RESEARCH-READINESS IN POSTGRADUATE STUDENTS: HOW DO WE RECOGNISE IT AND OVERCOME POSSIBLE DEFICIENCIES?

C. MAASDORP[1] & S.M. HOLTZHAUSEN[2]
[1]Central University of Technology, Free State & [2]University of the Free State

Abstract

Due to ever-increasing strains, quality improvement of research degree programmes is imperative for the South African postgraduate landscape. This research explored the recognition and overcoming of research-readiness deficiencies in university of technology postgraduate students within the ambit of South African higher education transformation. This formative-evaluative case study generated data through a questionnaire survey, focus groups and interviews. The results identified motivation and commitment, managerial and academic-writing research-readiness deficiencies. These results also suggested that recognising and overcoming these research-readiness deficiencies could lead to conceptualised, critical and creative work in university of technology postgraduate studies.

Keywords: research-readiness; postgraduate students; research capability, involvement and support

1.   INTRODUCTION

Quality improvement of research degree programmes is high on the agenda for most, if not all, higher education institutions. As a result, the ever-increasing pressures facing the South African postgraduate landscape require efficient and effective research involvement of higher education institutions in terms of sustaining high-level research-readiness. These are complex issues, particularly in the presence of concerns such as the quality of postgraduate training, poor success rates, and the lengthy completion time or termination of postgraduate studies (Pearson & Brew 2002; Van der Westhuizen & De Wet 2003; Le Grange & Newmark 2003; Boud & Lee 2005; Albertyn et al. 2008: 749-772; Conway 2011; RSA DHET 2014).

Much research into sustaining the research-ready capabilities of postgraduate students focuses on generic issues of research development, but "little attention has, historically, been given to helping them in overcoming these deficiencies" (Lubbe et al. 2005: 242; Ivanitskaya et al. 2008; Conway 2011). Meerah (2010: 188) states that there is a need to address the research "readiness skills" of postgraduate students, especially the "incompetency of acquiring knowledge and writing literature reviews" in specialisation areas. Literature confirms (Lubbe et al. 2005: 242; Ivanitskaya et al. 2008; Meerah 2010: 188; Conway 2011) additional research-readiness impediments to the success of postgraduate studies namely disadvantaged background; lack of

academic writing and time management skills; time constraints and the monotony of focusing on a particular problem for an extended period of time. However, identification and suggestions for improvement could assist in the development of independent research-ready prospective postgraduate students within a "disciplining framework" and set time timeframes (Clegg & Gall 2006: 327; Pival et al. 2008; McCallin & Nayar 2012; Stephens et al. 2012).

Within the rapidly transforming South African higher education context, institutions are confronted with several additional challenges, such as the merging of institutions, an increasing proportion of the postgraduate student body coming from previously disadvantaged backgrounds, first-generation students and the transformation of the academic staff corps (RSA DoE 1997; Hay 2000: 56; RSA DoE 2001; CHE 2004; Makoni 2010; MacGregor 2014). Furthermore, students have limited experience of independent research work and the use of a library and other research facilities (Lessing & Lessing 2004: 73; Mapesela & Wilkinson 2005: 1239; Clegg & Gall 2006). This is also the case in other countries – for example, Stephens et al. (2012) confirm that a lack of independence undermines the academic performance of first-generation American postgraduate students.

Maintaining quality postgraduate research has become a complex challenge to higher education. Therefore, departmental support and access to quality infrastructure are needed for multi-skilling a graduate population (Boud & Lee 2005: 503). This article focuses on the identification of and action on deficiencies to assist postgraduate students in working towards scholarly research-ready skills. In addressing some of these deficiencies, the article commences with an explanation of the rationale for and complexity of research and academic skills for postgraduate research-readiness within a transforming South African higher education context. The findings of the empirical investigation, as well as the resulting implications and suggestions are presented to emphasise the importance of recognising and overcoming a lack of research-readiness in university of technology postgraduate students.

2.   RECOGNISING AND OVERCOMING RESEARCH-READINESS DEFICIENCIES IN POSTGRADUATE STUDENTS

Increasing demands for quality and accountability, in the light of poor success rates, as well as the importance of and pressures for increased and quality research outputs in higher education, have become important aspects of postgraduate studies (Meulenberg-Buskens 1997: 111; RSA DoE 1997; RSA DoE 2001; Steyn 2001: 30; Pearson & Brew 2002; Le Grange & Newmark 2003; Van der Westhuizen & De Wet 2003; Felton 2007; Albertyn et al. 2008; Wisker 2010; Conway 2011; RSA DHET 2014). However, the benefits of increasing the quantity of postgraduate studies have not always been matched by a commensurate improvement in the provision of facilities and the development of quality-assurance mechanisms (Hay 2000: 55; Ivanitskaya et

al. 2008; Conway 2011). Therefore, this renewed call to strengthen the research capability through increased postgraduate numbers (RSA DoP 2011; RSA DHET 2014) represents an opportunity and stresses the necessity for higher education institutions to recognise and nurture the diversity of research-readiness. Recognising these diverse skills involved in postgraduate studies, requires on-going support and training in order for postgraduate students to maintain quality (James & Baldwin 1999; Ngcongo 2001; Enders 2004; Grant 2005; Felton 2007), for example, by providing facilities, resources, and support and training constantly to enable postgraduate students to proceed in a productive manner. In the transforming South African higher education context, these required diverse research-readiness postgraduate skills are even more imperative (James & Baldwin 1999: 3; Ngcongo 2001: 53; Enders 2004: 439; Grant 2005: 13; Roberts 2010; Maree 2012). The reasons for this are underpinned by the concern for poor success rates, students' slow progress and setting too high or unrealistic standards (James & Baldwin 1999: 3; Kelly & Ling 2001: 74, 77; Mouton 2001: 17; Neumann 2003: 36; Roberts 2010: 194; Maree 2012).

In light of the above, it is evident that the responsibility for quality in research outputs lies on different levels and requires two-way commitment between supervisor and postgraduate student.

The following three research-readiness deficiencies should not only be recognised, but also require immediate action as these are early warning signs:

2.1   Motivation and commitment research-readiness deficiencies

From literature perspectives these terms mean that postgraduate research-readiness consists of a personal dimension (e.g. with regard to crises of conscience or personal problems). However, the reaction on this personal dimension influences the inter-relationship with the supervisor, because postgraduate students are individuals (e.g. with different preferences, responsibilities, expectations of the supervisory relationship as well as their approach to their studies, cultural and academic background), who need to balance these multiplicity of roles. This results in increased stress levels amongst postgraduate students (Décamps et al. 2012; Haynes et al. 2012), which may influence not only their progress and motivation, but also their commitment to their studies, especially when students become part of research-funded projects and have little input with regard to the topic of their research. This is an essential aspect that supervisors also need to take into account with the new trends to replace the master-apprentice style/solo supervision with cohort supervision (Van Biljon & De Villiers 2013; Harrison & Grant 2015). For example, the main supervisor should remain the "sounding board" for confidence and independence building, but recognise and facilitate collaborative interaction with co-supervisors for their specialist knowledge and skills.

The rationale for undertaking postgraduate research varies from one student to another, with some being motivated extrinsically by the institution, and others having intrinsic, personal reasons for pursuing postgraduate studies. Several examples of such reasons can be found in the literature (Khafagi 1990: 67; McMillan & Schumacher 2001: 5-6; Berg 2004: 210; McCormack 2004: 330-331; Phillips & Pugh 2005: 22, 25-26; University of Canterbury 2006; Roberts 2010) as shown in table 1.

Table 1: Extrinsic and intrinsic motivation for enrolling in postgraduate studies

Extrinsic motivation	Intrinsic motivation
Recognised professional researcher/expert	Make a significant contribution to the chosen field
Peers liberalise and broaden own perspective	Lifelong learning liberalises and broadens own perspective
Extraordinary accomplishment - obtaining postgraduate degree(s) at university	Adventure in personal growth and transformation experience
Becoming an improved practitioner	An emotional decision to spend one's time in a more fulfilling or pleasurable way
Financial compensation as well as opportunities for international research trips and internships when assisting supervisors with research projects and course instruction	Regular contact with an international network system or additional research opportunities when assisting supervisors with research projects and course instruction

Most of the above-mentioned motivations require craft skills involved in becoming a full research professional. These research-readiness skills have to be learned by performing a task in practical situations under appropriate supervision. Actions that higher education institutions could consider to apply as quality assurance mechanisms for future postgraduate students include the following, namely opportunities for international research trips and internships when assisting supervisors with research projects and course instruction, regular contact with an international network system, or additional research opportunities when assisting supervisors with research projects and course instruction.

However, these diverse motivational factors do not necessarily remain the same throughout the period of registration for postgraduate studies. Therefore, it is important that postgraduate students eventually realise that their research-readiness is also determined by their attitude, determination and application. These actions should be "self-propelled movements", prompted by the supervisor as the resource in this difficult research journey to keep the postgraduate student on target towards a specific destination with ambition, enthusiasm, and aspiration.

2.2 Managerial research-readiness deficiencies

When time is allocated for the completion of postgraduate studies, or set time periods are given for the completion of individual tasks, deadlines are not only crucial for progress, but also act as positive stress activators (e.g. to stimulate students to complete the set complex tasks in time within a disciplining framework). However, supervisors often find it difficult to see to it that their students work within a structured timetable. Some of the reasons for this are highlighted in the literature (Graham & Grant 1997: 30-32; Clegg & Gall 2006; Manathunga 2005; Moses 1985: 13; Neumann 2003: 4; Phillips & Pugh 2005: 88), namely postgraduate students may experience

- a sense of uncertainty regarding the next step to take;
- a sense of frustration if they constantly refine work, especially when striving for perfectionism; and
- a sense of inadequacy of data collection, due to poor time management skills.

Thus, deadlines are as important for monitoring the development of thinking as they are for ascertaining that an agreed amount of reading or practical work has been completed. Whatever the short-term goals are, regular opportunities to discuss progress and exchange ideas are vital actions to the development of research projects and postgraduate students' continuing enthusiasm and stress management. Therefore supervisors also need to enhance postgraduate student engagement by strengthening and reinforcing positive coping strategies to make postgraduate students mentally tough, while discussing and discouraging the negative coping behaviours (e.g. avoiding contact with the teacher, working only under pressure, keeping work pending until the end of a session, copying/pasting assignments) when necessary (Ghai et al. 2014).

2.3 Academic-writing research-readiness deficiencies

The international and national literature confirms the existence of problems in respect of linguistic and academic writing skills among postgraduate students (Hugo 2001; Johl 2002; Rochford 2003; Holtzhausen 2005: 90). For example, in countries in which English is not a main language, lack of proficiency in English is regarded as one of the core reasons why postgraduate students struggle with academic writing skills (Naidoo & Tshivhase 2003; Ferris 2011; Hyland 2013). The reasons for this is because these second-language learners are less fluent (use fewer words), less accurate (make more mistakes) and less effective (achieve lower holistic scores) in their academic writing activities.

In addition, creative and critical academic writing is highly context-dependent and sensitive when interactive social phenomena are integrated into specific cultural frames (Brodin 2010).

A lack of the ability to write and reason using these creative and critical, academically sound language might imply poor practice and decision-making relating to sound reasoning, and structured argumentation and presentation, which are vital skills for postgraduate students' research-readiness and need to be addressed by supervisors. Therefore to use appropriate academic language in a given social context (i.e. to write for the academic context and its discourse community) is a difficult (Holtzhausen 2005: 91-92; Brodin 2010: 102; Patterson & Weideman 2013, Weideman & Van Dyk 2014: 4), but an essential skill for the postgraduate student in order to achieve success in higher education (Burnett 2008).

Furthermore, the role of language testing at the start of the selection process of postgraduate students is valuable in identifying at-risk postgraduate students, but unfortunately not for identifying problematic academic writing areas. Therefore, by additionally conducting a diagnostic analysis of the results of the writing section of the Test of Academic Literacy for Postgraduate Students (TALPS) can assist supervisors to identify strengths and weaknesses of postgraduate students and then suggest improvement (e.g. how to produce a written argument). However, academic writing is not an isolated skill, but should be supplemented by "reading skills, listening skills, face-to-face interaction and remote or non-simultaneous communication in various media" (Pot 2013: 12).

Higher education institutions could also support academic writing skills through websites (with features such as advice, guidance and interactive resources), workshops (e.g. on plagiarism, referencing, etc.), as well as by means of support through writing fellows for one-on-one advice, and writing groups which meet in a safe and non-judgmental environment.

2.4　Concise summary of three research-readiness deficiencies

By preparing students for the postgraduate environment and making them aware of these three possible research-readiness deficiencies, they can start working towards quality postgraduate research, while still at undergraduate level. Furthermore, postgraduate students could also assist supervisors with research projects and course instruction, particularly in the case of capacity personnel shortages in both education and industry. It therefore remains crucial for higher education institutions to support these students (for example by offering financial support, opportunities for international research trips and internships, and regular contact with an international network system), thus providing them with a supportive, challenging and academically exciting environment in future (QAA 2004: 7-9; Altbach & Salmi 2011; Lyall & Meagher 2012). Lubbe et al. (2005: 248) emphasise this as follows: "Research students should receive support and direction sufficient to enable them to succeed in their studies". This requires conceptual, critical and creative skills from postgraduate students, which are essential means of relating theory and practice and developing reflexivity as a researcher.

The postgraduate student should therefore be invited to provide the institution with feedback on issues such as the guidance received from supervisors; the infrastructure provided by the institution; financial assistance received, as well as the effectiveness of administrative processes. In this way, the institution can be made aware of shortcomings in its practices, which will allow the situation to be rectified where necessary (Lategan & Lues 2005: 58; Burnett 2008).

The literature perspectives also confirm the importance of being aware of possible stumbling-blocks in the postgraduate study process in order to address some of the research-readiness deficiencies that contribute to extended completion times, as well as high dropout rates (Rochford 2003: 219; Strydom & Mentz 2014). These obstacles include fluctuating enthusiasm, isolation, increasing interest in work, boredom, frustration, other students submitting first, student-supervisor relationship problems, time management, deadlines, limited experience or facilities, technology readiness levels, the lack of context-dependent, creative, scholarly thinking and language problems.

Within the South African higher education context, a variety of policy documentation and legislation (RSA DoE 1997; RSA DoE 2001; CHE 2004; RSA DoP 2011; RSA DHET 2014) stipulate the need for increased postgraduate student numbers and outputs, especially amongst previously disadvantaged groups. These students, usually from the rural areas, may experience problems with regard to finances, accommodation and the lack of independence (Mapesela & Wilkinson 2005: 1239; RSA DoP 2011); therefore; it is important that the institution provides the necessary assistance in this regard. These postgraduate students might also require personal assistance, especially when family support is not available (Mouton 2001: 17), as well as support in respect of practical issues such as unfamiliarity with higher education facilities, infrastructure and access (Hay 2000: 59; CHE 2004: 8-9), but also academic input regarding assessing progress and evaluating quality (Albertyn et al. 2008) and undergraduate research preparation. These factors together highlight the fact that personal attributes, support from supervisors and institutional support should be part of the striving for successful postgraduate students.

3.   RESEARCH DESIGN AND METHODOLOGY

This formative-evaluative case study was aimed at investigating the research readiness of postgraduate university of technology students who have been registered for an MTech or DTech qualification in the Faculty of Management Sciences. The purposive, convenient sample consisted of currently registered postgraduate students in the programme with first-hand experience of the phenomenon under investigation (cf. Conrad, Haworth & Lattuca 2001; McMillan & Schumacher 2001; Crossley & Watson 2003).

3.1   Data collection and analysis

The rationale for mainly using a qualitative approach in this study was occasioned by the in-depth (Roberts 2010), multifaceted (Leedy & Ormrod 2005) and exploring/discovering (Roberts 2010) nature of issues under study in which the focus is on meaning (Merriam 2009). The measuring instruments were based on constructs identified in studies of Venter (2003); Ivanitskaya et al. (2008); Philips and Pugh (2005), and Conway (2011). The empirical investigation entailed focus-group discussions and individual interviews supported by a limited quantitative enhancement (e.g. a brief profile questionnaire to fill in the gaps in respect of the respondents' personal and educational particulars). The respondents granted permission for the focus-group discussions/individual interviews to be recorded on audiotape. These discussions were transcribed to data in Microsoft Word and then analysed by means of the Audacity computer program. A descriptive analysis of these qualitative data was made by identifying and acting on research-readiness deficiencies in the participants' answers from the focus group and interview discourses. The quantitative student profile questionnaire had a clear structure, sequence and focus, and included structured questions related to biographical, study and work environment information, and also included a combination of open- and close-ended questions on the identification of and action on research-readiness deficiencies. Biographical information included age, gender, language and place of residence. The study and work environment information section included year of registration, full- or part-time study, faculty, school and nature of current position. The identification of and action on research-readiness deficiencies section included questions on the postgraduate students' research needs, difficulties and suggestions for the provision of training and support to contribute to research-readiness skills. The quantitative student profile questionnaire was processed and analysed using the Microsoft Excel computer program.

The study included mainly qualitative data, complemented by a limited quantitative enhancement element. Therefore, some quantitative findings, which directly support the qualitative findings are mentioned.

Limitations of the data collection methods are noted in terms of sample size and the specific South African university of technology case study. This may affect the generalisability of the study to other faculties and/or universities, but trends can be noted within this sample.

4.   RESULTS AND DISCUSSION

This case study sought to provide perspectives on current university of technology postgraduate students' recognition and overcoming of research-readiness. The data cannot be generalised, but have validity as the basis for identifying themes for further exploration of research-readiness deficiencies amongst university of technology postgraduate students in their quest to complete their studies.

Although the majority of the participants (60%) agreed that they wanted to discontinue their studies at one stage or other, this option never became a reality. The biographical data indicated that the average age of the participants in this study was 25 years. The profile (see table 2) of these South African university of technology postgraduate participants was as follows:

Table 2: University of Technology postgraduate profile

University of technology postgraduate profile	
Marital status of postgraduate student	
Married	50%
Single	30%
Divorced	20%
Home language of postgraduate students	
Afrikaans	50%
English	30%
African	10%
Other	10%
Registered as postgraduate student	
Full-time	30%
Part-time	70%
Highest academic qualification obtained	
BTech degree	50%
BA	10%
Master's degree	30%
PhD	10%

Table 2 reflects that the majority of this postgraduate student group is married, they are studying part-time and not in their home-language. This can add to stress-factors that they may experience. The majority also continue their studies after obtaining a BTech degree.

The following aspects pertaining to the identification of and action on research-readiness deficiencies encountered by university of technology postgraduate students to produce quality postgraduate research emerged as themes from the collected data: motivation and commitment; and managerial and academic writing skills research-readiness deficiencies.

These three warning research-readiness deficiencies were identified by the university of technology postgraduate student participants.

4.1 The motivation and commitment research-readiness deficiencies

The warning signs for these two main research-readiness deficiencies (motivation and commitment) are also crucial to the success of higher education.

4.1.1 Postgraduates' motivation for postgraduate studies and commitment to the research topic

Qualitative data indicated that the participants (postgraduate students) were highly motivated (internally and externally) to continue with their studies. The majority (80%) of participants were comfortable and felt positive towards continuing with their postgraduate studies. However, the remaining participants indicated minor problems with the following: motivational and commitment research-readiness deficiencies (oral communication, motivation, counselling, emotional support and conflict management). It is evident from the collected data that half of the respondents received adequate support from their families, which implies that their families encouraged them to continue with their studies. The majority (70%) of the respondents indicated that they were internally motivated, while the others received additional external motivation from a study leader/colleague/family member. The fact that internal motivation features so prominently among students implies that progress towards establishing a research culture is being made.

Participants named feelings of discouragement and a lack of commitment that influenced their research-readiness. One student responded that "at a point I felt that my studies are going in a direction that I do not want it to go and then I felt negative". Another student's topic/study was chosen for her and she felt "that if it was my own thing, I would have been more motivated to finish". One student indicated that her study leader and her topic of research were 'given to her' and this resulted in "commitment not being there". The reason for topics/studies being chosen for students could be due to the majority of the respondents having been very young (60% of respondents were between 20 and 30 years old). Therefore, it may be assumed that they were novice researchers, as 50% only had a BTech degree.

4.2 The managerial research-readiness deficiencies

The planning, organising and logistics of countering managerial research-readiness deficiencies are important for balancing high workload and multiple stressors.

4.2.1 Postgraduate coping with high workload and multiple stressors

From the data collected, it was found that 50% of the respondents were married and 70% were part-time students, therefore employed permanently. Based on this, they might have experienced problems in handling the responsibilities and multiple roles associated with a family, the world of work and postgraduate studies. These participants also believed that their heavy workloads (70%), as well as the limited, small and noisy workplace space available at computer facilities of libraries (60%) contributed significantly to their high stress levels. Furthermore, all the postgraduate students indicated that they were not working according to set timeframes, which could have resulted in a backlog of completed chapters and failure to complete their studies on time. The coping suggestions to overcome these managerial input research-readiness deficiencies require institutional support and training with regard to planning, organising, directing, monitoring and time-management skills and a healthy lifestyle. According to Clegg and Gall (2006: 329-331) the supervisory role is one of a navigator, guide, or route planner, indicating that the supervisor has greater knowledge of the journey (meaning the whole research process) than the student. Students encounter a more difficult journey in reality than they expected and the supervisor's role is to reassure or encourage. Outside pressures exist, compelling supervisors to find ways of motivating students to complete on time if they wish to avoid losing future sponsorships. The data collected indicated that the minority of respondents were using a scheduled period and this is a point of concern as a scheduled programme followed by the student and supervisor is important to ensure the progression and timely completion of the study.

4.3 The academic-writing research-readiness deficiencies

Academic writing and reasoning are regarded as the core issues for success in higher education.

4.3.1 Postgraduate academic writing skills

The majority of the participants (90%) strongly agreed that they struggled with academic writing, research methodology and statistical analysis skills, because of the difficulty and unfamiliarity of research terminology as well as the English language medium used (other than their home language). Especially the academic-writing research-readiness deficiencies had a negative impact on their progress towards completing their studies. From the data collected it can be inferred that 60% of the respondents completed their studies in their second or third language. This could be an attempt from students to comply with international standards by publishing in English. As most postgraduates received inadequate guidance, both in school and at work, to improve academic writing to a required level, supervisors and institutions should provide appropriate assistance to contribute to the successful completion of their studies on time.

As it is being expected from a postgraduate student to be able to conceptualise facts and think critically and creatively, it could be difficult for those not being able to follow up results, ideas and theories. This could lead to dissatisfaction and frustration for most research students during the dissertation/thesis writing stage (Phillips & Pugh 2005).

5. CONCLUSIONS, IMPLICATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

In this article, the authors set out to answer the following research question: How do we recognise and overcome possible research-readiness deficiencies of postgraduate students?

Listening to the experiences of the participants in the case study among university of technology postgraduate students illustrated that there were diverse, complex research-readiness deficiencies that resulted in poor success rates and high rates of overdue completion. Extensive research into improving and sustaining the research-ready capabilities of postgraduate students focused on generic issues of research development, but this study identified limited motivation and commitment, managerial and academic-writing research-readiness skills as contributing factors which complicated the multi-faceted delivery mode of the supervisor. Continuous improvement of research degree programmes and eliminating the students' research deficiencies are not only important for economic growth and social development, but also to develop a skilled and capable workforce. Therefore, by knowing and acting on the kind of motivation and commitment students require, as well as the managerial and academic-writing research-readiness mechanisms that may assist postgraduate students to perform better, these research-readiness deficiencies can be addressed.

Based on the empirical investigation, this article proposes that the most prominent improvement of the quality of postgraduate research should start at undergraduate level. The suggestion is that research-ready skills (e.g. motivation and commitment, time management and academic writing, statistical analysis, scientific reasoning, knowledge of literature and recent debates, information literacy skills, technology readiness levels) should be scaffolded into undergraduate courses to create a coping repertoire for workload and stress challenges when students enter their postgraduate studies. Thus, the variety of required research-readiness skills that emerges from research of this nature could indeed assist in multiple ways to enhance accountability in and quality of postgraduate higher education. For example, postgraduate students consistently develop critical and creative thinking capabilities when learning to generate and evaluate knowledge, clarify concepts and ideas, seek possibilities, consider alternatives and solve problems. Thus, conceptual, critical and creative thinking skills are not merely academic skills, but they are skills used daily by highly successful researchers in problem-solving, asking questions and decision-making.

More empirical research is needed into how conceptual, critical and creative complexities and application of theories, methods and strategies can be facilitated in undergraduate studies to rectify shortcomings in practices and to set realistic standards.

6.   REFERENCES

Albertyn, R.M., Kapp, C.A. & Bitzer, E.M. 2008. Profiling existing postgraduate students' performance and experiences. South African Journal of Higher Education 22(4): 749-772.

Altbach, P.G. & Salmi, J. 2011. The Road to Academic Excellence: The Making of World-Class Research Universities. Washington: The World Bank Publications.

Berg, B.L. 2004. Qualitative research methods for the social sciences. Boston, MA: Pearson Education.

Boud, D. & Lee, A. 2005. Peer learning as pedagogical discourse for research education. Studies in Higher Education 30(5): 501-516.

Brodin, E. 2010. The relationship between critical and creative thinking in postgraduate education. Paper presented at the Quality in Postgraduate Research Conference on Education Researchers for the 21st Century. Adelaide, Australia.

Burnett, L. 2008. How to improve your academic writing. Essex, University of Essex: Teaching and Learning Unit.

Council on Higher Education (CHE). 2004. Criteria for institutional audits. Available at: .   [Accessed 6 December 2006].

Clegg, S. & Gall, I. 2006. The Discourse of Research Degrees Supervision: A case study of supervisor training. Higher Education Research & Development 17(3): 323-332.

Conrad, C.F., Haworth, J.G. & Lattuca, L.R. 2001. Qualitative research in higher education: Expanding perspectives. Boston, MA: Pearson Custom Publishing.

Conway, K. 2011. How prepared are students for postgraduate study? A comparison of the information literacy skills of commencing undergraduate and postgraduate information studies students at Curtin University. Australian Academic & Research Libraries 42(2): 121-135.

Crossley, M. & Watson, K. 2003. Comparative and international research in education: Globalisation, context and difference. Croydon: Anthony Rowe Ltd.

Décamps, G., Boujut, E. & Brisset, C. 2012. French College Students' Sports Practice and its relations with Stress, Coping Strategies and Academic Success. Frontiers in Psychology 3: 104.

Enders, J. 2004. Research training and careers in transition: A European perspective on the many faces of the Ph.D. Studies in Continuing Education 26(3): 419-429.

Felton, S. 2007. Impact of the research assessment exercise response by the National Postgraduate Committee. Available at: http://www.npc.org.uk. [Accessed 29 October 2007].

Ferris, D.R. 2011. Treatment of Error in Second Language Student Writing. 2nd ed. USA: The University of Michigan Press.

Ghai, S., Dutta, M. & Aarti, G. 2014. Perceived level of stress, stressors and coping behaviours in nursing students. Indian Journal of Positive Psychology 5(1): 60-65

Graham, A. & Grant, B. 1997. Managing more postgraduate research students. Available at: http://osds.uwa.edu.au/about/resource/collection/postgraduate_supervision _and_research. [Accessed 16 October 2007].

Grant, B.M. 2005. Fighting for space in supervision: Fantasies, fairy tales, fictions and fallacies. International Journal of Qualitative Studies in Education 18(3): 337-354.

Harrison, S. & Grant, C. 2015. Exploring of new research pedagogy: Time to let go of master-apprentice style supervision? Teaching in Higher Education 20(5): 556-566.

Hay, D. 2000. Quality research in South African higher education: Illusions, imperatives and ideals. South African Journal of Higher Education 14(1): 53-61.

Haynes, C., Bulosan, M., Citty, J., Grant-Harris, M., Hudson, J. & Koro-Ljungberg, M. 2012. My word is not my doctoral program ... or is it? Female students' perceptions of well-being. International Journal of Doctoral Studies 7: 1-17.

Holtzhausen, S.M. 2005. The supervisor's accountability versus postgraduates' responsibility within the academic writing arena. South African Journal of Higher Education 19(1): 89-100.

Hugo, A.J. 2001. Lees en studie op tersiêre vlak: Die affektiewe komponent van lees verdien ook aandag. Journal for Language Teaching 35(2/3): 138-146.

Hyland, F. 2013. Understanding the challenges faced by EFL postgraduate writers and their self-initiated writing strategies. Paper presented at the 12th Symposium on Second-Language Writing: L2 Writing in the Global Context: Represented, Underrepresented, and Unrepresented Voices. Jinan, China.

Ivanitskaya, L., Laus, R. & Casey, A.M. 2008. Research readiness self-assessment: Assessing students' research skills and attitudes. Journal of Library Administration 41(1):167-183.

James, R. & Baldwin, G. 1999. Eleven practices of effective postgraduate supervisors. Melbourne: Centre for the Study of Higher Education and School of Graduate Studies, University of Melbourne.

Johl, R. 2002. Akademiese geletterdheid: Van studievaardighede tot kritiese geletterdheid. Journal for Language Teaching 36(1/2): 41-61.

Kelly, R. & Ling, L. 2001. A post-traditional supervisor-supervisee relationship. In: A. Bartlett & G. Mercer (eds.). Postgraduate research supervision: Transforming (r)elations. Washington DC: Peter Lang Publishing, 71-78.

Khafagi, B. 1990. Influence of international students on the U.S. educational system and professional practice. Civil Engineering 60(11): 67-69.

Lategan, L.O.K. & Lues, L. 2005. Doing research. Bloemfontein: Tekskor BK.

Leedy, P.D. & Ormrod, J.E. 2005. Practical research: Planning and design. New Jersey: Pearson Education LTD.

Le Grange, L. & Newmark, R. 2003. Postgraduate research supervision in a socially distributed knowledge system: Some thoughts: Perspectives in higher education. South African Journal of Higher Education 16(3): 50-57.

Lessing, N. & Lessing, A.C. 2004. The supervision of research for dissertations and theses. Acta Commercii 4: 73-87.

Lubbe, S., Worrall, L. & Klopper, R. 2005. Challenges in postgraduate research: How doctorates come off the rails. Alternation 12(1): 243-262.

Lyall, C. & Meagher, L.R. 2012. A Master's class in interdisciplinarity: Research into practice training the next generation of interdisciplinary researchers. Futures 44(6): 608-617.

MacGregor, K. 2014. Higher Education in the20th year of democracy. Available at: http://www.universityworldnews.com/article.php?story=2014 0425131554856 [Accessed 8 June 2015].

Makoni, M. 2010. South Africa: A progressive Higher Education agenda. Available at: http://www.universityworldnews.com/article.php?story=2010 1113063804474   [Accessed 4 June 2015].

Manathunga, C. 2005. Early warning signs in postgraduate research education: A different approach to ensuring timely completions. Teaching in Higher Education 10(2): 219-233.

Mapesela, M.L.E. & Wilkinson, A.C. 2005. The pains and gains of supervising postgraduate students from a distance: The case of six students from Lesotho. South African Journal of Higher Education (Special Edition) 19: 1238-1254.

Maree, J.G. 2012. Complete your thesis or dissertation successfully: Practical guidelines. Claremont, Cape Town: JUTA.

McCallin, A. & Nayar, S. 2012. Postgraduate research supervision: A critical review of current practice. Teaching in Higher Education 17(1): 63-74.

McCormack, C. 2004. Tensions between student and institutional conceptions of postgraduate research. Studies in Higher Education 29(3): 319-334.

McMillan, J.H. & Schumacher, S. 2001. Research in education: A conceptual introduction.5th ed. Harrisonburg, VA: R.R Donnelley & Sons Inc.

Meerah, T.M.S. 2010. Environmental citizenship: What level of knowledge, attitude, skill and participation do the students own? Procedia: Social and Behavioral Sciences 2(2): 5715-5719.

Merriam, S.B. 2009. Qualitative research: A guide to design and implementation. San Francisco, CA: Jossey-Bass.

Meulenberg-Buskens, I. 1997. Turtles all the way down: On a quest for quality in qualitative research. South African Journal of Psychology 27(2): 111.

Morgan, W. & Ryan, M. 2003. Rendering an account: An open-state archive in postgraduate supervision. Higher Education Research and Development 22(1): 77-90.

Moses, I. 1985. Supervising postgraduates. Australia: Higher Education Research and Development Society of Australasia.

Mouton, J. 2001. How to succeed in your master's and doctoral studies. Paarl: Paarl Print.

Naidoo, N.A. & Tshivhase, A.C. 2003. Mentored academic writing for higher education in South Africa: The practice of higher education. South African Journal of Higher Education 17(3): 226-234.

Neumann, R. 2003. The doctoral education experience: Diversity and complexity. Available at: http://www.auqa.edu.au/school/art/text/oct04/dibble_vanloon.htm. [Accessed 10 May 2006].

Ngcongo, R.P. 2001. Supervision as transformative leadership in the context of university goals. South African Journal of Higher Education 15(3): 53-57.

Patterson, R. & Weideman, A. 2013. The typicality of academic discourse and its relevance for constructs of academic literacy. Journal for language teaching 47(1): 107-123.

Paul, R. & Elder, L. 2009. Critical thinking, Creativity, Ethical Reasoning: A Unit of Opposites. In: D. Ambrose & T. Cross (eds.). Morality, Ethics and Gifted Minds. Dillon Beach: Springer US, 117-131.

Pearson, M. & Brew, A. 2002. Research training and supervision development. Studies in Higher Education 27(2): 135-150.

Phillips, E.M. & Pugh, D.S. 2005. How to get a PhD. Glasgow: Bell & Bain Ltd.

Pival, P.R., Lock, J.V. & Hunter, M. 2008. Assessing Research Readiness of Graduate Students in Distance Programs. Public Services Quarterly 3(3-4): 1-18.

Pot, A. 2013. Diagnosing academic language ability: An analysis of TALPS. Groningen: University of Groningen, Faculty of Liberal Arts.

Quality Assurance Agency for Higher Education (QAA). 2004. Code of practice for the assurance of academic quality and standards in higher education: Section 1 – Postgraduate research programmes. Mansfield: Linney Direct.

Roberts, C.M. 2010. The dissertation journey: A practical and comprehensive guide to planning, writing and defending your dissertation. Thousands Oak, California: Corwin (SAGE Company).

Rochford, K. 2003. Hundred per cent successful throughput rates of master's and doctoral research students. South African Journal of Higher Education 17(2): 217-225.

Republic of South Africa. Department of Education (RSA DoE). 1997. White Paper 3: A programme for the transformation of higher education. Pretoria: Government Printers.

Republic of South Africa. Department of Education (RSA DoE). 2001. National Plan for Higher Education. Pretoria: Government Printers.

Republic of South Africa. Department of Higher Education and Training (RSA DHET) 2014. Research Agenda 2014-2017. Pretoria: DHE&T.

Republic of South Africa. Department of Presidency (RSA DoP). 2011. National Development Plan 2030: Our future, make it work: Executive summary. National Planning Commission. Executive Summary-NDP 2030-Our future-make it work.pdf. [Accessed 26 April 2014].

Steyn, G.M. 2001. Meeting the needs of postgraduate learners: A historical review. Progressio 23(1): 30-48.

Stephens, N.M.; Fryberg, S.A.; Markus, H.R.; Johnson, C.S. & Covarrubias, R. 2012. Unseen disadvantage: How American universities' focus on independence undermines the academic performance of first-generation college students. Journal of Personality and Social Psychology 10: 1037/a0027143.

Strydom, J.F. & Mentz, M.M. 2014. Student engagement in South Africa: A key to success, quality and development. Engaging University Students. Springer: Singapore.

University of Canterbury. 2006. National Centre for Research on Europe. Available at: http://www.europe.canterbury.ac.za/studentinfo/eupostgrad .shtml. [Accessed 20 June 2006].

Van Biljon, J.A. & De Villiers, M.R. 2013. Multiplicity in supervision models: The supervisor's perspective. South African Journal of Higher Education 27(6): 1443-1463.

Van der Westhuizen, P.C. & De Wet, J.J. 2003. The training needs of supervisors of postgraduate students in the social sciences and humanities. South African Journal of Higher Education 16(3): 185-195.

Venter, K. 2003. Coping with Isolation: The role of culture in adult distance learners' use of surrogates. Open Learning 18(3): 271-287

Weideman, A. & Van Dyk, T. (eds.). 2014. Academic literacy: Test your competence. Bloemfontein: University of the Free State, ICELDA.

Wisker, G. 2010. The good enough doctorate: Doctoral learning journeys. Acta Academica Supplementum 1: 223–242.