

# Chapter 4: Supervising Postgraduate Students in a Developing Country: Reflections on the Challenges

**Mpilo S. Mthembu**

**ORCID:** <https://orcid.org/0000-0002-0144-7643>

**Dennis N. Ocholla**

**ORCID:** <https://orcid.org/0000-0003-3860-1736>

## **Abstract**

Postgraduate supervision is a complex and lengthy process that requires a blend of essential skills, deep expertise, strong mentorship and careful strategic planning. This chapter examines the challenges faced by students, supervisors, and higher education institutions in the supervision of postgraduate students, particularly those pursuing master's and doctoral degrees in the developing countries like South Africa. The study is informed by personal reflections and a review of relevant literature guided by both the theory of Knowledge Creation and Bronfenbrenner's Ecological Systems Theory. Timely completion and graduation for postgraduate degrees, especially at the master's and doctoral levels, are often hindered by issues such as poor student quality, dependency, insufficient supervisory skills, high workload, the supervision approach employed, meeting the demands of the Council on Higher Education and the absence of clear policies and guidelines. Although the present chapter primarily focuses on developing countries, its implication extends beyond this context, as its findings have broad applicability in various aspects of research, teaching, and learning. Moreover, the insights derived from this chapter can contribute to a deeper understanding of postgraduate supervision trends and the overall progression of postgraduate education, not only in South Africa but also in other regions facing similar challenges.

**Keywords:** Research supervisor, postgraduate student, research development, challenges, higher education, CHE

## **Introduction and Background**

The process of postgraduate supervision is complex and time-intensive, requiring a diverse set of appropriate skills, deep subject understanding, a commitment to ethical standards, effective mentoring and thorough planning. Phatlane, Asonglefac and Sehoole (2023: 250) define supervision as the support and guidance provided by a designated supervisor to a postgraduate student, emphasising the supportive and educational aspects beyond just obtaining a degree.

Noticeably, the number of postgraduate enrollments has been steadily increasing in higher education institutions, both in South Africa and globally. This growth is highlighted by the CHE (2022a), which reports that South Africa produced 3,546 doctoral graduates, indicating significant progress toward the National Development Plan's (2012) goal of achieving 5,000 doctoral graduates annually by 2030. This increasing demand highlights the need for skilled supervisors who can effectively guide students through the complex academic and research processes involved in postgraduate studies while ensuring a timely completion and graduation.

Yet, successful postgraduate supervision in most higher learning institutions is often presented with numerous challenges as noted by various scholars. These challenges include academic misconduct such as data fabrication, falsification, and plagiarism; supervision approaches; power imbalances between supervisors and students; a lack of clear policies and guidelines; insufficient training and support for supervisors; poor communication between supervisors and students; inadequate supervision skills; frequent supervisor changes; and other specific issues (Bouter 2024; Odularu & Akande 2024; Saidi 2024; CHE 2022; CHE 2023; Paul, Olsen & Gul 2014; Mahlangu 2021).

As a result, postgraduate supervision is not only focused on ensuring degree completion but also on equipping students with the essential training, knowledge and skills needed to establish a strong foundation for their future academic careers.

This study explores the supervision of master's and doctoral programs in South Africa through focusing on the challenges encountered by students, supervisors and higher education institutions.

## **Rationale**

Successfully guiding and supporting postgraduate students to graduation is a demanding process that requires specialised expertise and a deep commitment to academic mentorship from supervisors. On the students' side, it is equally essential to demonstrate a high level of commitment, persistence and resilience throughout their postgraduate journey. Nevertheless, the journey seems to be presented with several challenges, including research misconduct such as data fabrication, falsification and plagiarism, which are unethical and constitute fraud (Horn 2017; Bouter 2024). Additionally, the supervision approach itself can present significant hurdles. The Council on Higher Education (CHE 2022a), as cited in CHE (2023), notes that the apprenticeship approach can create power imbalances between the supervisor and student, especially when cultural or background differences are present. While co-supervision is often viewed as an effective strategy, Paul, Olsen, and Gul (2014: 35) assert that it can sometimes result in reduced commitment from each co-supervisor, leading to issues like conflicting advice and a lack of unified academic direction.

In the context of South African universities, Odularu and Akande (2024: 250) identify additional challenges, including the absence of clear policies and guidelines, inadequate training and support for supervisors and ineffective communication between supervisors and students. Saidi (2024: 15) also highlights the issue of insufficient funding, which affects many postgraduate students, even those who meet the eligibility criteria. Mahlangu (2021) observed inadequate supervision skills, frequent changes of supervisors and the specific supervision approach used as prominent challenges in postgraduate supervision at an open distance institution. Moreover, the heavy burden of supervision, particularly in institutions that offer doctoral programs, remains a persistent problem. This chapter examines the challenges associated with supervising postgraduate students in higher education institutions within the context of South Africa as a developing nation. The focus is on the difficulties encountered by students, supervisors and institutions in achieving timely completion and graduation.

## **How Information was Gathered**

This chapter presents a comprehensive review of existing literature on the challenges faced in supervising postgraduate students within South African higher education institutions. The discussion highlights the obstacles encountered by students, supervisors and institutions in ensuring timely completion and gradu-

ation. A wide range of scholarly sources including books, book chapters, journal articles, reports, reviews, and other relevant print and digital materials were meticulously examined for this traditional/narrative literature review.

Additionally, the author's personal postgraduate journey and experiential knowledge have played a pivotal role in shaping this chapter. Insights gained from postgraduate studies at both the master's and doctoral levels have been instrumental in developing the necessary skills for scholarly writing, particularly in publishing journal articles and book chapters. This academic growth has been significantly influenced by supervisory support and mentorship, as well as active participation in collaborative activities such as conferences, webinars and professional development workshops. The next section discusses the employed theories.

## **Theoretical Perspective**

Typically, studies utilise existing theories, conceptual frameworks, or models to analyse and interpret the problem under investigation. In some cases, researchers may also develop their own conceptual frameworks to provide a structured approach to their study. However, in this chapter, two well-established theoretical perspectives have been adopted to examine the nature of postgraduate supervision in universities. Specifically, the study integrates the Theory of Knowledge Creation proposed by Nonaka and Takeuchi (1995) and Bronfenbrenner's Ecological Systems Theory (1977). These theories provide a comprehensive lens through which to explore and understand the complexities and dynamics of postgraduate supervision within higher education institutions in the South African context.

### ***Theory of Knowledge Creation (Nonaka and Takeuchi 1995)***

As highlighted above, one of the employed theories is the Theory of Knowledge Creation, originally developed by Nonaka and Takeuchi (1995). While this theoretical framework has traditionally been applied to understand how organisations generate and manage knowledge, this research adapts it to examine the postgraduate supervision process in higher education. Specifically, the study focuses on three of the four knowledge conversion modes identified by Nonaka and Takeuchi: socialisation, combination, and internalisation to explore how knowledge is shared and developed within research supervisory relationships.

The *first mode*, socialisation, involves the exchange of tacit knowledge through shared experiences and interpersonal interactions (Farnese *et al.* 2019). This form of knowledge transfer typically occurs when individuals learn informally by observing and engaging with others in their work environment. In the context of postgraduate supervision, as well as drawing from the author's prior experiences as both a student and a supervisor, the process of socialisation becomes apparent through the regular meetings between supervisors and their students.

These meetings serve as key platforms for discussing research progress, providing constructive feedback and addressing any challenges that may arise throughout the research journey. While these meetings can take place in both online and face-to-face settings, online interactions have become more prevalent. This shift is largely influenced by the dynamic nature of our technologically driven world, where continuous advancements and innovations shape the way academic engagement and mentorship occur. These interactions play a crucial role in shaping students' research skills and academic development. Furthermore, socialisation is a fundamental aspect of co-supervision, where junior or less experienced supervisors gain insight and expertise from their senior colleagues. Through direct engagement in the supervision process, they develop their supervisory capabilities and academic mentorship skills.

The *second mode*, combination, refers to the transformation of explicit knowledge through the integration of various information sources, often facilitated by technological tools (Farnese *et al.* 2019, citing Koh & Kim 2004). In the context of postgraduate supervision, this involves leveraging digital resources and virtual research environments to enhance knowledge sharing and collaboration. In this vein, supervisors play a pivotal role in encouraging students to utilise online tools such as institutional repositories, academic databases and learning management systems to access and manage research materials. For example, at the University of Zululand, students benefit from using digital platforms such as Unizulu Athens, institutional databases, Turnitin, and Moodle as provided by this institution. These resources are of paramount importance for students who may have limited physical access to university facilities, such as part-time or distance-learning students, as they provide opportunities for continuous learning and engagement beyond traditional face-to-face interactions.

Finally, the *third mode*, internalisation, describes the process through which individuals absorb explicit knowledge and integrate it into their personal understanding, thereby expanding their tacit knowledge base. This stage bridges

theoretical knowledge with real-world applications, allowing individuals to apply what they have learned in practical settings. As postulated by Phatlane, Asonglefac and Sehoole (2023), postgraduate supervision is not solely about guiding students to the completion of their degrees; it also encompasses academic mentorship, professional development and emotional support. The knowledge acquired during the supervision process ranging from research methodologies to problem-solving strategies becomes invaluable in students' future academic and professional endeavors. By internalising these experiences, students develop the confidence and expertise needed to contribute meaningfully to their fields.

By adapting Nonaka and Takeuchi's (1995) knowledge creation theory to the context of postgraduate supervision, this study highlights the ways in which knowledge is generated, transferred, and internalised within higher education. The interplay of socialisation, combination, and internalisation highlights the dynamic nature of knowledge creation in academia, ultimately contributing to the professional and intellectual growth of both students and supervisors.

### ***Bronfenbrenner's Ecological Systems Theory (1977)***

This study is grounded in Bronfenbrenner's Ecological Systems Theory (1977), which emphasizes that an individual's development is shaped by multiple interconnected environmental systems that interact and influence their growth (Bronfenbrenner 1977). This theory has significant implications across various disciplines including psychology, sociology and education, as it provides a comprehensive lens for examining the complex interactions between individuals and their environments. Bronfenbrenner identifies four systems that play a role in human development including the microsystem, mesosystem, exosystem and macrosystem. Each of these systems contributes to shaping an individual's experiences, behaviors and overall development. However, in the context of this research, each system is linked with the supervision of postgraduate students (both master's and doctoral level) within higher education institutions, particularly in South Africa as a developing nation. It is in this sense these systems have been crucial in explaining how various factors such as direct interactions between students and supervisors, institutional structures, and external influences impact the postgraduate research supervision process.

Bronfenbrenner (1977) describes the microsystem as a system encompassing the structured activities, roles as well as the social interactions that an

individual directly experiences within a specific, face-to-face environment. In the context of postgraduate supervision, the microsystem can be viewed as the direct and dynamic relationship between the supervisor and the student. This relationship is fundamental in creating a conducive and supportive academic atmosphere that fosters intellectual growth, guidance and mentorship. Again, the effectiveness of this system determines how well a student is supported by navigating the research process, developing critical thinking skills and ultimately achieving academic success. The mesosystem refers to the interconnections and interactions between two or more settings that are significant to an individual's development (Bronfenbrenner 1977). Examples include the connections between home and school or between school and the workplace. In postgraduate supervision, the mesosystem can be understood as the collaborative engagement between the student, the supervisor, and faculty members, all of whom play a pivotal role in shaping the research experience. Furthermore, this system extends to include institutional structures and policies that guide the supervision process. For instance, institutional policies on research ethics and funding allocations significantly influence both the student's academic journey and the supervisor's approach. The alignment between these elements ensures that postgraduate students receive comprehensive support that enhances their research productivity.

In terms of the exosystem, Bronfenbrenner (1977), outlines that this system encompasses external social systems and institutional structures that indirectly impact an individual's development, even if the individual is not directly involved in these systems. Within the context of postgraduate supervision, a supervisor's external work commitments such as stress can influence the availability and quality of supervision provided to students. Additionally, university regulations regarding research clearance, ethical approval and dissertation submission timelines shape the overall postgraduate experience. Moreover, supervisors also play a critical role in exposing students to scholarly networks by encouraging participation in academic conferences, workshops, and seminars at both national and international levels. Such engagements not only keep students updated on emerging research trends but also strengthen their academic and professional competencies. The macro-system, of which is the broadest level in Bronfenbrenner's (1977) ecological model, encompasses the overarching cultural, societal and institutional influences that shape the micro, meso, and ecosystems. In the realm of postgraduate supervision, this system includes national and institutional policies regarding research funding, agreements such as memoranda of understanding between students and

supervisors and access to critical research resources such as academic databases and laboratory facilities. Thus, a well-structured macro-system ensures that postgraduate researchers have access to the necessary resources and an enabling environment to successfully complete their studies.

Through examining postgraduate supervision through Bronfenbrenner's ecological systems theory, it becomes evident that supervision is influenced by a complex interplay of interpersonal relationships, institutional frameworks and broader societal structures.

## **Reflections and Challenges**

This section covers the author's reflections and reviews of relevant literature, offering insights from the perspectives of students, supervisors and institutions. It explores the challenges faced by each group, highlighting the issues for a deeper understanding of postgraduate supervision.

### **Students' Perspectives**

Guiding students to graduation is a complex process that operates at the institutional, faculty, and departmental levels, requiring substantial commitment from both supervisors and students, predominantly students as master's and PhD research projects are mostly conducted independently. Notably, a successful supervision process is often anchored by the development of a strong and positive working relationship between the supervisor and the student (Ocholla 2021; Vereijken *et al.* 2018; Tsampiras 2017). It is observed that this relationship is typically formalised through a written agreement, commonly referred to as a Memorandum of Understanding (MOU) in many institutions, which outlines the expectations, roles, and responsibilities of both parties (supervisor and supervisee) throughout the supervision process. In this vein, it is crucial that both the supervisor and the student thoroughly read and understand the terms of the MOU before agreeing to them. However, it is often observed that this agreement is signed without careful consideration, leading to various challenges during the supervision process. For instance, many students do not fully comprehend their responsibilities in the research process, leading to issues such as expecting to be constantly reminded about their work, lack of commitment, a lack of mutual respect, failing to meet deadlines, engaging in substance abuse, or exhibiting behavioural problems. It is therefore critical to note that, such challenges can significantly hinder timely graduation, highlighting a critical

issue within many higher education institutions that needs to be addressed.

Another pressing concern relates to the issue of producing poorly-prepared students. Often, these students are perceived as products of inadequate supervision, guidance and support during their research projects. Additionally, this challenge is closely linked to the shortage of qualified academic staff who possess the necessary expertise to supervise students, predominantly doctoral students in many universities. However, it is important to acknowledge that poor quality students are not always exclusively the result of inadequate supervision. In some instances, students themselves contribute to their own academic struggles due to factors such as a lack of commitment, insufficient research skills, or personal challenges that hinder their progress. For instance, some students may lack the motivation to engage in independent reading or resist participating in developmental opportunities provided by their institutions, such as workshops, seminars and webinars organised at the institutional, faculty or departmental levels. This observation emphasises the necessity for postgraduate supervisors to foster greater independence and autonomy among students. Encouraging students to undertake research independently and autonomously is crucial, as it plays a significant role in helping them acquire the necessary skills and competencies needed for their academic and professional growth. Despite this, many students tend to rely heavily on their research supervisors, expecting to be spoon-fed rather than taking responsibility for their own learning and development. Again, students sometimes lose momentum of which could be closely related to the observation made by Saidi (2024: 15) that financial resources are often insufficient to support all qualified postgraduate students, even those who meet the eligibility criteria.

## **Supervisors' Perspectives**

Research supervisors, as the primary drivers of research projects, often encounter a range of challenges within universities, and the universities of focus in the current study are no exception. These challenges include a lack of appropriate supervisory skills, an overwhelming workload, and the methods employed in the supervision process. Specifically, in terms of supervisory skills, it has been observed that a significant number of supervisors, particularly in doctoral programs, are inadequately equipped with the necessary skills. As reported by Odularu and Akande (2024: 265) one of the significant issues in postgraduate supervision is the inadequate competence of supervisors, coupled with a lack of adherence to professional ethics.

Similarly, Mahlangu's (2021) study found insufficient supervisory skills, frequent supervisor changes and the choice of an appropriate supervision approach to be the main challenges in postgraduate supervision. These deficiencies reflect a broader concern that ethical conduct and the practice of research serve as the cornerstone for every research undertaking within a department, faculty or institution. This deficiency can lead to delays in guiding and supporting students toward graduation, ultimately resulting in graduates of lower quality. To address these issues, many universities organise developmental workshops, conferences, seminars, and webinars aimed at enhancing the skills of their staff. Participation in these research-related activities plays a crucial role in capacitating supervisors with necessary capabilities, ensuring that they remain at the forefront of their respective fields and are better positioned to guide their students effectively. Nevertheless, their effectiveness can never be guaranteed as a result that some staff members are reluctant to engage in such professional development opportunities, which can hinder the overall effectiveness of these initiatives. It is also assumed that some academic staff members, particularly supervisors, occasionally participate in these activities primarily to enhance their professional profiles and get promotion.

On the other hand, despite the deficiency in supervisory skills, many supervisors are overwhelmed by excessive workloads, which makes it difficult for them to balance all the key performance areas (KPAs) required by the university, including research. For instance, some supervisors are responsible for overseeing many students, creating a bottleneck that delays student graduations. Additionally, some supervisors are burdened with heavy teaching responsibilities, such as teaching more than three modules per semester, while simultaneously supervising numerous students. These challenges are particularly common among new or emerging researchers, who may find it difficult to quickly advance and establish themselves in the research field due to these overwhelming demands. This imbalance between teaching, supervision, and other academic responsibilities can hinder their professional growth and development, making it harder for them to contribute effectively to both research and the academic community.

An approach employed by supervisors in their supervision is observed to be also problematic. For example, co-supervision is often believed to be an effective approach to successful supervision, however, Paul, Olsen and Gul (2014: 35) discourage it as observing that it may sometimes result in reduced commitment from each co-supervisor compared to scenarios where only one supervisor is involved. The authors believe such method of supervision can lead

to a diffusion of responsibility, conflicting advice, and a lack of a unified academic perspective, potentially causing students to manipulate one supervisor against the other to avoid following advice they may not want to accept. However, Fragouli (2021: 4) and Ngulube (2021) argue that co-supervision is especially beneficial as it provides access to diverse expertise, allowing less experienced supervisors to learn from the guidance of more seasoned colleagues. An employed approach of supervising students is a big determinant if the whole supervision process will be a success on ideal time or not. On this note, it is recommended that supervisors employ more than one approach in supervising their students.

Paul, Olson and Gul (2014), Bourner and Hughes (1991), Fragouli (2024), and Ngulube (2021) attest to the value of using collaborative tools like Google Docs, Email, Microsoft Teams, WhatsApp, Zoom as well as approaches such as co-supervision, training workshops, feedback mechanisms and other supportive strategies in supervising postgraduate students. Employing more than one approach significantly helps in accommodating different students learning styles. Another complementary element to the employment of different supervision approaches is to have good strategic planning, so as to address what seems problematic for supervisors. Creating a well-structured plan and adhering to it is a significant challenge for many supervisors. And students are no exception to this struggle. Yet, handling the intricacies of the supervisory process requires creating a proper work plan to support the entire process. Even the best-laid plans fall flat without a strong plan, which causes delays and makes it harder to help students finish their research.

Significant to note is that an approach chosen by a supervisor is a critical factor in determining whether the supervision process will be successful and completed within an ideal timeframe. So, it is recommended that supervisors adopt multiple approaches to supervising their students. So doing, they can better accommodate the diverse learning styles of their students, which can enhance the effectiveness of the supervision process. In addition, supervisors should also engage in strategic planning with their students.

## **Institutional Perspective**

Achieving research throughput, typically measured by the graduation of postgraduate students, is a key responsibility of universities. This expectation is driven by mandates from the Council on Higher Education (CHE), which requires universities to produce a steady stream of postgraduate graduates. For

example, the CHE (2022a) reported the National Development Plan's (2012) goal of achieving 5,000 doctoral graduates annually by 2030. Thus, universities pass this responsibility down to their faculties, and ultimately, it is the departments that bear the primary responsibility for supervising students to successful completion. This process can be associated to peeling an onion, with different layers representing the various levels of accountability, from the CHE to the university, from the university to its faculties, and finally, from the faculties to the departments. While this structure aims to ensure that universities meet their graduation targets, it also comes with both benefits and shortfalls. On the positive side, such demands can lead to a higher number of students graduating within the expected timeframe, enhancing the institution's reputation and meeting CHE's requirements.

Conversely, the potential downfall lies with the pressure to graduate students which may lead to the production of graduates who are of lower quality. Similar findings are also evident in the study of Mahlangu (2021). Additionally, it can place a heavy burden on academic staff, who may find themselves overwhelmed by the large number of postgraduate students they are required to supervise while also having to take the responsibilities of teaching and learning as well as the services to the university. The demand's double character highlights how difficult it is to strike a balance between quantity and quality in higher education. Again, such could sometimes lead to research being exposed to various forms of misconduct, including data fabrication, falsification or plagiarism (Horn 2023: 72).

Again, most higher education institutions seem to be struggling with the implementation and effectiveness of policies and guidelines intended to facilitate research activities. Findings of similar nature are evident in Odularu and Akande (2024) study. While some institutions do have these policies in place, they often fail to utilise them effectively or to their full potential. In practice, certain policies are enforced, while others are neglected or inconsistently applied. For example, based on the author's experience, the policies governing the appointment of research supervisors are not always adhered to rigorously. This inconsistency in policy application can weaken the research process, leading to challenges in maintaining standards and ensuring that supervisory roles are assigned appropriately.

## **Conclusions**

It can be concluded that successful supervision of postgraduate students is a

multifaceted process that necessitates a combination of essential competencies, thoughtful and strategic planning, strong mentorship, adherence to ethical research practices and the establishment of a good and collaborative relationship between supervisors and students.

The ability of postgraduate students, particularly those pursuing master's and doctoral degrees, to complete their studies within the expected timeframe is often compromised by several challenges.

These include inadequate academic preparedness or research skills among students, excessive reliance on supervisors for guidance, a lack of sufficient supervisory expertise, overwhelming workloads for supervisors, the effectiveness of the chosen supervision approach as well as institutional expectations, such as compliance with the requirements set forth by the Council on Higher Education.

Furthermore, the lack of clearly defined policies and guidelines heightens these challenges, creating obstacles to the establishment of a well-structured and efficient supervision process that facilitates the timely completion and graduation of postgraduate students. Even when institutional policies and guidelines are in place, their effectiveness is often hindered by some inconsistencies in their application. For example, some university structures may deliberately overlook these regulations rather than implementing them appropriately resulting to unnecessary delays on students' progress, increased frustration and prolonged completion times for their research projects.

## **Recommendations**

Considering the numerous challenges that hinder the effective supervision of postgraduate students in universities, it is crucial to transform these obstacles into opportunities for improvement. This can be achieved by fostering a culture of independent learning and research, enabling students to develop critical thinking and problem-solving skills that reduce excessive reliance on their supervisors. Additionally, ensuring that students adhere to ethical research practices is essential for maintaining academic integrity and producing high quality research in an institution. Addressing gaps in supervisory skills is also vital, which can be accomplished through continuous professional development, participation in training workshops and engagement in other development activities and learning initiatives. Moreover, the implementation of well-structured and effective supervision strategies is necessary to mitigate these challenges. In addition, universities could provide students with the enough necessary resour-

ces and support systems to successfully complete their research projects within the expected timeframe, ultimately improving postgraduate success rates.

### **Limitations/ Gaps**

This chapter has primarily concentrated on developing countries, with a specific focus to South Africa. Future research could expand its scope to encompass the entire African continent, providing a more comprehensive understanding of postgraduate supervision across diverse educational systems and institutional frameworks. Such studies could offer valuable insights into common challenges faced by universities in different African countries and identify standardised strategies and best practices that contribute to the successful supervision of postgraduate students. By examining a broader range of institutions, future research could help establish effective supervision models that not only facilitate timely completion of postgraduate degrees but also enhance the overall academic reputation and credibility of universities within the region.

### **Implications**

While this chapter primarily examines issues related to postgraduate supervision in developing countries, its relevance extends far beyond this specific context. The findings of this chapter have broad implications for research, teaching, and learning, offering valuable insights that can inform best practices across various academic settings. Furthermore, the chapter contributes to a more comprehensive understanding of postgraduate supervision trends and the overall development of postgraduate education, not only within South Africa but also in other regions experiencing comparable challenges.

### **References**

- Bourner, T. & M. Hughes 1991. Joint Supervision of Research Degrees: Second Thoughts. *Higher Education Review* 24,1: 21.  
<https://doi.org/10.1080/08989621.2023.2185141> PMID:36866641
- Bouter, L. 2024. Research Misconduct and Questionable Research Practices form a Continuum. *Accountability in Research* 31,8: 1255 - 1259.
- Bronfenbrenner, U. 1977. Toward an Experimental Ecology of Human Development. *American Psychologist* 32,7: 513 - 531.

<https://doi.org/10.1037/0003-066X.32.7.513>

- Council on Higher Education (CHE) 2022a. *VitalStats 2020*. Pretoria: CHE.
- Council on Higher Education (CHE) 2023. Models of Postgraduate Supervision and the Need for a Research-rich Culture. Available at:  
[Models%20PG%20Supervision\\_Final%2005082023%20\[23\]\[12\].cleaned%20\(2\).pdf](#)
- Farnese, M.L., B. Barbieri, A. Chirumbolo & G. Patriotta 2019. Managing Knowledge in Organisations: A Nonaka's SECI Model Operationalisation. *Frontiers in Psychology* 10: 506330.  
<https://doi.org/10.3389/fpsyg.2019.02730> PMID:31920792; PMCid:PMC6914727
- Fragouli, E. 2021. Postgraduate Supervision: A Practical Reflection on How to Support Students' Engagement. *International Journal of Higher Education Management* 7,2. <https://doi.org/10.24052/IJHEM/V07N02/ART-1>
- Horn, L. 2017. Promoting Responsible Research Conduct: A South African Perspective. *Journal of Academic Ethics* 15,1: 59 - 72.  
<https://doi.org/10.1007/s10805-016-9272-8>
- Koh, J. & Y.G. Kim 2004. Knowledge Sharing in Virtual Communities: An e-Business Perspective. *Expert Systems with Applications* 26,2: 155 - 166.  
[https://doi.org/10.1016/S0957-4174\(03\)00116-7](https://doi.org/10.1016/S0957-4174(03)00116-7)
- Lessing, A.C. 2011. The Role of the Supervisor in the Supervisory Process. *South African Journal of Higher Education* 25,5: 921 - 936.
- Mahlangu, V.P. 2021. Exploring Challenges of Supervising Postgraduate Students in Open Distance Learning in Higher Education Settings. *Bulgarian Comparative Education Society*.
- Moore, M.G. 2013. The Theory of Transactional Distance. In Moore, M.G. & W.G. Anderson (eds.): *Handbook of Distance Education*. London & New York: Routledge. <https://doi.org/10.4324/9780203803738.ch5>  
<https://doi.org/10.4324/9780203803738>
- Ngulube, P. (ed.). 2021. *Handbook of Research on Mixed Methods Research in Information Science*. IGI Global. <https://doi.org/10.4018/978-1-7998-8844-4>
- Nonaka I. & H. Takeuchi 1995. *The Knowledge-Creating Company*. Oxford: Oxford University Press.  
<https://doi.org/10.1093/oso/9780195092691.001.0001>
- Ocholla, D.N. 2021. Echoes down the Corridor: Experiences and Perspectives of Library and Information Science Education (LISE) during COVID-19 through an African Lens. *Library Management* 42,4/5: 305 - 321.

<https://doi.org/10.1108/LM-02-2021-0016>

- Odularu, O.I. & J.O. Akande 2024. Reflection of Experiences with Academic Supervisors, Supervisees and Issues of Power. *South African Journal of Higher Education* 38,2: 254 - 273. <https://doi.org/10.20853/38-2-5706>
- Paul, P., J.K. Olson & R.B. Gul 2014. Co-supervision of Doctoral Students: Enhancing the Learning Experience. *International Journal of Nursing Education Scholarship* 11,1: 31 - 38. <https://doi.org/10.1515/ijnes-2012-0004> PMID:24615490
- Phatlane, R., B. Asonglefac & C. Schoole 2023. Perspective Chapter: Analyses of Literature on the Lived-Experiences of International Post-Graduate Students during COVID-19. In Waller, S. & L. Waller (eds.): *Higher Education - Reflections from the Field-Volume 1*. IntechOpen. <https://doi.org/10.5772/intechopen.110152>
- South African Government 2012. National Development Plan 2030. Available at: <https://www.nationalplanningcommission.org.za/assets/Documents/ndp-2030-our-future-make-it-work.pdf>
- Tsampiras, C. 2017. Chaos, Complexity, and Contexts. *Strengthening Post-graduate Supervision* 11, 31. <https://doi.org/10.18820/9781928357322/03>
- Vereijken, M.W., R.M. van der Rijst, J.H. van Driel & F.W. Dekker 2018. Novice Supervisors' Practices and Dilemmatic Space in Supervision of Student Research Projects. *Teaching in Higher Education* 23,4: 522 - 542. <https://doi.org/10.1080/13562517.2017.1414791>

Mpilo S. Mthembu  
Department of Information Studies  
University of Zululand  
South Africa  
[mthembusm@unizulu.ac.za](mailto:mthembusm@unizulu.ac.za)

Dennis N. Ocholla  
Department of Information Studies  
University of Zululand  
South Africa  
[ochollad@unizulu.ac.za](mailto:ochollad@unizulu.ac.za)