

Practices in postgraduate research supervision: from apprentice to scholar

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This article aims to identify lessons from current postgraduate research supervision practices at universities, relevant to improving the quality of such supervision. Research supervision practices in recent literature were scrutinised, current practices in selected universities were investigated and lessons that could be learnt from these practices were identified. The research focused on experiences of individual research supervisors within their specific contexts. The results of the research were analysed using Glassick's six areas of assessing scholarship, and the data were located on a continuum ranging from "freedom-and-friendship" to "apprenticeship" practice types. Single and sets of practices emerged from the data analysis, revealing certain patterns relevant to scholarship, cohesion of practices and contexts.

Nagraadse navorsingsbegeidingspraktyk: van vakleerling tot geleerde

Hierdie artikel het ten doel om lesse wat geleer kan word uit huidige nagraadse navorsingsbegeidingspraktyke by universiteite te identifiseer. Nagraadse navorsingsbegeidingspraktyke soos beskryf in die literatuur is bestudeer, huidige praktyke by geselekteerde universiteite is ondersoek en lesse is geïdentifiseer wat uit hierdie praktyke geleer kan word. Die navorsing het gefokus op die ervarings van individuele nagraadse navorsingsbegeleiers in hul onderskeie kontekste. Die resultate van die navorsing is geïnterpreteer met behulp van Glassick se ses areas van geleerdheidsassessering, en deur die plasing van die data op 'n virtuele kontinuum wat strek van 'vryheid-en-vriendskap' tot 'vakleerling' praktyktipes. Alleenstaande en stelle praktyke het uit die data-analise na vore getree en patrone is geïdentifiseer ten opsigte van geleerdheid, samehang en kontekste.

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Universities in South Africa are called upon to increase access to and throughput in postgraduate programmes, to improve research skills in the human resource pool and to increase research-based knowledge (Mouton 2007: 1090, NRF 2007: 8). The first issue could be associated with students who are not optimally prepared to progress adequately at universities and thus need some form of assistance or scaffolding to develop the necessary skills and competences to reach the required exit outcomes. Teaching students how to do research is likely to contribute to improving their ability to engage in research. This could, in turn, lead to addressing the second and third issues.

The traditional model of research supervision is that of one student to one supervisor and, in some cases, two supervisors (supervisor and co-supervisor). Although this model is very widely used, the amount of time required from both the supervisor(s) and the student, the level of academic interaction between the participants, as well as the intensity of the preparation, interaction and follow-up work render it extremely expensive.

In addition to the thesis/dissertation/research report, other factors involved in research supervision are, among others, attrition, quality of research, the nature of the problems addressed in research as well as research outputs. In the context of dwindling resources in the higher education sector and the pressure to produce increasingly more research graduates, it has become urgent to investigate the current research supervision practices in order to identify whether these could be adapted to increase access and throughput and to improve research skills and research-based knowledge.

This article argues that postgraduate research supervision needs to be reconceptualised from producing a researcher who is only capable of echoing what was learnt as a research “apprentice” to facilitating the development of an independent critical thinker who, as a researcher and scholar, can defend interpretive judgements. In support of this argument, recent studies on research supervision practices are outlined, followed by a report on exploratory empirical research conducted on current research supervision practices in selected higher education institutions in South Africa and at one European

university. Conclusions and recommendations based on the consulted literature and the empirical research are subsequently presented.

1. Literature review

Postgraduate research supervision is described as “the supervision or promotion of students’ research activities leading in whole or in part to the awarding of a Master’s or Doctoral degree”. The goals of such supervision are described as “both the production of a good thesis and the transformation of the student into a competent and independent researcher” (HEQC 2004: 166). Jansen *et al* (2004: 79) contend that an effective research supervision process should involve research learning, which includes the knowledge to complete a research project “as well as the emotional, social, political and cognitive experiences that together constitute such learning”.

An overview of recent literature on the role of the postgraduate research supervisor, and of the process, relationships, outcomes and purpose of postgraduate research is presented below. In an effort to make sense of the outcomes of these studies, they are presented as being situated on a continuum of practices, the one extreme being formal, prescriptive, rigid and structured (labelled as “apprenticeship” practices), while the other extreme is informal, needs-oriented, flexible and unstructured (labelled “freedom-and-friendship” practices).

As far as the supervisory relationship is concerned, Waghid (2006) identified some of the challenges he experienced in postgraduate research supervision. He refers to the supervisory challenge of bringing a doctoral student to the understanding of critical engagement with texts, promoting independent interpretive judgements, as compared to the student’s apparent need for structured guidance and conclusive feedback that would lead to satisfying the requirements of the examiner. This implies the supervisor’s role in facilitating the development of a certain level of scholarship in the student, thus counteracting the notion of a “seemingly ‘frivolous’ approach to learning” (Waghid 2006: 430). He argues that the relationship between the student and the supervisor ought to be constructed as one of freedom and friendship, and not as one of customer and supplier, as this is more

likely to promote authentic learning (Waghid 2006: 432, 437). He also argues that authorship of theses and dissertations “happens in dialogical spaces or relationships with others” and bases this argument on Maxine Greene’s “dialectic of freedom” and Jacques Derrida’s “politics of friendship”, thus promoting authentic learning (Waghid 2006: 433). This argument supports supervision practices that are situated towards the flexible extreme of the continuum. For the purpose of this article, Waghid’s notion of “freedom-and friendship” is borrowed as a label for this type of supervision practices.

Recent developments in Europe concerning the rethinking of doctoral studies could be interpreted as contradicting Waghid’s abovementioned opinions. Roebken (2007: 1055) indicates that dissatisfaction with the traditional apprenticeship model of postgraduate research studies in Europe, with the supervisor in a “super” role, has given rise to proposed reforms in doctoral studies. One of the areas in which the European policymakers wish for change is research supervision (Kehm 2005: 12-4). They seem to believe that a more structured approach to doctoral studies, more and better trained supervisors, international cooperation and more interaction between supervisors and students would improve overall quality in doctoral studies (Kehm 2005: 21-2).

Waghid’s (2006) supervisory model of freedom and friendship is situated towards one end of the continuum, while the call from Roebken (2007) and Kehm (2005) for a more structured approach to doctoral studies is at the other end of the continuum. Another viewpoint on research supervision is that of Lee (2007: 684-90), who consolidated the work done by numerous other authors. He subsequently presents six conceptual models of research supervision, namely functional, qualities, mentoring, enculturation, critical thinking and feminist, each having a different focus. His functional model focuses on the tasks in which supervisors must develop competency, drawing on the work of several other authors.¹ The qualities model has as its pivotal point supervisor effectiveness, based

1 Cf Eley & Jennings 2005, Taylor & Beasley 2005, Wisker 2005, Robinson *et al* 2003.

on work done by several other authors (cf Taylor & Beasley 2005, Zuber-Skerritt & Roche 2004, Robinson *et al* 2003). The mentoring model refers to work done in postgraduate research supervision by Pearson & Kayrooz (2004), and Brew (2001). Lee's enculturalisation model highlights the initiation of the research student into the academic community of practice, drawing on several authors.² Lee's critical thinking model is based mainly on general work done in critical thinking and connected to postgraduate research supervision through references to the work of other authors (cf Wisker 2005, Pearson & Brew 2002, Brew 2001). Lee's feminist model foregrounds the needs of female research students, based on work done by other authors (cf Wisker 2005, Leonard 2001). Lee's models highlight various dimensions of the postgraduate research supervision activity, the knowledge and skills needed by the supervisor, and the possible student reaction in each case. He concludes that supervisors must be enabled to uncover the conceptions they hold about research supervision and that these insights should be used to devise appropriate continuing professional development programmes for supervisors.

Lee's functional and qualities models seem to support the more structured approach to research supervision, as supported by Roebken (2007) and Kehm (2005), and focus mainly on the role of the supervisor. The mentoring, enculturalisation, critical thinking and feminist models seem to lean more towards "friendship-and-freedom" in the supervisory relationship, and focus mainly on the student.

Herman's (2008) study highlights the role of emotions in postgraduate research. She advocates that research supervisors need to be aware of the perception that "doctoral studies tend to emphasise the rational and technical competencies of producing research and neglect the emotional aspects of learning" (Herman 2008: 101). Her study focuses on the emotions generated during the various phases of the doctoral research journey and the challenge these emotions present to students. Herman (2008: 112) points out self-awareness, managing their emotions and the potential role of the research

2 Cf Kamler & Thomson 2006, Taylor & Beasley 2005, Wisker 2005, Pearson & Brew 2002, Brew 2001 and Leonard 2001.

supervisor as co-manager of these emotions. As emotional aspects of learning are not structured and are highly individual and subjective, a model that focuses on emotions leans towards the “freedom-and-friendship” side of the continuum. It is also interesting to note that, as emotional skills have not generally appeared in work on research supervision, they can thus be regarded as an emerging research supervision skill.

The notion of reflective practice in postgraduate research supervision is used widely to improve practice, for example as a research methodology in action research (McNiff 2000 & 2005; Whitehead 2006) and in improving teaching practice (Ostorga 2006, Bintz & Dillard 2007). Wisker (2005: 42) states that “reflecting on previous experience of supervision is a good way to start defining good practice”. Ahern & Hawthorne (2008: 1) also propose that this strategy could be useful in improving postgraduate research supervision. Due to the fact that reflective practice is not structured and is guided by its context and the nature of interaction, it would appear on the continuum together with the “freedom-and-friendship” model.

One of the noteworthy outcomes of another investigation into research learning is that the latter is “even more complex than we had anticipated, and that making firm statements about ‘the right way’ to prepare doctoral students might in fact be the first error in seeking to improve the learning and support of novice researchers” (Jansen *et al* 2004: 102). This complexity and the implications of individual needs when preparing the doctoral student place this statement on the “freedom-and-friendship” side of the continuum.

To add to the insights from the literature as described above, an exploratory, qualitative empirical study was undertaken

2. Methodology

According to Henning *et al* (2004: 5) the qualitative research paradigm is appropriate when a phenomenon is investigated to better understand “the *qualities*, the *characteristics* or the *properties*” of such a phenomenon. The qualitative research paradigm was chosen due to the fact that this exploratory study focused on the experiences of

individual research supervisors within their specific contexts and the fact that these contexts were shaped by the supervisors, their students, their institutions, the nature of the research projects involved, and a myriad of other subjectivities.

The situational context of the research was South African universities with research Masters and Doctoral students. The sample included five South African universities who had gone through a merger or incorporation exercise a number of years ago; two were universities of technology and three were ordinary universities (in other words, neither comprehensive universities nor universities of technology). This range of university types was expected to uncover a wide range of supervisory practices. An opportunity arose for the researcher to visit an ordinary European university and as this was an exploratory study, it was decided to include it in the sample as a potential means of enriching the data gathered from the South African universities.

In qualitative research, the participatory role of the researcher implies some form of interaction between the researcher and the respondent during the gathering of data. In this research, this type of participatory interaction was manifested in the researcher conducting the interviews, the only data collection instrument. Although research on postgraduate research supervision has already uncovered a body of knowledge about this process, the focus of this study, namely the nature of individual supervision practices, still needs much in-depth study. The exploratory nature of the study, as well as the requirement of qualitative research that guided questions may not be included, convinced the researcher that it is appropriate to make a single request to the interviewees, namely "Tell me how you conduct your postgraduate research supervision." This single question facilitated the open-endedness of the data collection and prevented interviewees from perceiving limitations on what they were required to contribute. This way of conducting interviews for data collection is widely supported in qualitative research (cf Leedy & Ormrod 2005: 146, Creswell 2009: 181, Gibson & Brown 2009: 87). Probing questions were also included as the interviews progressed.

A purposive, convenience sample was used. This sampling strategy facilitates the inclusion of multiple sources of information, and thus the participants in this study had the potential to be information-rich individuals. Snow-ball sampling has also been applied in that a participant would identify an additional individual who is known to be information-rich in the context of the research focus.

It is well known that the structure and nature of research supervision may vary according to the nature of both the discipline and the research topic. In the natural sciences it is more likely to find a group of (often) full-time master and doctoral students collaborating on different aspects of the same, sometimes funded project, under an umbrella theme, with one or more academic(s) as the main research supervisor(s). The doctoral students could be the supervisors of the master students in that group. Regular group discussions which supplement individual research supervision are likely to be a feature of such research supervision. On the other hand, research supervision in the creative arts would far more likely be less structured and more individualised. As the researcher wished to gain as wide a range of inputs as possible (maximum variation, as is expected from qualitative research), a wide range of faculties were included in the sample, namely Humanities, Information and Communication Technology, Science, Management Sciences, Arts, Engineering and the Built Environment as well as Education.

A total of 18 interviews were conducted. All the interviewees were senior academics with experience in postgraduate research supervision. As described earlier, the qualitative sampling principles of maximum variation and involving information-rich participants was served in this way, thus allowing for a sample that would include a “wide range of variations and patterns across the sample” (Gray 2009: 181).

The ethical aspects of the research project have been considered and cleared by the institution at which the researcher is employed. The approval number for this research is H08-EDU-SMT-022 and it is recorded accordingly in the University records. This institutional process consists of a standing faculty committee scrutinising all aspects of the research design, including the sample, data collection

instrument and procedure. In potentially sensitive cases (this study did not fall into this category), in which children are involved or personal information is divulged, the faculty committee would refer the matter to a standing university ethics committee. Members of all these committees are trained in the principles of research ethics.

3. Data analysis

Some authors are of the opinion that the popular method of qualitative content analysis “may lead to superficial and naively realistic findings because it captures what is presumed to be the ‘real world’ (through the eyes of the research participants) in a straightforward, direct and often formulaic way” (Henning *et al* 2004: 102). It is stated that the procedures of coding and categorising, which are typical of this method, are initial procedures and that further interrogation of the data is required in order to interpret the data, referred to as global analysis. This opinion is not necessarily shared by De Vos *et al* (2004: 344), as their description of data analysis does not distinguish between qualitative content analysis and global analysis. They refer to a “spiral of data analysis” in which context, categories (themes or dimensions) and comparisons are the key “tools” of data analysis.

The challenge in this data analysis was, therefore, to avoid a superficial outcome, as could result from qualitative content analysis. The latter was used by identifying small isolated units of meaning and subsequently augmented by identifying network themes by means of global analysis in an effort to interrogate the data at a deeper level. This method of analysis suggests “an integrated view of the data and the way in which main themes are identified because of a holistic reading” (Henning *et al* 2004: 108).

The outcomes of the data analysis were subsequently grouped into the chronological, functional stages that the postgraduate research supervisor and student is expected to experience and the concomitant decisions that must be made with regard to the study:

- Student recruitment and selection, admission requirements and registration.

- Part-time or full-time, funding and geographical distance from campus.
- Current level of research skills.
- Theme/topic (choice, intellectual significance).
- Research proposal (“letter of intent”).
- Group supervision, team supervision, workshop supervision, co-supervision and/or panel supervision, possible advisor additional to supervisor.
- Supervisor training, workload of supervisor, allocation of supervisor.
- Contract between supervisor and student, supervision process, frequency of contact sessions, time schedule.
- Research groups, discussion groups, presentations, seminars, colloquia.
- Exit due to inadequate progress, throughput rate.
- Language issues.

4. Data interpretation

Boyer (1990) contended that scholarship exists in all areas of academic work and that the traditional research-versus-teaching way of thinking about academia is inappropriate. He identified four distinguishable, but not isolated, forms of scholarship, namely the scholarship of discovery, integration, application and teaching. Glassick *et al* (1997: 36) subsequently developed six ways for assessing scholarship, which are viewed as common to Boyer’s four forms of scholarship:

- Clear goals
Goals are stated clearly; realistic and achievable objectives are defined; important questions in the field are identified.
- Adequate preparation
Understanding of existing scholarship in the field is displayed; the necessary skills are adequately developed; the necessary resources are combined.

- Appropriate methods
Methods appropriate to the goals are used; they are applied effectively; they are adapted if changing circumstances demand this.
- Significant results
The set goals are achieved; the outcomes contribute significantly to the field; further areas of research are identified in the process.
- Effective presentation
A suitable style and effective organisation are evident in the presentation; work is communicated at appropriate forums; the message is delivered with clarity and integrity.
- Reflective critique
Own work is critically assessed; an appropriate depth of evidence appears in the work; the critical self-reflection is used to improve future work.

For the purpose of triangulation the data were interpreted by applying three tools. The first two tools are associated with scholarship, these being first, the six areas of assessing scholarship identified by Glassick *et al* (1997) and, secondly, the HEQC *Improving teaching and learning resource no 7*. The third tool contextualised the findings in the literature as described in the relevant section above, namely the continuum ranging from freedom-and-friendship supervisory practices to structured and examiner-satisfying practices.

In the first phase of data interpretation the six areas of assessing scholarship (Glassick *et al* 1997: 36) were applied to the range of supervision practices that emerged in the data collection and to the range of categories listed previously (including the deeper global analysis of each category). This application revealed that, although all the dimensions did not appear simultaneously in the supervision practices of any individual supervisor who was interviewed, all the dimensions of all the ways of scholarship assessment were well-represented in the data set as a whole.

In the second phase of data interpretation all the relevant evaluative questions were selected from the HEQC *Improving teaching and*

learning resource no 7: Postgraduate research and supervision (2004) and applied to the data (the relevance of the questions was determined by the information that emerged from the interviews). The selected questions were numbers 4 (students' rights and responsibilities regarding their research supervision), 5 (research-conducive infrastructure and environment), 6 (induction to research and research skills training), 7 (funding), 8 (selection, appointment and training of supervisors) and 10 (completion rates – used only partially). The outcome of this application was similar to that of the previous application of the six assessment ways of Glassick *et al* (1997). Once again, although all the good practice descriptors associated with the selected evaluative questions did not appear simultaneously in the supervision practices of any one individual supervisor who was interviewed, all those descriptors were well-represented in the data set as a whole.

The final data interpretation tool involved the location of the data on the continuum ranging from “freedom-and-friendship” to “apprenticeship”.

5. Findings

It became evident from the data that institutional and faculty regulations and conventions as well as the nature of a specific discipline co-determine whether some of the dimensions of postgraduate research supervision practices at universities could be perceived as tending towards the “freedom-and-friendship” model or towards the “apprenticeship” model. Examples of these include the preliminary aspects such as recruitment and selection, admission requirements, registration and funding. The availability of funding was found to be one of the strongest motivators to channel students into the direction of certain research themes and to work with specific supervisors. In some cases this channelling resonated with the developmental needs of students, thus becoming a positive force, while in other cases it restricted students in their taking ownership of their personal research development.

The way in which students are allocated to supervisors, whether and how research skills of students are upgraded, identifying research

topics and developing research proposals, are aspects that have a significant impact on whether supervision practices could be described as “freedom-and-friendship” type or “apprenticeship” type. An example of the complexity of the issue is that if a student fits in with an existing umbrella research theme that is the specialisation of the supervisor, with other students also working under this umbrella theme, this network of students is likely to provide financial support through outside funding, research skill support, peer support and team supervision. Thus the restriction on the freedom of choice of a research topic (an “apprenticeship” type practice) could be a small price for the student to pay in exchange for the many other “freedom-and-friendship” type benefits attached to this.

The data also showed clearly that the abovementioned type of research network is not a prerequisite for such benefits as these are also evident in some of the one-to-one supervision relationships. In these cases the personality of the supervisor (for instance, a structured personality type as compared to a more flexible personality type) as well as the institutional, faculty and discipline parameters played a significant role in whether the practices were of the “freedom-and-friendship” type or of the “apprenticeship” type.

The research also uncovered extreme cases of “apprenticeship” practices. These were characterised by structured recruitment, group supervision (large groups of students working with two or three supervisors in a group), structured and regular contact sessions, specified research topics, pre-selected research methodologies and strict timelines. These resulted in commendable throughput rates but, at the end of the process, many students were unable to work independently and did not develop adequately as critical thinkers, researchers or scholars.

6. Conclusion and recommendations

This research could possibly be perceived as limited due to the fact that its data collection was not structured in more detail. However, this open-endedness can be fully justified; the focus of the study was on an area in which little research has been done thus far. This

open-endedness is also a requirement of exploratory qualitative research. Although detailed structuring of the interviews would have provided more focus, the richness and range of data would have been much poorer. Such detailed structuring would also not have been likely to uncover greater depth in the data, as this was achieved by means of the probing questions and the extent of research supervision experience of the participants.

Another possible limitation could be that more institutions should have been included in the sample; however, representivity is not a characteristic of qualitative research but it rather aims to uncover richness of data. In addition, despite the wide range of faculties included and the fact that the interviews reflected that the sample was saturated, it can be reasonably deduced that by including more institutions, a wider range of supervision practices would not necessarily have been revealed.

The following conclusions were drawn from the research:

- The application of Glassick's scholarship assessment areas and the HEQC good practice descriptors revealed that scholarship exists comprehensively in the process of postgraduate research supervision in the contexts where it was investigated. Although these two interpretation tools could not assess scholarship in each case that was interviewed, it indicated that the full range of scholarship areas and good supervision practices were present in the sample as a whole. All these practices are thus used by the group of supervisors that was interviewed, but only selectively by most of the individual supervisors.
- Supervision practices of an individual supervisor or in a group supervision context cannot be interpreted in isolation from each other. The experiences and opinions of the participants presented themselves in an enmeshed fashion. The interviews indicated that a practice would be applied in relation to another practice. For example, if one practice does not resonate well with a particular student, a supplementary or substitute practice would be applied. What might work well in a one-to-one situation might prove to be only partially effective or completely ineffective in

a group supervision context. Thus best practices were found to occur in conjunction with each other. It was also found that a specific practice in isolation might not enhance the supervision practice, but in association with one or more other (best) practices, formed a strong force in the improvement of supervision quality. The converse also occurred: a single poor practice occurring in conjunction with best practices did not undermine the positive strength of the set of practices.

- Supervision practices cannot be interpreted in isolation from their contexts. Scholarship and best practices were found to be very contextualised. They are not necessarily transferable from one context to the other and there are conditions for such transferability.

It is recommended that postgraduate research supervision practices facilitate students to develop as independent critical thinkers who can defend interpretive judgements as researchers and scholars, rather than only being capable of echoing what was learnt as research “apprentices”. This research indicates that the presence of a critical mass of best supervision practices, in relation to individual, disciplinary, faculty and institutional contexts, will serve this purpose.

Further research could determine:

- whether a critical mass of best practices exists that is essential for quality of supervision and, if so, what this critical mass is;
- how individual supervisors could be empowered to make use of an optimal range of elements of best practice, and
- how institutions and faculties could be assisted to provide a context that would optimise the quality of research supervision practices.

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