Doctoral Education in Context

Perspectives from Africa

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CHAPTER 13

Supervisory practices in the School of Therapeutic Sciences of the University of the Witwatersrand

Ané Orchard

South Africa has a population of 62 million. The country has 26 public universities with a total enrolment of 1.1 million students. Doctoral enrolments in South Africa have increased from 9 994 in 2008 to 23 588 in 2020 (CHE Vitalstats). Between 2000 and 2018, a total of 32 025 doctoral students graduated at South African universities. Doctoral graduates increased from 972 in 2000 to 3 339 in 2019 (SciSTIP Tracer Study).

The **University of the Witwatersrand** (Wits) is located on five campuses in Johannesburg. It became an independent university in 1922, tracing its origins to the South African School of Mines established in 1896. Wits has produced four Nobel Prize recipients, including Nelson Mandela who was a law student at Wits from 1947-1949. The university has five faculties and 33 schools offering over 3 000 courses. In 2021 it had 1 174 full-time academic staff members and 42 175 students, including 2 470 doctoral candidates.

1. Introduction

Supervisors are mentors and critical mediators for postgraduate (PG) candidates (Kamler, 2008; Maxwell & Smyth, 2011). However, the supervision journey may often be a challenging, lonely, uncertain and overwhelming one (Green, 2005; Wisker et al., 2007; Friedrich-Nel & Mackinnon, 2013; Cornér et al., 2019). Various publications exist on recommendations for what is expected of postgraduate candidates, the postgraduate degree experience, the different

stages a postgraduate candidate undergoes, and the support that supervisors can offer their candidates (Vilkinas, 2002; Aitchison et al., 2012; Bruce & Stoodley, 2013; Pyhältö et al., 2015). However, there is not as much done to help novice supervisors deal with their own internal journey of challenges and uncertainty they may experience, or when they could achieve a level of confidence of more experienced supervisors (Green, 2005; Friedrich-Nel & Mackinnon, 2013; Cornér et al., 2019). Is a postgraduate degree a sufficient requirement for 'qualifying' to supervise a postgraduate? Especially considering that supervision of postgraduate candidates is accepted as a specialized skill (Chikte & Chabilall, 2016), when is one ready to be called a specialist in supervision? Is it the experience or a qualification that helps define this specialty? Does the experience or qualification affect one's style of supervision?

There are various styles (the way one chooses to interact with the candidate during supervision) and models (master–apprentice, co-supervision, team supervision, project supervision) of supervision (Bitzer & Albertyn, 2011; Grossman & Crowther, 2015). The supervision style and model can impact on the supervisor's experience, goals, expectations, and workload (Bruce & Stoodley, 2013), which can translate into the experience and mentoring the postgraduate candidate receives (Bruce & Stoodley, 2013). Based on my readings, supervisors seem to take on multiple roles. They must be able to motivate their candidates, demonstrate empathy and understanding, and establish clear boundaries regarding their supportive capabilities, and at the same time, they are expected to serve as guides and mentors, offering timely and ongoing feedback (Chikte & Chabilall, 2016). It is no wonder the journey is overwhelming.

At the start of 2020, I was feeling quite uncertain about my ability to supervise postgraduate candidates. I had observed many fellow researchers/supervisors, and they appeared so capable and confident. When did they become so confident? At the time of writing this chapter (2021), my experience was mainly around supervising Honours research projects, and co-supervising master's, which appears to be a popular route for novice supervisors to undertake (Grossman & Crowther, 2015). However, I had hoped that with time I would become more comfortable and experienced by observing the supervisory practices of my colleagues and drawing from the supervision I had received, and I would inevitably be ready to supervise on my own. As a novice supervisor I had so much uncertainty and wondered if it was normal, thus I sought to ask the School of Therapeutic Sciences to answer a few of my own questions.

2. Rationale

In this study, I wanted to determine the supervision styles and models prevalent in the School of Therapeutic Sciences and how those that supervise have come to supervise the way they do.

As a novice supervisor myself, I have found that there is a lot of uncertainty and feelings of unpreparedness (Vereijken et al., 2018) and my mind has been plagued with questions such as 'Will I figure out how to be comfortable in my supervision? Should I work in a team or co-supervise? Should I attend more courses?' It is beneficial for a novice to be supported and to explore these different approaches and develop their own supervisory pedagogy (Vereijken et al., 2018). Thus, this study was designed for me to explore the different options, and from these findings I could further reflect on what I have learned and decide on how best to advance with my own supervision.

3. Research question

What influences supervision knowledge and practice at the School of Therapeutic Sciences?

4. Aim

I aimed to survey the active postgraduate supervisors in the School of Therapeutic Sciences (part of the Faculty of Health Sciences at the University of the Witwatersrand) on their supervisory practices and readiness to supervise.

5. Objectives

To achieve my aim, the following objectives were set:

5.1. To compare the supervisory experience of the participants in the School of Therapeutic Sciences with their readiness/confidence to supervise.
5.2. To investigate the supervisory practices of the participants and compare this to the training received and experience.

6. Study design

Data collection was through a self-administered cross-sectional survey. The survey was designed by myself based on observations I had made from my own PG supervision and the courses I had attended. The survey was pilot tested by three colleagues before being distributed. The survey, consisting of 30 fields, was sent out via email to the School of Therapeutic Sciences and was available for a week.

7. Study site

The study was carried out at the University of the Witwatersrand, School of Therapeutic Sciences.

8. Study sample

A convenience sampling method was employed for the active postgraduate supervisors in the School of Therapeutic Sciences. The School of Therapeutic Sciences contains 382 members consisting of technicians, secretaries, lab assistants, support staff, lecturers, senior lecturers, associated professors and personal professors, and post-docs. Thus, not everyone on the available list of emails qualified as a potential supervisor, and not all lecturers supervise. Thus, I am unable to calculate the response rate. Reminders were sent three times.

9. Methods

The School of Therapeutic Sciences was asked via email to participate in the survey and complete the questionnaire. The email provided information about the study, a consent statement, and a link to an anonymous survey on REDCAP©. The survey incorporated both qualitative and quantitative questions. For questions where participants selected 'other', branched logic was incorporated.

Inclusion criteria:

- Only active postgraduate supervisors with a master's or PhD degree.
- Only active postgraduate supervisors of master's and PhD candidates were included (master's supervisors were included due to an expected small sample size due to size of the school).

Exclusion criteria:

- Supervisors that were not actively supervising.
- Lecturers that were not yet supervising. (A stop order was included in the survey for those that were not supervising).

10. Data analysis

The questionnaire was analysed using descriptive statistics. The t-test (comparison continuous and categorical variables) and *p*-value were calculated. The data were expressed as percentages in pie charts and bar graphs.

11. Results and discussion

Thirty-one (31) respondents participated in the survey, 2 were excluded by the stop order as they were not actively supervising. Thus, 29 participants were able to complete the survey.

11.1 Section A: Demographics

The first part of the survey contained demographic information related to rank and supervision of the participants. The participants were asked to select their levels as a lecturer (rank) and their highest degree. The majority of respondents were junior lecturers, followed by senior lecturers, and the smallest groups were the associated and personal professors. Each of the professors had a PhD, 19% of the junior lecturers had a PhD (and 19% were in the process of obtaining a PhD), and 75% of the senior lecturers had a PhD.

The years of experience between the ranks were reviewed and as can be expected, the professors had the highest number of years of experience, with the maximum being 25 years. The lowest number of years for postgraduate supervision experience was amongst the junior lecturers. All the associated and personal professors from the survey had supervised more than 20 PG candidates and were supervising both master's and PhD candidates. Based on the years of experience between the two, there is a *p*-value of 0.69, indicating no significant difference between the years of experience.

The years of experience between those classified junior lecturers and seniors has a *p*-value of 0.012, which indicates a statistical significance in the difference in years of experience. The *p*-value between the associated professors and senior lecturers is 0.399, which is not a statistically significant difference. Reasons

may be attributed to the outliers in terms of years of supervision amongst the senior lecturer group and the professor groups. This was an interesting observation for me as I expected that all senior lecturers would have already been PhD holders. It was also interesting for me to notice an associate professor with 9 years of experience, although it is normal to on average reach a professorship in 10 years (UCT Newsroom, 2016). I was curious about the supervision model of this participant and saw that this participant preferred working in a team. There were quite a few supervisors with more years of experience, however, who were still senior lecturers, which highlights to me that there is a lot that may be gained from working in a team. It appears there is more opportunity for exposure to supervising PG candidates.

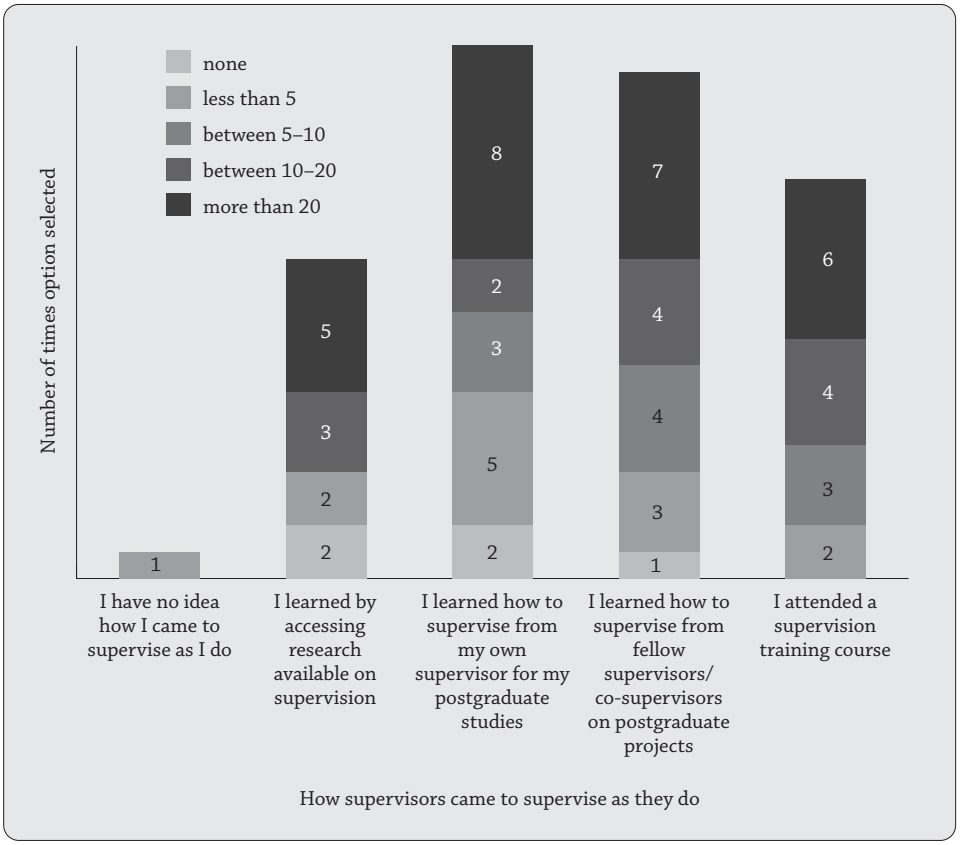
Because experience based on lecturer rank was not statistically significant, comparison was then done based on the number of PG candidates that had been supervised by the participants with the years of experience, and more statistically different *p*-values were calculated. Based on these statistics, from this group of participants, experience is better defined by number of PG candidates supervised, as opposed to the participant's rank. What I can then draw from these findings is that the years of supervision and number of PG candidates supervised is what contributes towards experience, despite one's ranking within the university.

11.2 Section B: Training, confidence, and readiness

Section B of the questionnaire focused on identifying how the participants came to supervise as they do (Figure 1) and their readiness for supervision. Participants were grouped according to the amount of PG candidates they had supervised/experience.

It is evident that the majority (20 participants) came to supervise as they do based on how they were supervised as postgraduate candidates. This is closely followed by observing how a colleague supervises. Interpretivist ontology conceives of our knowledge and meaning as constructed through social interaction (Vanson, 2014). Vygotskian thinking emphasises social involvement via communication, regarding social interactions and relationships between an individual with more knowledge and an individual with less knowledge as what constructs knowledge (Packer & Goicoechea, 2000; Lantolf & Poehner, 2008). The results presented in Figure 1, participants learning from their own supervisor, colleagues and training courses, would appear to support the interpretation that participants learned most of what they know through social learning.

Figure 1: Summary of how participants came to supervise as they do



While a formal qualification for supervision is not required at my university to be eligible to supervise, training opportunities are available, such as in-house workshops or online certification courses for supervisors. The most attended training course was the Wits Centre of Learning and Teaching Development (CLTD) course, followed by the Faculty of Health Sciences course. This is a three-day course I had attended in 2018. It would appear that supervisors are more willing to attend an 'in-house' course than one offered by another university, according to my study.

The next question asked the participants to select the option that would best describe their readiness/confidence to supervise postgraduate candidates. The responses were compared to years of experience, the number of postgraduate candidates supervised and if a course had been attended (Figure 2). Two groups

emerged, those newer to supervising (thus with 5 years or less of experience), and those with more than 5 years of experience.

None of the participants selected the option that they were 'not' ready to supervise. For the participants that are new to supervision, there is a variation in their readiness and confidence, with no relation to years of experience, number of PG projects supervised, and no relation to a course they may have attended. For the group of participants with more than 5 years of experience, the majority (89%) were confident in their ability to supervise, and 11% felt they were ready to supervise as first supervisor. Thus, it predominantly shows that confidence comes with an increase in years of experience and number of PG candidates supervised.

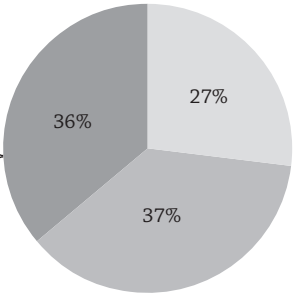
A finding that did not make sense to me is that several participants with less than 5 years of experience and had not attended any course had some level of confidence. It brings to mind the quote often attributed to Mark Twain "*To succeed in life, you need two things: ignorance and confidence*" and made me wonder whether the lack of a course may allow for the blissful ignorance of not yet knowing what we don't know, leading to confidence. An interesting subject for further study.

Readiness of all participants was compared to the way the participant came to supervise, and no correlation could be identified. When comparing the readiness of the participants to their supervision model, it could be seen that those with confidence in their supervision abilities predominantly supervised with a co-supervisor. This finding was not surprising to me, as supervising with co-supervisors or as a team appears to have many benefits (Hyrkäs et al., 2002; McCallin & Nayar, 2012), especially considering that it provides an opportunity for supervisors to learn from each other, address challenges together, increases confidence and strengthens one's own professional identity (Hyrkäs et al., 2002).

Overall, section B addressed my first objective. Readiness and confidence appear to mostly be related to experience in years, number of postgraduate candidates supervised, and supervising with peers. My advice to novice supervisors is to not be too hard on themselves. That confidence will come with time and experience, and working with a co-supervisor or in a team may be beneficial to their growth in confidence. Taking part in supervision courses can also help with confidence.

Figure 2: Readiness of participants for supervising PG candidates

Less than and equal to 5 years of supervision experience			
Years of supervision experience	**No. of PG projects supervised**	**Postgraduate supervision course**	**Readiness for supervision**
0	None		I am confident in my ability to supervise postgraduate students
0	None		I feel I may be ready to supervise postgraduate students as first supervisor
1	Less than 5		I am confident in my ability to supervise postgraduate students
1	Less than 5		I feel I may be ready to supervise postgraduate students as first supervisor
2	Less than 5		
2	Less than 5		I do not feel ready to supervise postgraduate students as first supervisor
3	Less than 5	CLTD*	
4	Less than 5		
4	Between 5-10	CLTD	I am confident in my ability to supervise postgraduate students
5	Less than 5	CLTD	
5	Between 5-10		I feel I may be ready to supervise postgraduate students as first supervisor

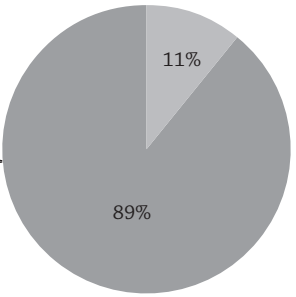


Readiness/confidence of supervisors with 5 or less years of experience

(continued on next page)

Figure 2: (continued)

More than 5 years of supervision experience			
Years of supervision experience	**No. of PG projects supervised**	**Postgraduate supervision course**	**Readiness for supervision**
7	Between 5-10	CLTD	I am confident in my ability to supervise postgraduate students
8	Between 5-10	DIES/ CREST	
8	Between 10-20	CLTD and FHS	
9	Between 5-10		
9	More than 20	FHS	
9	More than 20	FHS	
10	Between 10-20	CLTD	
10	Between 10-20		
12	Between 10-20	FHS	
12	More than 20	CLTD and FHS	
13	More than 20		
14	More than 20	CLTD	
15	More than 20		I feel I may be ready to supervise postgraduate students as first supervisor
16	Between 10-20	FHS	I am confident in my ability to supervise postgraduate students
20	More than 20	Facilitator from Stellenbosch university	
20	More than 20		I feel I may be ready to supervise postgraduate students as first supervisor
20	More than 20	CLTD	I am confident in my ability to supervise postgraduate students
25	More than 20		



Readiness/confidence of supervisors with more than 5 years of experience

**CLTD – Centre for Learning and Teaching Development Postgraduate Supervision Course (Wits), FHS – Faculty of Health Sciences Postgraduate Supervision Course (Wits)*

11.3 Section C: Supervision style

For this section, I aimed to investigate the supervision model of the participants. Co- supervision is preferred by 65% of participants. For their reasons for choosing their supervision model of preference, the data were grouped according to descriptions most suited to the participant's reason to provide a summary.

There is no supervision model gold standard, and if one delves into the reasons given by the participants, their reasons for choosing their preferred model are idiosyncratic (Hyrkäs et al., 2002; McCallin & Nayar, 2012), just as different supervisors have their own views on what it is to be a supervisor, and what they want out of supervision (Pearson & Brew, 2002; Bruce & Stoodley, 2013), they also know with whom they would want to supervise.

From this study and readings (McCallin & Nayar, 2012), I am personally quite keen on the co-supervision and team model of supervision as it does come with the benefit of different perspectives, strengths and learning from each other, offers more support, and assists with the workload and responsibilities. To avoid encountering the issues mentioned by those that preferred supervising alone (delayed input from other supervisors, being excluded, blurred roles), I would consider drawing up a screening document for prospective co-supervisors, to assess their ability to contribute to the community of practice. Another thing to consider though is not making the mistake of including a co-supervisor out of friendliness and familiarity in the office. I had experienced a friendly colleague that came across as being a potentially beneficial co-supervisor for an Honours project. Unfortunately, the colleague's contribution was painfully lacking, and I would not consider co-supervision with this colleague again. However, if I reflect on this, I cannot consider the experience as a waste of a project and time considering it was completed within a year. It was a small price to pay for learning the lesson of not professionally trusting a colleague based on being familiar in the workplace. Thus, I would recommend including a potential co-supervisor in smaller projects first as a trial run. It definitely comes down a lot to trust with team members (Robertson, 2017), and I value being conscious of the downsides and the screening of potential co-supervisors. So, to avoid future issues, a screening document and supervisor agreement form specifying responsibilities and duties will be used going forward.

My next question regarded supervision style which included determining whether supervisors encouraged their postgraduate candidates to work in teams, how often the supervisors provided feedback, when writing was encouraged, methods of providing feedback and how participants provided advice to

their candidates on their writing/concept. I also wanted to find out whether participants provided advice on time-management, scientific writing skills, and grammar. Lastly, participants' views on these subjects were compared to the participant's supervision model, highest degree, supervision experience (years and number of candidates), and how they came to their supervision practice. No trends could be identified.

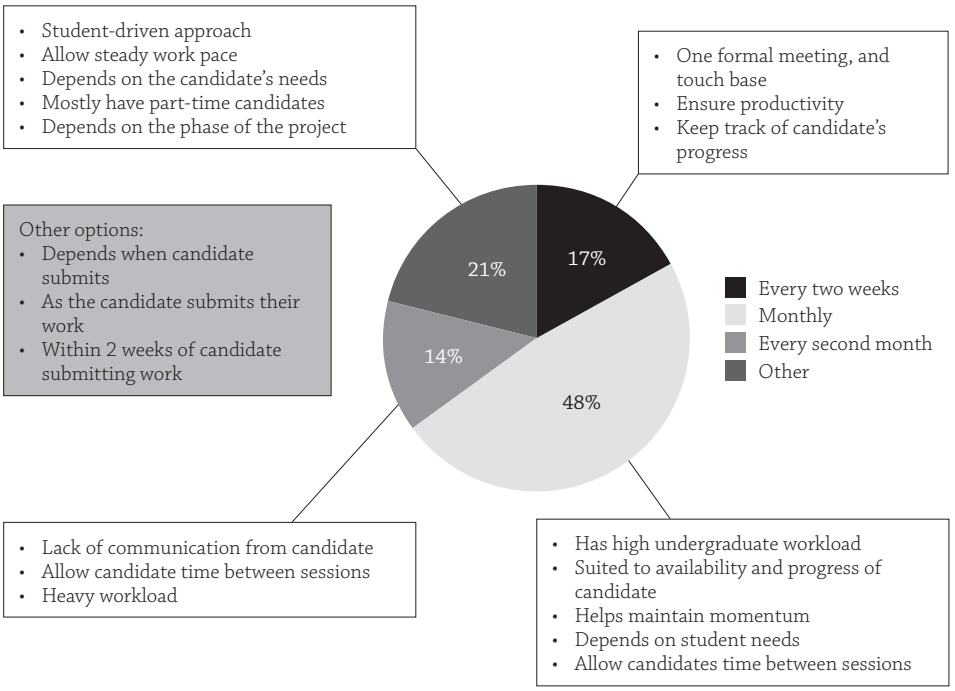
Based on my findings, 76% of participants encouraged their candidates to work together, and fostered a sense of community. This provides candidates with the opportunity to support each other, bounce ideas off each other and give each other different perspectives. It also allows the candidates opportunities to discuss different concepts with each other in a way they are unable to do with their supervisors (McKenna, 2017). This is something I would encourage amongst my candidates. I experienced this when I was doing my master's and found it beneficial. I lacked this opportunity during my PhD study as I was the only candidate at the time.

Considering that learning only happens as we write (Boser, 2020), it would be best to encourage writing in the process of study, which thankfully 100% of the participants encouraged of their postgraduate candidates. On one of the supervision courses I had attended, the concept of the internal conversation was brought to my consciousness: while we write, we may often have a conversation with ourselves where we anticipate objections and calls for greater clarity. I was initially oblivious to the fact that I had done this, however, thinking back to my PhD and any publication I write, that internal conversation was/is there! 'If I say this, would Prof. be fine with this?', 'Would this make sense to an external reviewer?', 'Oh, Prof. will probably ask me to elaborate on this point, so I had better do it now.' Writing encourages that internal conversation in the candidate. The sooner we can encourage our candidates to start writing and we provide feedback, the earlier they can be sensitized into considering the audience they are writing for as they write. The sooner the candidates work to 'answer' those internal voice question and conversations, redrafting may improve.

I found incorporating feedback using Socratic questioning (Frick et al., 2010) an extremely beneficial approach that I had learned in one of my courses. I had a conversation with one of my candidates where she was telling me how she was anticipating my questions, and how she was trying to answer them before submitting her draft. Thus, Socratic questioning seemed to also encourage the internal conversation. Early writing and timely feedback on drafts is encouraged (Postgrad.com, n.d.; Lee 2008)

The frequency of meetings and feedback may vary from taking place daily to once every six months and contributes towards the success of the candidate–supervisor relationship, which further promotes student resilience and satisfaction (Lee, 2008; Pyhältö et al., 2015; Cornér et al., 2017). In the School of Therapeutic Sciences, monthly meetings appeared to be the preferred frequency (Figure 3). A monthly meeting does seem a reasonable time for progress to be made by the candidate and allows the supervisor time to review the candidates submissions.

Figure 3: Frequency of feedback and meeting with postgraduate candidates, and reasons



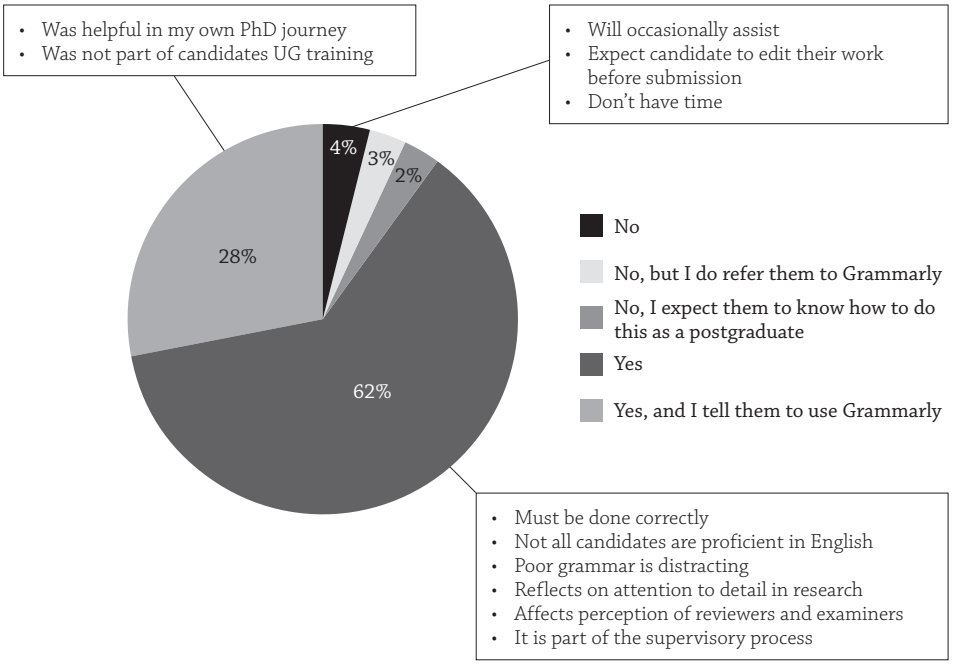
From my findings, it was evident that track changes and comments on the submitted draft, with a meeting to discuss the feedback, is the most practised form for providing feedback amongst the participants. No participant selected the options for: 'the candidate is told to rewrite the section (chapter/paragraph)' or 'face-to-face/online meetings only'. It's good to see that constructive feedback is the main method of feedback, and clearly tools such as track changes make this more possible.

Guidance on time management came through as something the majority of participants did, aligning with calls for supervisors to incorporate project management into their supervision practice (Vilkinas, 2002; Gatfield, 2005; Lee, 2008). Participants also predominantly guided their students in their scientific writing style. This is in line with 'good' supervisor practice which means involvement in the postgraduate candidate's scholarly writing (Gatfield, 2005; Lee, 2008; Hemer, 2012; Lee, 2018).

During a course I attended on postgraduate supervision, I was aback to learn that correcting candidate grammar is not encouraged. As a postgraduate candidate detailed attention was devoted to my grammar, thus I found this very difficult to accept. And it turns out 90% of the participants at the School of Therapeutic Sciences addressed grammar (Figure 4). A potential reason behind not correcting grammar is that it takes a lot of time. Even the student–supervisor agreement contract by the university stipulates that supervisors are not required to correct grammar. Having a history of research in the laboratory as I do, what I learned from my supervision was that grammar could be an indicator of attention to detail. Thus, poor grammar reflects badly on attention to detail in the lab. This is what was drilled into me as a postgraduate. Perhaps, it's only coincidence or confirmation bias, but I have noticed the negligence in the lab of a few candidates and students that do not pay attention to their writing grammar. I am still a novice supervisor and probably do not have enough exposure to draw strong conclusions that grammar negligence may equate to poor data collection. Considering that postgraduate candidates are becoming more diverse, having a student excellent at research in the laboratory but weaker on grammar, and vice versa, would not be unheard of. This would make for an interesting study.

The topic of grammar correcting has me conflicted, and I can only conclude that I need to find a balance. Going forward, I think my focus on grammar correcting should be in the beginning of the candidates writing process. When I would explain to the candidate why some attention needs to be given to grammar (adult learning theory states adults need to know the reason for doing something (Taylor & Hamdy 2013)), then do less editing the more they write. Emphasis can be placed on the importance of grammar in the beginning, then supervisors can refer students to grammar checkers or suggest that they have their work edited. The participants do at times also refer candidates for language editing or a library writing course, to an editor, or lend the candidate other resources. It is something that should be corrected and focused on by the candidate for their own growth in attention to detail. It should not affect the supervisor long term.

Figure 4: Whether participants provide feedback on the candidate's grammar and reasons



For this section, supervision style was compared to the participant's supervision models, highest degree, supervision experience (years and number of candidates), and how they came to their supervision practice. No trends were identified.

Overall, section C addresses my second objective. Supervisory style of the participants was investigated and compared to supervisor model preference, experience and how they came to their supervision practice. Neither training, model, nor experience influence the supervisory style, and it came down to each participants' preference. This aligns with social theory which states that learning is constructed and occurs individually and collectively (Dee et al., 2006).

Limitations

This study may not be generalizable across the school and the university due to the number of people that responded. The time the survey was available may have also been too short.

After analysis of the results, there were a few questions I could have added, and for demographics I should have added the question of how long since participants had completed their PhD. I could not include age or sex of participants in my demographics as it would made identifying some of the participants possible.

12. Conclusion

To answer my research question (What influences supervision knowledge and practice at the School of Therapeutic Sciences?), I did a survey to explore supervision styles, readiness and confidence and compared them to experience in supervision. I learned that confidence is something that comes with years of experience and with the more postgraduate candidates one supervises. I am no longer as intimidated by the prospect of supervision as I was before. Readiness and confidence will come with experience, and I don't need to already be a specialist in supervision from the very start.

I have learned that we don't have to be lonely in the supervisory experience. I think these findings helped me with my own uncertainty about supervision. It is such a scary thing. And now being aware of the benefits of co-supervision and teams, I find I am not as scared. I have been co-supervising the last two years with two colleagues, as an opportunity to learn and be able to supervise on my own one day. Before, I had not realised I could approach other colleagues and have them supervise with me as a team. I can feel the mental confidence shift within myself that I am now not as reluctant to take on postgraduate candidates as first supervisor. I accept that I don't have to know everything, that my co-supervisor may know what I do not, and/or that we shall at least have company in figuring it out.

It is comforting to learn that no supervisor knows everything, that we do sometimes go beyond our own sphere of expertise, and that is ok. It is why we co-supervise or turn to each other for advice. Course attendance can positively influence confidence levels. Most supervisory styles are developed based on social learning, and each supervisor adopts their own preferences for how to supervise candidates.

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