:25-26).

Pedagogical constructivism is divorced from its metaphysical and epistemological baggage. The theory states that knowledge is derived from individual and social experience. Learning (not truth) is assisted by our experience and depends upon much that has been assimilated by others before us. Thus learning is an active process of communicating, discovering, organising, and conceptualising (Henze, 2009:99). For both Christian and secular educators the above implies that constructivism is used in a variety of contexts and may include a variety of philosophical presuppositions. Educators should differentiate between the need to teach hard facts or develop beliefs that are investigated for their potential to lead to knowledge. Pedagogical constructivism also enables teachers to mentor students and navigate their learning. This issue is addressed next.

3. Defining mentoring and the mentoring relationship

Mentoring is seen as “a dynamic, shared personal relationship in which a more experienced person acts as an adviser, guide and role model for a less experienced person (the protégé)” (Steinmann, 2006:3). Marsh *et al.* (2009) add teaching, counselling, challenging and providing organisational wisdom as additional mentoring functions. In line with the situated learning theory, mentors need to consider the context and culture of the institution in which the mentoring and learning take place. In addition, mentors need to carefully consider appropriate activities (the practices of the community) for protégés to participate in to facilitate learning.

In South Africa formal mentoring relationships generally last between eighteen months and three years and progress through four overlapping stages as follows (Johnson, 2007:97-103; Steinmann, 2006:14-17):

- **Phase one: intimate dependence** (initiation). This phase is characterised by the protégé’s dependency on the mentor. Lave and Wenger (1991) point out the importance of interpersonal relations for learning. Mentors need skills such as listening and

sensitivity towards race and gender, as well as have the time to be available to their protégés.

- **Phase two: familiarisation.** Mentors deliberately spend time with their protégés to become acquainted with them, to appreciate their unique abilities and to clarify expectations. Trust is important. Although mentors are role models for protégés, the latter should not become mirror images of their mentors.
- **Phase three: confidence building.** It is critical for protégés to believe they can pursue new challenges. In line with constructivist learning, mentors need to refer protégés to relevant information sources as needed. When individuals experiment creatively and successfully, their professional identities develop accordingly. To facilitate this, mentors share their knowledge and provide quality feedback.
- **Phase four: weaning** (separation and redefinition). During this phase the protégés exhibit independent behaviour, take the initiative and demonstrate accountability. Interaction becomes less and the relationship becomes more collegial.

During the above phases, various influences impact on the mentoring relationship.

4. Influences on the mentoring relationship

In the context of this study and considering that learning is both individually and socially constructed as indicated, the following were identified as most significant influences on the mentoring relationships:

- **Willingness to mentor.** As mentioned, mentoring cannot be enforced (Simon, 2003:81). The most effective mentorships involve mentors who genuinely believe in what they are doing (Johnson, 2007:27). However, mentors need to select their protégés carefully and not try to mentor too many.
- **Character and personality of mentors and protégés.** Pismisi and Loannides (2005:477) indicate that a mentor's personality influences learning relationships. According to Marsh *et al.* (2009) mentors need commitment, competence and the ability to communicate well. Protégés' attitudes and potential will influence the relationship. Protégés should take full responsibility for their own development but mentors should be responsible for the evaluation of the relationship (Steinmann, 2006:4). Mismatching

of mentor and protégé can be caused by differences in personality, communication style, expectations and interests (Wilson *et al.*, 2002:321-322).

- **Cultural differences of participants.** The influence of culture on social relations and thus on learning has been noted by various authors (e.g. Barker, 2007; Crutcher, 2007; Stanley, 2006). Thomas (quoted in Perna *et al.*, 1995:41) found that African Americans experience same-race relationships as more supportive than cross-race relationships. Mentoring obstacles across races include mentoring myths (such as that mentoring across races can simply be ignored), cloning (where mentors prefer to select someone from the same race to mentor), negative stereotypes (such as withholding support until the protégé has proved to be competent) and relationship risk (cross-race relationships often have more visibility) (Johnson, 2007:167-169; Kartje, 1996:119; Perna *et al.*, 1995:35; Quinlan, 1999:32; Wilson *et al.*, 2002:320). However, other authors reported effective cross-cultural mentoring relationships (Goodwin *et al.*, 1998:338; Henry *et al.*, 1994:40-42).
- **Gender differences.** Johnson (2007:152-162) noted that stereotypic views of females (as supportive but lacking power, resources, career orientation, aptitude in statistics or emotional control) and males (as dominating and non-emotive) may influence cross-sex mentor-protégé relationships. In academic settings both men and women gravitate towards same-sex mentors. More women than men report mentoring problems related to sex differences (Clark *et al.*, 2000:262). According to Johnson (2007:157), women often have difficulty in identifying fully with a male mentor. This finding contrasts with some studies. For example, one study found that protégés tended to prefer mixed gender relationships (Ugrin *et al.*, 2008:348). Working with mentors of the opposite gender allowed protégés to avoid unnecessary small talk or competitive relationships.
- **Individual versus group mentoring.** Advantages of mentoring in a group include efficiency (e.g. one mentor mentors a number of mentees) and a sense of community enhanced by cooperative learning. One-on-one mentoring, on the other hand, provides individual attention and flexibility, builds significant trust and addresses individual needs (Simon, 2003:78).
- **Mentoring in person versus via e-mail.** Mueller (2004:53) explains the advantages and challenges of electronic mentoring.

Advantages include independence from geography and time constraints for connecting mentoring participants.

- **Institutional culture** (Zellers *et al.*, 2008:552). Some institutions reward excellent mentoring (Johnson, 2007:233). Institutions may reward mentoring by means of reduced teaching commitments and the consideration of mentoring for promotion or financial incentives.

Factors that impact negatively on mentoring include insufficient time to develop the mentoring relationship, too little understanding of the process, unrealistic expectations, poorly thought out implementation, incompatible work schedules (Blunt & Conolly, 2006:206-207), poor mentor communication (Young & Cates, 2005:692), or autocratic, hierarchical mentor-mentee relationships (Van Louw & Waghid, 2008:207). Successful mentoring is influenced by visible executive buy-in and commitment, formalised and outcomes-based partnerships, mentoring that is career specific and individually needs-driven, and training of participants in mentoring best practices (Marsh *et al.*, 2009).

5. Research design

The research design consisted of a case study to evaluate a model for research mentoring that included one mentor and eleven protégés. The author's involvement as mentor was motivated by the following: When management communicated the expectation that experienced staff should mentor inexperienced colleagues with regard to research, I saw this as an opportunity to express my gratitude to an institution that has treated me extremely well over several years of employment. I also understood the issue that all prolific researchers at the institution were nearing retirement. Endorsing a Christian lifeview, I could identify with the notion of adding value to the lives of others and of using my passion for research in this way.

Considering the social component of learning as well as the situated learning theory, the eleven protégés referred to above were divided into three groups (small communities of practice). The groups were formed after an invitation for research mentoring of novices was extended via e-mail. The first eleven responses constituted the sample which consisted of seven white and one black female, and one white and three black males. In two instances, there were requests to participate by groups of two and four that had already been formed along teaching/research interests. The remaining five participants selected a problem of common interest after some

deliberation. The idea was that the novices would learn to do research by participation in the activities of the greater research CoP. In this way research theory and practice would not be separated as this can impact on novices' ability to achieve in theory as well as in practice.

Constructivist (in particular pedagogical constructivist) and situated learning theories were considered in the implementation of the model. For example, at the first meeting with each group, open-ended, challenging and relevant research problems to actively investigate were formulated. Relevant theoretical frameworks as well as individual roles and responsibilities were identified. Ethics were also clarified. The expectation was that participants would meet weekly in their groups and that I would meet with them on a monthly basis or more if necessary. I provided or referred participants to relevant resources, e.g. journal articles or requested them to participate in workshops when relevant. At their weekly meetings, participants reported on their progress to one another. The aim was to complete the projects within ten months in order to deliver papers at an upcoming conference. This would be followed by completing and submitting articles for publication.

During the sixteen months of the project, I noted my observations. Interviews were also conducted individually with the participants after they had delivered their papers and completed their draft articles. An interview guide was used to determine what worked well, what did not, and what influenced their learning and identity development as researchers. Interviews lasted 45 to 60 minutes, were audio recorded, transcribed and analysed by means of Tesch's method (Poggenpoel, 1998:343).

Trustworthiness was assured by the relatively long data collection period, by using multi-methods (observation and interviews), and by audio recording and transcribing the interviews verbatim. Ethical principles included my belief that I was competent to act as mentor, respected confidentiality and anonymity of participants, was honest about intentions and obtained participants' prior consent to be interviewed and audio recorded. To gain participants' trust, I did not add my name as co-author to their outputs.

6. Findings and discussion

6.1 Participants' development as researchers

Most of the participants reported a significant improvement in their research skills. In support of the constructivist learning theory, active involvement in research projects facilitated gains in knowledge and insight of the research process (e.g. the appropriate implementation of methods of data collection and analyses, and the role of a theoretical framework). This was aided by the fact that they had selected topics that were interesting, relevant and situated in the real world.

Learning was facilitated by the social activity in each group that functioned as a CoP and by mentor support. Working in groups meant that participants had to order their thoughts, defend their views to their peers and structure their reports on paper which were critically reflected on by others in the group.

During involvement in their research projects, participants' identities as researchers developed as they moved from peripheral to more central participation in the wider community of research practitioners. This was influenced by the level of participation. In one example, a participant was absent from most meetings and did not meet deadlines since she had other priorities. “I somehow fell off the bus,” she confessed and declared that she had hoped to learn more. Her non-participation caused delays and frustration. The subtle and negative feedback she experienced inhibited her identification with the group and as a researcher. This experience is in line with Hodges' (1998) notion of “dis-identification”. She was eventually excluded from finalising the article.

In a second group a participant admitted that his real interest lay in teaching rather than in research. He had a strong identity as a teacher stating: “I can present a *wonderful* lesson”. He was not motivated to conduct research and thus failed to learn *how* to belong (also noted by Hodkinson & Hodkinson, 2003; 2008). In terms of Wenger (1998), there was no transfer of identity from being a good teacher to being a capable researcher.

There was also a significant difference in the identity development of novice researchers versus two participants that viewed themselves as “relatively skilled researchers who just wanted a little bit of security”. These participants sometimes differed from the mentor and followed their own ideas. Thus, the mentor-protégé relationship was egalitarian and quickly developed into one that was largely

maintained electronically. The interviews indicate that the spatial distance between the mentor and these protégés worked well simply because they were more experienced and needed less support.

Development of identities as researchers was influenced by the number of participants in each group. If groups had four or five participants, individual responsibility was small with fewer opportunities for actively assuming responsibility for tasks. For instance, one participant indicated the need to embark on more research projects with different people to provide him with more opportunities to actively take on new roles.

Respect or disrespect for completed work by others in the CoP also predisposed identity development (Wenger, 1998). For example, one participant did not attend a session on interviewing in which I modelled the interview with an interviewee specially selected for this purpose. In her subsequent interviews she did not use the interview guide appropriately and asked leading questions with the result that her interview transcripts were not useful.

6.2 How participants' development was influenced by university context

According to the situated learning theory, learning occurs as a function of the context, culture and activity in which it occurs. This is confirmed by others (e.g. Zellers *et al.*, 2008). Each CoP chose a research problem that was related to their teaching duties in some way. This provided a rich and relevant context for the research projects, and was described as "hands-on" or action research. Participants could acquire skills and knowledge in realistic and complex contexts in line with constructivist theory.

To support their research, participants made use of the institution's infrastructure such as modern computers, the internet and services provided by library staff, editors, and departments responsible for the administration of postal questionnaires. These services supported active learning and allowed participants to cross boundaries to other communities of practice in the university setting as described by Wenger (2000).

The university context also provided a strong research culture as indicated by an emphasis on research output for promotion, an active promotion of research mentoring (which, according to one participant, provided her with 90% of her motivation for research), the continual presentation of research-related workshops (e.g. on

qualitative and quantitative data analysis or the writing of articles), the organisation of seminars and conferences on a regular basis for which funding was provided and the availability of academic leave granted by chairs of departments for research purposes. Academic leave allowed participants of two of the groups to meet at a member's house to tease out issues and complete activities. Such meetings were thoroughly enjoyed and proved fruitful.

However, during their research projects, participants often felt overwhelmed by their teaching duties. Courses were continually being phased out and replaced by others, adding to feelings of overload. This was aggravated by the fact that the institution was in continuous transformation that caused confusion and delays, for example with the dispatch of study material; this led to numerous student queries. Participants also described how the multitude of administrative tasks, due to an auditing and control culture, left them with little uninterrupted time for research.

6.3 How participants' development as researchers was influenced by activities and relationships within each CoP

Lave and Wenger (1991) view learning as a social process where identity, membership and interpersonal relations significantly influence learning. Implicit in Lave and Wenger's theory is a message that communities of practice work well only if conflict is smoothed over. This view was substantiated by the experience of a participant who could not continue in her development in one group as a result of difficulties that arose and which were not fully resolved. As mentioned, the participant did not commit to the activities of the group in the same way as the others. She related her story as follows:

Relations did not go very well. I think five participants are too many ... people tend to form little groups. I felt like a fifth wheel on the wagon ... especially since I could not attend all the meetings. I battled to know what was going on. When I tried to vent my frustration ... that I did not have time to do what was expected of me, some of them suggested that I withdraw. I did consider it but then decided 'no', I had already put in hours. But it affected relationships. I picked up vibes that I was the black sheep of the group ... that some did not want to associate with me.

During subsequent interviews, some participants pointed to the role of mentors to address such difficulties, since “a mentor has more authority and power”. It was also suggested that ground rules and a

code of conduct be established during first meetings between participants.

A second group could only continue with their project when the conflict that occurred was resolved. In this group, race played a role, confirming research by others (Barker, 2007; Crutcher, 2007; Stanley, 2006). This group had four participants (one black female, two black males and one white male). Initially, everybody was very enthusiastic and eager to learn from one another and from being mentored. However, as the group progressed conflict occurred. In one instance, two black participants argued an issue. In the resulting conflict situation, they were frustrated by the lack of involvement from the white male whom they believed was motivated by racial sensitivity. This nearly threatened the completion of the project and it could only continue once the situation was smoothed over, confirming Wenger's (1998) theory.

Gender and culture also influenced the activities in the communities of practice in other ways. In two of the groups (of single gender and culture), participants met at their own homes to complete sections of the projects. They experienced this as extremely enjoyable and enriching. However, in the group with mixed genders and cultures such activities did not take place.

An advantage of learning within communities of practice was the sense of responsibility towards others that most participants experienced. Another advantage was that the project benefited from different strengths. A participant explained:

We corrected one another nicely, because each of us had our strengths. Some of us went on research skills courses as a group and that helped us a lot when we wrote our paper. I am impatient and would urge them to get going. 'Ingrid' writes well ... we all had the opportunity to be leaders and followers.

The number of participants in a group also influenced learning. There seemed to be consensus that groups of between two and four worked best, although some preferred groups with two members only. If groups had many members, they built on various strengths. Projects could be completed quicker and with less input per person. However, disadvantages included that equal division of tasks was tricky, it was not easy to find suitable dates and times to meet, and there were fewer opportunities for individual learning because of greater task division. This inhibited learning and therefore also in-

hibited movement from legitimate peripheral to more central participation in the community of research practitioners.

Relationships and participation in the communities of practice differed for novices and for those who were more experienced (as pointed out by Hodkinson & Hodkinson, 2003; 2008). As can be expected, more face-to-face meetings were needed for newcomers. This presented the author with a problem since mentoring was not part of my work allocation and I was mentoring *three* groups. For more experienced researchers, fewer meetings and more communication via e-mail seemed to suffice.

One element that was identified as very important for the effective functioning of groups and for optimal learning was trust. This not only related to the mentor-protégé relationship but also to the relationship within each CoP. One participant stated:

There should be openness ... honesty ... trust. You should be able to trust someone and experience a sense of wanting to work together ... of wanting to learn from the other participant and that we will all benefit from this relationship.

6.4 How participants' development as researchers was influenced by their own individual disposition

The development of participants as researchers was necessarily influenced in various ways by their own individual disposition. For example, some academics prefer individual research to team research. In this regard, one participant confessed to not really being a “team player”. This influenced her commitment to the group and the project negatively.

Some individuals are more enthusiastic about research than others. One relatively experienced participant with a clear identity as researcher stated:

I enjoy research, I really enjoy research. I enjoy contributing towards new academic knowledge ... to increase my scientific knowledge. I enjoy the fact that I am nearly at a phase in my life that if I attend a conference I am seen as an authority ... but if you don't continue researching your field you will not be able to be an authority.

In contrast, another participant experienced himself more as a teacher than a researcher, as mentioned. His eventual role in the project was relatively small and he still experienced himself as a

novice at the completion of the project. He indicated a lack of self-efficacy by stating: "I don't have a passion for research. I struggle ... I find it difficult to start." However, referring to the presentation of their conference paper, he said: "It was my best day. The presentation was *wonderful*. I felt very proud."

Most of the participants experienced an improvement in their attitudes towards research as their knowledge and skills increased and their confidence grew through active involvement in their projects. "I understand better what research entails", one stated. Another confessed that she had been scared of research. Since she specialised in Mathematics education she found it difficult to express herself and thus struggled with report writing. She said:

I do not have the self-confidence to believe that I can go through the process on my own ... the planning ... the sorting out of concepts and deciding what is important. However, this project helped me to focus ... Working within predetermined time frames also helped and the fact that I did not want to disappoint my research partner or you [the mentor].

The level of dependence on mentoring differed. One participant wanted more active mentoring, especially when differences arose. She stated:

One participant gave us interview transcriptions that were too long and included many leading questions. It would have been better if you [the mentor] could have told her it was unacceptable rather than us. I think a mentor should play a more active role to share knowledge ... then we would not have needed to attend some courses. You have a recipe that works and we want it from you rather than shopping elsewhere.

Another expressed the wish for active mentor involvement when a member does not commit to time frames/meetings. However, others were satisfied with monthly mentor-protégé meetings. The issue of how to balance support with the development of self-efficacy remained a problem throughout.

6.5 What was needed for a healthy CoP

Grouping participants in communities of practice according to research interest is supported by constructivist learning principles. "We were all interested in the problem we investigated. We were passionate to find answers to our questions", one participant ob-

served. Within these groups participants had different strengths that contributed towards the completion of projects.

The importance of setting goals within time frames was pointed out by most participants. All groups worked towards completing their projects and delivering papers for a conference. In addition, they worked towards completing their papers for a special conference edition a few months later.

The fact that the research projects were completed in teams in accordance with socio-constructivist learning facilitated the process and provided support. This is illustrated by the following statement: “We have different energy levels. If one grows tired, the others step in. Everybody had the opportunity to dictate sentences that we captured on paper.” As mentor, I suggested roles and responsibilities according to the participants’ strengths and this was also experienced positively. In addition, novice researchers need to cross boundaries with other communities of practice as needed, such as library staff or administrative staff who provide support with postal questionnaires. My own accessibility as mentor was also noted.

Although Wenger (1998) does not stipulate close proximity between learning partners, the fact that participants were all in the same building made it easier to meet and supported the research process. Most participants in a CoP were from the same department and knew one another well. In two groups participants enjoyed the fact that they could use academic leave to meet at individuals’ homes and work uninterrupted. Such meetings facilitated bonding between group members.

However, according to participants, the following impacted negatively on the healthy functioning of the groups:

- Large groups (e.g. five participants)
- Unreliability of participants – e.g. participants who were not committed to deadlines and attending meetings, and who “kept chopping and changing dates”
- Teaching commitments that impacted on available time
- Unacceptable work standards – e.g. if the work that was delivered was not of an acceptable standard or included inappropriate or dated literature
- Differences in writing styles which affected the logical flow of thoughts in research reports

- Under- or overestimation of participants' abilities by the mentor
- Too little involvement from the mentor – e.g. in the case of participants who were less experienced or who queried a seemingly uncommitted member on her progress. One participant stated: "I don't like to be supervised. I am an adult ... I can do my own thing. This caused a lot of resistance on my side and I had to fight to regain my motivation." The involvement of the mentor could have eased these situations.

In view of the above, participants recommended the following for the healthy functioning of a CoP:

- Four or less participants in groups for practical reasons – "It's easier to arrange suitable meeting times"
- Written ground rules/rules of conduct established at a first meeting and signed by all; and the mentor should intervene if needed
- The selection of a research problem that is of interest to everybody
- Goals set within realistic time frames
- Clear roles and responsibilities for all group members
- Relationships of trust in a CoP
- Honest criticism and appraisal by all role players
- Mixed racial groups to enrich projects, "because one would get a new view on topics and by doing research together we will also know one another better"
- Participants with different levels of experience to ensure that less experienced participants are supported (recommended by a novice)
- Mentor adaptation to a group regarding how much involvement, support or supervision participants want and need
- Independent work by participants – e.g. one participant suggested that "the mentor should keep the process going but the content should come from the group ... you also gave us content ... you did some of the work for us when you wrote a draft abstract"

7. Conclusion

The aim of the investigation was to evaluate a model designed for the mentoring of research novices and implemented for sixteen months. This article reported the views of eleven protégés (divided into three groups) who were involved in the mentoring project. In contrast to most models described in the literature, the model included both peer and expert mentoring. This model was based on the situated learning theory, in particular Wenger’s theory of learning in communities of practice and (pedagogical) constructivist theory.

From the findings it can be concluded that the project was generally successful in reaching its objectives. This is indicated by the fact that all three groups completed their research, delivered papers at a conference and completed and submitted articles for publication (except for one group whose article was nearing completion at the time of writing). Most participants reported to have gained research knowledge and skills, and moved from peripheral to more central participation in the greater research community.

However, important considerations for future mentoring projects include in particular the fact that a mentor can only mentor *one* group of protégés effectively unless mentoring is factored into the work allocation of institutions, groups should be small, and ground rules should be established at the first meetings of participants.

The university context, activities in each CoP and the individuals themselves all affect the success of the model. The significant role played by individual dispositions is illustrated by the fact that learning and identification differed remarkably among participants in the same group. Protégés should take full responsibility for their own development although mentors need to evaluate the mentoring process.

Further research is needed on how mentoring can provide support and at the same time enhance the research self-efficacy of protégés. Such investigations can include innovative methods such as think-aloud protocols, diaries and more direct observation. How *mentors* experience mentoring also needs to be explored further to understand the best practices for mentoring within a particular context. Management cannot enforce mentoring but needs to provide a supportive environment for quality mentoring to flourish. These issues will be the focus of follow-up studies to gain a better understanding of how to develop women, black and younger researchers.

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Key concepts:

- communities of practice
- constructivist learning
- higher education
- mentoring
- research development
- situated learning

Kernbegrippe:

gemeenskap van praktisyns
gesitueerde leer
hoër onderwys
konstruktivistiese leer
mentor
navorsingsontwikkling