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Formative postgraduate assessment: a comparative case study using a university in the USA and one in South Africa

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The purpose of this study was to investigate formative postgraduate assessment from an international perspective while acknowledging the two countries' differing cultures and environments. Using a case study approach, data were collected from research supervisors of postgraduate work at a university in the United States (USA) and a university in South Africa (SA). While many similarities were noted, differences also emerged. The most striking contrasts were: the apparent focus of USA supervisors in the institution studied on developing critical thinkers and the apparent focus of SA supervisors in the institution studied on production of the final product and paying attention to students' culturally based values and beliefs. While not minimising the diverse policies and practices between these institutions, and their effects on doctoral supervision, we suggest that these differences may have their origins in the contrasting academic history and culture of the two countries.

Keywords: postgraduate formative assessment; international higher education; postgraduate supervision

Introduction

Formative assessment of postgraduate work is sometimes viewed by both the student and the research supervisor as unstructured or amorphous. However, upon closer inspection, common elements can be identified. It then becomes feasible to draw some comparisons between universities, even those in different countries, as to the practices associated with this assessment. Since higher education is becoming global in its functions and constituencies, research in an international context is critical (Lee & Danby, 2012).

Because the postgraduate research supervisor has been identified as a crucial element in student degree attainment (De Valero, 2001; Gill & Bernard, 2008; Gurr, 2001), this case study report focuses on the perspectives of postgraduate research supervisors in two different countries from two different university models with regard to the structure and function of formative postgraduate assessment. Data were collected from supervisors at a university in the United States (USA) and a university in South Africa (SA) to identify elements critical to formative postgraduate assessment. We then looked at these elements to determine whether there were substantive differences in assessment between the institutions.

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We started by reviewing the purposes of doctoral education in the USA and in SA. In the USA, as is the case in many developed countries, the focus of doctoral education is to produce graduates that create new knowledge 'that is socially and economically useful and worthwhile' (Evans & Liou, 2011, p. 401). Based on the Academy of Science of South Africa (ASSAf, 2010) report, the goal of doctoral education in SA is to produce graduates who can contribute to economic growth (Nerad, 2009). Therefore, the expectation for graduates to contribute to economic growth is a common theme for both countries.

We then explored the expected outcomes for the final product – the PhD dissertation (USA) and PhD thesis (SA). We found that the expectations for the end product were quite similar. The USA PhD dissertation is expected to demonstrate the ability of the student to think critically, communicate effectively, and do independent scholarly work (Lovitts, 2005). The end product of the PhD awarded in SA is expected to be independent, in-depth and publishable work meeting international standards and which demonstrates intellectual independence (The South African Qualifications Authority [SAQA], 2012). Once we had established that the expected outcome was similar regardless of the setting, we then proceeded to gather data on formative assessment at both institutions.

Doctoral education USA and SA – similarities and differences

To place this research in context, we considered the background of postgraduate studies in both countries. In the USA, the doctoral degree has three major components: formal course work, the assessment of knowledge and skills attained through coursework – the 'qualifying examination', and the production of independent research – the dissertation (Gardner, 2009, p. 30). This country has a long history of awarding doctoral degrees, with Yale awarding the first USA doctoral degrees in 1861 (Gardner, 2009, p. 31).

In contrast, SA is a country that has gone through an almost unfathomable transition from apartheid to inclusion. Where once people of colour were systematically excluded and segregated by the government, the post-apartheid government has been making enormous efforts to be inclusive and provide opportunity for full participation in all aspects of society. This can be seen in the desire to provide equal educational opportunities to all people in SA, especially those who had been disenfranchised under apartheid. In higher education, the initial focus was on undergraduate education and expanding those opportunities. However, in 2006, the focus shifted to doctoral education (Backhouse, 2009). Therefore, while the number of individuals receiving a PhD in SA remains low, the figure is climbing (Dell, 2010).

As contrasted with the USA, where there are a series of assessments with a strong emphasis on the coursework component of the degree, South African doctoral education follows the Oxford model (Pearson, 2005). The student and the research supervisor must mutually agree to work together, and the evaluation of the student's work is the summative assessment of the thesis conducted by a panel of assessors (Central University of Technology, 2014). However, even though the doctoral educational processes differ, the role of the research supervisor and formative assessment are critical.

Formative postgraduate assessment

Postgraduate supervision encompasses formative postgraduate assessment. The focus is on the interaction among teacher, student and knowledge (Grant, 2003). Supervision is the central method by which students are inducted into the role of the academy (Green, 2005). Many authors note that there is a difference between supervision using American models and that using British models. However as one author states, 'across countries though, I would venture that the process of 'supervision' is much the same, even if embedded in a different programme style' (Acker, 2011, p. 414). A crucial element of the process is that of formative assessment.

Black and Wiliam (1998) assert that formative assessment is applicable at any level of education. It is used to find out what students know and what they do not know (Boston, 2002). It then provides motivation for students to address the gap (Biggs, 1998). Cauley and McMillan (2009, p. 1) assert that formative assessment 'is now recognised as one of the most powerful ways to enhance student motivation and achievement'.

In higher education, the purpose of postgraduate formative assessment is to prepare the student not only for the successful acceptance of the thesis or dissertation, but in a broader context to prepare the student for practice in an academic environment (LaPidus, 1997; Hugo, 2009; Bak, 2011).

Roles and responsibilities of the postgraduate research supervisor

The roles and responsibilities of the research supervisor are not universally agreed upon, and so this is an area of active debate. While there is no formal process by which supervisors receive training to perform their duties, there is a perception that the quality of the supervision may have an effect on the successful completion of student studies as well as on the quality of the work produced. In 2003, Rose compiled an ideal mentor (research supervisor) scale (Rose, 2003). Two items on the scale, which 75% of respondents rated as extremely important were: 'my ideal mentor would communicate openly, clearly and effectively' and 'my ideal mentor would provide honest feedback about my work' (Rose, 2003, p. 479).

The function of the research supervisor is to guide the student in the research process and to assist the student in becoming an 'independent professional researcher and scholar in his/her field, capable of adapting to various research arenas' (Pearson & Brew, 2002, p. 139; Wisker, Exley, Antoniou, & Ridley, 2008, p. 8–10). During this process, the research supervisor has to fulfil several roles that place high demands on him or her (Bitzer & Albertyn, 2011). Some of the roles are that of 'master', 'a critical friend', and 'gate-keeper of science' (Evans & Pearson, 1999, p. 196; Wisker, 2005, p. 41).

According to Grant (2010, p. 93), a 'triadic' relationship is formed with teacher, student and knowledge existing as the three participants in the process. To attain the required outcome, an agreement should exist between the student and the supervisor working towards a common goal, namely the production of a thesis/dissertation of high quality (Halse & Malfroy, 2010). Grant (2003, p. 175) also indicates that the successful outcome of postgraduate education depends on 'good supervision'. Phillips and Puh (2005) refer to the postgraduate student journey as one of phases of challenge and support. The student is challenged to develop attributes of independent and critical thinking with the goal of becoming an independent researcher.

During this journey, support is provided by fellow students, family and significant others, professors, and the student's research supervisor.

Methodology

Having established the importance of formative assessment throughout the pursuit of a postgraduate degree and the vital role of the research supervisor in this journey, a qualitative case study exploring the perceptions of postgraduate research supervisors was conducted with a USA and a South African university. While the type of institution differed – one being a comprehensive research-intensive university and one being a university of technology – faculty from these two institutions have a long and well-established professional relationship and therefore collaboration was simplified. While there are 'different ideas about what a case study is' and variation in methodological approaches (Johansson, 2003, p. 2 of 14), the qualitative case study approach was chosen since the researchers had identified an issue that would lend itself to a methodology which would permit the collection of narratives *in situ* (Stake, 1998).

With Fulbright funding, a faculty person from SA travelled to the USA and began to collaborate with her American counterpart on this project. After Institutional Review Board approval was obtained, twenty-three research supervisors from various schools at the university participated voluntarily in semi-structured interviews. The interviews consisted of eight open-ended questions related to formative graduate assessment.

Data analysis, interpretation and content analysis were completed according to the process outlined by Denscombe (2007). Common themes, categories and concepts were created and these were grouped according to subthemes. The process was completed by verification and interpretation of the data. One of the themes that emerged from this process was that of identification of the elements included in successful formative assessment.

After discovering that identifying successful elements involved in formative postgraduate assessment was a major theme to emerge from the data collected from the USA university, we decided – in the absence of project funding – to perform a more limited study in SA, focusing on this particular theme. We used a university of technology that produced doctoral students, and with whom a relationship had been established. The research was approved by the South African university's research committee. Twelve faculty members involved in postgraduate doctoral supervision responded to a request to provide information regarding details of their approaches to formative postgraduate assessment in the supervision process. A similar process to identify common themes that emerged from the data was followed.

Results

The qualitative results of the USA university are presented first, followed by those of the South African university. In the discussion section of this article, similarities and differences in approaches are highlighted. Direct quotes attributed to faculty members are identified by a number assigned to each respondent (US1–23; SA1–12). Respondents are therefore not identified by gender, race, ethnicity or discipline. While other authors have identified that these factors influence the supervisory

process (Evans & Liou, 2011; Green, 2005; Manathunga, 2011) these factors were not the focus of our study and thus not included.

USA university

When results from the semi-structured interviews conducted at the American university were analysed, three themes emerged. These themes could be characterised as those focusing on the attitude of the supervisor underlying the assessment, the environment in which the assessment is performed, and the mechanics of the assessment.

When the attitude of supervisors with regard to postgraduate supervision was analysed, it was found that the supervisors described assessment as needing to be motivating. Supervisors also mentioned encouragement for the student to explore new ideas and to demonstrate critical thinking and creativity. Several research supervisors noted that assessment is a process of discovery for both the student and the supervisor, and that both parties have responsibilities in terms of the success of the process. One research supervisor mentioned that it was 'important to keep in mind the goal of engaging in the PhD process- to facilitate the development of an eventual faculty member' (US1). Another supervisor echoed this by stating that the desired outcome was 'not just getting them successful in the thesis but also beyond that' (US22).

With regard to the assessment environment, research supervisors used words such as 'supportive' and 'challenging'. One supervisor said, 'I use a challenging approach in how I give the feedback' (US22).

When research supervisors spoke of the mechanics of the formative assessment, they used phrases such as a preference for 'discourse rather than just providing feedback', a preference for 'face-to-face meetings', and a preference for 'regular, frequent and clear communication'. One supervisor said, 'E-mail feedback works well as long as it is precise and direct; as soon as there is emotional overlay it becomes more difficult to get the message through; then face-to-face meetings are preferred' (US18). Several participants noted that formative assessment could be provided by other students as well as by the research supervisor. One supervisor said, 'Students learn from others in the process; there is a mentoring culture in the school' (US9). To further facilitate the feedback process, some research supervisors used modelling as well as rubrics.

South African university

Upon the analysis of the responses from the research supervisors at the South African university, similar themes emerged, albeit with more comments that could be characterised as mechanical as contrasted to attitudinal.

The attitude of supervisors towards postgraduate formative assessment revealed that many supervisors described assessment as needing to be motivating with mutually agreed upon expectations. One respondent spoke of assessment being used to 'assist students in making the connections among the research, their lives and the real world' (SA2). Another supervisor reflected, 'Postgraduate supervision practice includes a continuous formative process where the supervisor continuously assesses and tries to improve the research and writing skills capabilities of the student' (SA9).

When describing the assessment environment, South African supervisors used words such as 'trusting', 'honest', 'open' and 'supportive'. Several mentioned that the research supervisor should be 'respectful of traditions and beliefs of students with regard to their culture'. One supervisor stressed the importance 'in terms of international students, it's also necessary to provide facilities that support the candidate's own traditions and beliefs' (SA1).

When the South African research supervisors spoke of the mechanics of the formative assessment, they used words and phrases such as a preference for 'discourse rather than just providing feedback', a preference for 'face-to-face meetings', and feedback that was 'structured, prompt, timely, regular, constructive, individualised and developmental'. Several supervisors noted that formative assessment could come from other students as well. Some of the research supervisors used rubrics.

Discussion – contextual

The results of this case study should be considered and framed in the context of the two cultures and with consideration of social as well as educational issues. As Lee and Danby (2012) point out, the relationship between a research supervisor and a doctoral student is shaped by societal influences and the environment. Danby and Lee (2012, p. 7) state that since doctoral education is a 'social activity' the idea is that both the student and the supervisor need to construct and design learning opportunities within the research space and thus move doctoral education beyond the supervisor–student relationship. While this relationship is a critical factor in doctoral success in both the USA and in SA, in the USA education success is also dependent on successful completion of course work and the passing of a qualifying examination. In SA, success is much more dependent on the influence of the research supervisor. The experience of apartheid must also be considered as one examines the supervisor/student dyad. As noted in the results section of this paper, the supervisors in SA were much more conscious about being knowledgeable and respectful of student values and beliefs. The focus of the supervisors in SA on the thesis itself can also be understood in terms of the movement to increase the number of doctoral prepared individuals in that country.

Discussion – similarities and differences

The most striking difference when the attitudes of participants were compared was the apparent focus of the USA research supervisors on developing critical, creative thinkers with the final product being one step in a journey of career development. In contrast, the focus of the majority of South African respondents seemed to be on the completion of the final product (the thesis) and formative assessment being used to guide the attainment of that outcome. Aitchison and Paré (2012, p. 22) emphasise that a doctoral student need learn to 'speculate, explore, and create knowledge' and not only focus on what is already known. Creativity, according to Frick (2012) needs to be an integrated part of doctoral pedagogy.

When reviewing the responses for descriptors of the types of environment in which the formative assessment occurs, the only term that was used by research supervisors from both universities was the word 'supportive'. Similarly, the word 'motivating' was the only word used in both settings by the respondents when attitude was discussed. In addition to the similarities noted, there were also apparent

differences in the responses obtained from the research supervisors from the USA and those obtained from the SA respondents. At the South African university, explicit attention is paid to respecting the traditions and beliefs of individual students and those of various ethnicities. Attention is focused on creating an environment of trust, honesty, openness and support in order for assessment to be effective (Waghid, 2007). The element of trust was mentioned by several of the South African supervisors. In contrast, one of the words used by several of the USA respondents was 'challenging' when referring to the environment for formative assessment.

Finally, when looking at the responses of both sets of research supervisors, five elements of the mechanics of formative assessment appeared to be common:

- a preference for discourse rather than just feedback;
- a preference for face-to-face meetings;
- a desire for regular communication;
- peer mentors in addition to supervisors; and
- a rubric which was used by some supervisors.

Discussion – comparison of the results of this study with those of others

The results obtained from interviews and written commentary from postgraduate research supervisors in the USA and those in SA reflected many of the comments made in the literature on the topic. The work by Phillips and Puh (2005) reported on several attributes of assessment that students rated as extremely important. One was that of open, clear and effective communication, and another was that of honest feedback. Research supervisors in SA used the words 'open' and 'honest' when describing the feedback they provide; supervisors in the USA used the word 'clear'. The rubric used by some of the supervisors or departments is an ideal tool to capture the performance measures of the thesis or dissertation as well as to provide feedback to the student (Lovitts, 2005).

In the literature on postgraduate supervision, several authors refer to the attainment of the PhD as a journey. This characterisation was used in the responses by several USA research supervisors although it was not specifically referred to by the South African supervisors. Gardner (2009) as well as Phillips and Puh (2005) note that this journey encompasses phases of challenges and support, and the challenging environment was noted by several USA research supervisors, while the supportive nature of the interaction was noted by both groups.

Several articles on formative postgraduate assessment stressed the need to look beyond the end product and to create individuals who are capable of being contributing faculty members and critical and reflective thinkers (Pearson & Brew, 2002; Wisker et al., 2008). This goal was explicitly stated by several respondents from the USA university, and to a lesser extent, by some of the respondents from the SA university. This was in contrast to the apparent focus of the majority of the South African supervisors on production of the final product. However, when viewing these apparent contrasts through a historical lens, some of the differences in perspective may be explained by where each country is in the doctoral journey. As stated earlier, the first doctoral degrees in the USA were awarded in 1861. In 2008, there were 48,802 doctoral degrees awarded in the USA (Fiegener, 2009) contrasted with 1182 in SA (Dell, 2010). These numbers are of concern for the higher education

institutions and postgraduate supervisors in SA. When overlaid with the racial make-up of degree holders in SA, one can make the case that sheer numbers (quantity) may become important at this time.

Conclusion

The focus of this case study was to add to the international dialogue on postgraduate assessment. In order to put these results into a conceptual framework, it is important to note the differences in environment and culture between the two countries and in the doctoral process. Similarities and differences were noted in the responses of the research supervisors from the USA and from SA in terms of the postgraduate assessment process. Two of the most striking findings were the focus of the USA supervisors to develop critical, creative thinkers with the dissertation being one step on the journey to career development and the attention the South African supervisors demonstrated to respecting the students' culturally based values and beliefs. Findings in the literature confirmed that the postgraduate supervision process with formative assessment and feedback contributes to the transformation of knowledge, the supervisor and the student (Grant, 2003). This transformation prepares the student for entry into the international scholarly community.

In both countries and in line with the literature consulted, a desire for the communication between the research supervisor and postgraduate students to be open, honest and clear was apparent. Trust should be established in order for the relationship to be effective. Both challenging and supporting the students are equally important. From the South African supervisors' responses it was clear that specific attention should be paid to the beliefs and traditions of those students whose culture may differ from the dominant culture of the institution. This focus is understandable based on the charge to academic institutions in SA to become more inclusive of people underrepresented in higher education for many years.

While we are well aware that this case study is based on data from two institutions and we do not account for the recognisable diverse policies and practices within and among institutions in the two countries, we may still make cautious inferences regarding the study results. We suggest that the differences noted may have their origins in the contrasting academic history and culture of the two countries.

It will be interesting to continue to study the academic data and cultural changes of a country that is allocating resources to the production of doctoral degree holders, and compare these with the academic data of countries with more established programmes. Further exploration of the role of gender, race, ethnicity, culture, history and individual supervisory styles may add to the understanding of the nuances of postgraduate formative assessment. Furthermore, the way in which formative assessment is used to enhance critical thinking skills is another area that researchers may want to investigate. All of these efforts will assist us in understanding the process of formative assessment in an international context.

Notes on contributors

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References

Academy of Science of South Africa. (2010). *The PhD study: An evidence-based study on how to meet the demands for high-level skills in an emerging economy*. Retrieved from http://www.assaf.co.za/wp-content/uploads/2010/11/40696-Boldesign-PHD-small.pdf

Acker, S. (2011). Reflections on supervision and culture: What difference does difference make? *Innovations in Education and Teaching International, 48*, 413–420.

Aitchison, C., & Paré, A. (2012). Writing as a craft and practice in the doctoral curriculum. In A. Lee & S. Danby (Eds.), *Reshaping doctoral education: International approaches and pedagogies* (pp. 12 –35). London: Routledge.

Backhouse, J. (2009). *Doctoral education in South Africa: Models, pedagogies and student experiences* (Unpublished PhD thesis). School of Education, University of the Witwatersrand, Johannesburg.

Bak, N. (2011). Professionalising the supervision relationship: A reply to Waghid, Fataar and Hugo. *South African Journal of Higher Education, 25*, 1047–1061.

Biggs, J. (1998). Assessment and classroom learning: A role for summative assessment? *Assessment in Education: Principles, Policy & Practice, 5*, 103–110.

Bitzer, E., & Albertyn, R. M. (2011). Alternative approaches to postgraduate supervision. *South African Journal of Higher Education, 25*, 875–888.

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice, 5*, 7–74.

Boston, C. (2002). *The concept of formative assessment. Practical assessment, research & evaluation, 8*. Retrieved from http://PAREonline.net/getvn.asp?v=8&n=9

Cauley, K. M., & McMillan, J. H. (2009). Formative assessment techniques to support student motivation and achievement. *The Clearing House, 83*, 1–6.

Central University of Technology. (2014). *Student assessment manual 2014*. Bloemfontein: Author.

Danby, S., & Lee, A. (2012). Framing doctoral pedagogy as design and action. In A. Lee & S. Danby (Eds.), *Reshaping doctoral education: International approaches and pedagogies* (pp. 3–11). London: Routledge.

Dell, S. (2010). South African decline in PhD numbers a major problem. *University World News, 60*. Retrieved from http://www.universityworldnews.com/article.php?story=20100820150736361

Denscombe, M. (2007). *The good research guide for small-scale social research projects*. Berkshire: McGraw-Hill.

de Valero, Y. (2001). Departmental factors affecting time-to-degree and completion rates of doctoral students at one land grant research institute. *The Journal of Higher Education, 72*, 341–367.

Evans, T., & Liou, I. Y. (2011). Institutional pedagogical waypoints: Reflections on doctoral journeys between Taiwan and Australia. *Innovations in Education and Teaching International, 48*, 401–411.

Evans, T., & Pearson, M. (1999). Off-campus doctoral research and study in Australia. *Review of Australian Research in Education, 5*, 185–204.

Fiegener, M. K. (2009). *Number of US doctorates awarded rise for sixth year, but growth slower, Info Brief, NSF* (pp. 10–308). Arlington, VA: National Science Foundation.

Frick, L. (2012). Pedagogies for creativity in science doctorates. In A. Lee & S. Danby (Eds.), *Reshaping doctoral education: International approaches and pedagogies* (pp. 113–127). London: Routledge.

Gardner, S. K. (Ed.). (2009). Special issue: The development of doctoral students – Phases of challenge and support. *ASHE Higher Education Report, 34*, 1–127.

Gill, P., & Burnard, P. (2008). The student–supervisor relationship in the PhD/Doctoral process. *British Journal of Nursing, 17*, 668–671.

Grant, B. (2003). Mapping the pleasures and risks of supervision. *Discourse: Studies in the Cultural Politics of Education*, *24*, 173–190. Retrieved from http://moodle.unitec.ac.nz/file.php/1606/Supervision/Barbara_Grants_resources_on_supervision/Grant_2003-Discourse.pdf

Grant, B. M. (2010). Negotiating the layered relations of supervision. In M. Walker & P. Thomson (Eds.), *The Routledge doctoral supervisor's companion: Supporting effective research in the social sciences* (pp. 88–105). London: Routledge.

Green, B. (2005). Unfinished business: Subjectivity and supervision. *Higher Education Research and Development, 24*, 151–163.

Gurr, G. (2001). Negotiating the "Rackety Bridge" – A dynamic model for aligning supervisory style with research student development. *Higher Education Research and Development, 21*, 81–92.

Halse, C., & Malfroy, J. (2010). Retheorizing doctoral supervision as professional work. *Studies in Higher Education, 35*, 79–92.

Hugo, W. (2009). Spiraling reference: A case study of apprenticeship into an academic community of practice. *South African Journal of Higher Education, 23*, 703–721.

Johansson, R. (2003). Case study methodology. Presentation at the International Conference "Methodologies in Housing Research" organized by the Royal Institute of Technology, Stockholm.

LaPidus, J. B. (1997). *Doctoral education: Preparing for the future*. Retrieved from http://CiteSeerxist.psu.edu

Lee, A., & Danby, S. (2012). *Reshaping doctoral education: International approaches and pedagogies: Framing doctoral pedagogy as design and action*. London: Routledge.

Lovitts, B. (2005). How to grade a dissertation. *Academe, 91*, 18–23.

Manathung, C. (2011). Moments of transculturation and assimilation: Post-colonial explorations of supervision and culture. *Innovations in Education and Teaching International, 48*, 367–376.

Nerad, M. (2009). *The context for increasing the quantity and assuring the quality of doctoral education in South Africa: What we know about the increase in PhD production and reform of doctoral education worldwide*. Paper presented at the ASSAf Panel on the PhD, Pretoria.

Pearson, M. (2005). Framing research on doctoral education in Australia in a global context. *Higher Education Research and Development, 24*, 119–134.

Pearson, M., & Brew, A. (2002). Research training and supervision development. *Studies in Higher Education, 57*, 135–150.

Phillips, E. M., & Puh, D. S. (2005). *How to get a PhD: A handbook for students and their supervisors*. Berkshire: Open University Press.

Rose, G. L. (2003). Enhancement of mentor selection using the ideal mentor scale. *Research in Higher Education, 44*, 473–494.

The South African Qualifications Authority. (2012). *Level descriptors for the South African National Qualifications Framework*. Retrieved from http://www.saqa.org.za/docs/misc/level_descriptors.pdf

Stake, R. (1998). Case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Strategies of quantitative enquiry* (pp. 86–109). Thousand Oaks, CA: Sage.

Waghid, Y. (2007). Education, responsibility and democratic justice: Cultivating friendship to alleviate some of the injustices on the African continent. *Educational Philosophy and Theory, 39*, 182–196.

Wisker, G. (2005). *The good supervisor*. Basingstoke: Palgrave Macmillan.

Wisker, G., Exley, K., Antoniou, M., & Ridley, P. (2008). *Working one-to-one with students. Supervising, coaching, mentoring and personal tutoring*. New York, NY: Routledge.