Doctoral Education in Context

Perspectives from Africa

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CHAPTER 14

Reflections on cohort and thesis-by-publications approaches to doctoral supervision at Makerere University

Stephen Ojiambo Wandera

Uganda has a population of about 45 million people (UBOS, 2014) and 303 institutions of higher education, including 10 public and 16 private universities (UNCHE, 2023). Between 1970 and 2020, about 1 025 PhDs were awarded by four of the public universities in Uganda, Makerere University, Mbarara University of Science and Technology, Kyambogo University and Gulu University.

Makerere University was established as a technical college in 1922. It evolved into a university in 1949 and currently offers programs in various fields such as arts, social sciences, engineering, medicine, agriculture, and law. The University has about 40 000 students, including about 1 000 doctoral students in all its colleges. In 2023 doctoral degrees were awarded to 132 candidates.

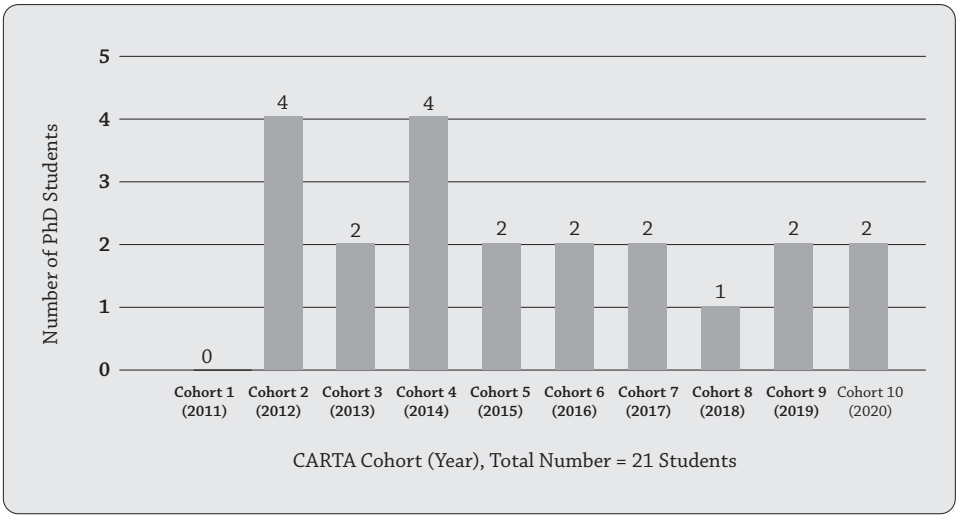
1. Introduction

In this chapter, I present my reflections on my experience with doctoral training in a graduate programme organised and implemented using a cohort approach and based on the thesis-by-publication (TBP) format (see Frick, 2019; Niven & Grant, 2012). The approach has been tested at various universities in Africa including Makerere University Kampala (MAK), Uganda, under the Consortium for Advanced Research Training in Africa (CARTA) programme. CARTA is a capacity-building programme co-led by the African Population and Health Research Centre (APHRC), Nairobi, Kenya, and the University of the Witwatersrand, Johannesburg, South Africa (Ezeh et al., 2010b; Igumbor

et al., 2022). Ten universities in Africa, including Makerere University, and ten universities elsewhere in the world (Europe and North America) are members of the consortium (CARTA, 2023). The programme offers population and public health fellowships for doctoral training and supervision using a cohort approach (Ezeh et al., 2010a; Igumbor et al., 2022).

I was a CARTA doctoral student in 2012-2016 (Cohort 2). In this cohort, we were four (out of 25) CARTA doctoral fellows from Makerere University. By 10 May 2023, a total of 21 PhD students from Makerere University had participated in CARTA (see Figure 1). Thus far a total of 225 PhD students have been trained in the CARTA programme, 142 have graduated from various universities and by the end of 2023, 83 were currently still studying (CARTA, 2023). During this period (2012-2020), a total of 544 doctoral candidates graduated at Makerere University (Etomaru et al., 2020, p. 43). I will argue in this chapter that the experiences gained in this programme can be of value to Makerere University in general, including and going beyond those students involved in the CARTA programme.

Figure 1: CARTA PhD students at Makerere University by cohort



Source: CARTA

In terms of the TBP approach, PhD students are encouraged to publish journal articles during their participation in the training programme. To prepare and support CARTA fellows to meet this requirement, cross-cutting doctoral

training courses in the form of four joint advanced seminars (JASes) are offered during the four years of the PhD programme.

Limited attention has been given to documenting the experiences of PhD students and supervisors following the TBP format and cohort approach in African universities. In this chapter I share an overview of the structure and activities of the CARTA programme, followed by a reflection on my experience as a PhD student (PhD fellow) in the CARTA programme. I conclude with observations and suggestions on how these approaches can be of value to doctoral education in the African context, particularly at Makerere University and beyond.

2. Methodology

In this chapter, I use autoethnography as a methodology to present my reflections on my experience of doctoral supervision. This methodology allows authors to use their experiences to explore specific topics (as in this case, a collaborative PhD programme), call attention to problematic cultural issues and practices, and offer reflections (e.g. fieldwork diaries). Autoethnographic projects use "selfhood, subjectivity, and personal experience (*auto*) to describe, interpret, and represent (*graphy*) beliefs, practices, and identities of a group or culture (*ethno*)" (Adams & Herrmann, 2020:2). I consider the institutional and professional contexts with the aim of obtaining better understanding through self-analysis, and reflect on institutional processes, as suggested by Pańkowska (2022). I use *critical* autoethnography, that is, "a process that involves a dialogue between the autoethnographer and study participants" (Pańkowska, 2022:1), through involving the other Makerere University PhD students who were also CARTA fellows at the time. Those fellows have reviewed the reflections I have presented in this chapter.

2.1 Cohort supervision using a thesis-by-publication format

Supervision models include the traditional master–apprentice model, team supervision, and group supervision (Agné & Mörkenstam, 2018; Carter et al., 2017). Cohort supervision is part of the group supervision model (Wilmot, 2021). Cohort supervision is an approach to supervision that extends beyond the traditional one-to-one supervision (apprenticeship) and the generic group supervision (one-to-many or many-to-one) models in the sense that a cohort of students works together in a structured programme for a designated period (Wilmot, 2021). There are two models of cohort supervision: (i) a cohort where

one supervisor is assigned to a cohort of students, and (ii) a cohort with many, where a group of supervisors supervises a group of students (Choy et al., 2014; Wilmot, 2021). A cohort of students participating in the same programme shares five characteristics. First, the cohort has a defined, long-term membership of students who commence and complete a study programme together. Second, the students share a common goal that can best be achieved when the members are academically and emotionally supportive of each other. Third, they engage in a collaborative series of learning experiences. Fourth, the cohort follows a highly structured meeting schedule. Finally, the cohort forms a network of synergistic learning relationships that is developed and shared among members (Choy et al., 2014).

Cohort supervision has several benefits: it allows collaborative learning and mentorship in a structured programme; members of the cohort provide technical assistance and emotional and social support to one another as they pursue their doctoral studies (Agné & Mörkenstam, 2018; Choy et al., 2014; Holloway & Alexandre, 2012); it reduces academic isolation which often happens during PhD training (Hutchings, 2015); and continuous engagement with peers, supervisors and experts promotes nurturing and enculturation into the academic community and discipline (Jacobs, 2020; Wrigley et al., 2020). In the CARTA model, cohort supervision is practiced. Four joint advanced seminars over a period of four years, each lasting four weeks, are organised. Supervisors and fellows give feedback to one another to improve the quality of the PhD theses (Ezeh et al., 2010b).

However, cohort supervision also has some challenges and concerns. Conflicting and contradictory advice from a group of supervisors and students may be confusing to students. Dominant personalities of some supervisors and/or students might stifle the growth and progression of other students (Jacobs, 2020).

The thesis-by-publication (TBP) approach has become common in some universities for two reasons: (i) universities want to increase their scientific output and (ii) students aim to increase their competition in the marketplace (Guerin et al., 2015). TBP is a popular model used by universities in Australia and Scandinavian countries, and recently in some African countries (Niven & Grant, 2012). According to the 2016 Makerere University Doctoral Supervision Guidelines, PhD students aiming at a TBP may be examined based on a compilation of at least three (3) to five (5) papers published in refereed journals before students are allowed to participate in a public PhD defence as a final examination of their doctoral thesis (Makerere University, 2016).

Students are drawn to the TBP approach because they see it to fast-track their careers as researchers or academics (Mason & Merga, 2018b, 2018a). This rationale is not without challenges. For example, some students fall prey to predatory publishers and journals (Mouton & Valentine, 2017). Therefore, they need constant mentoring from experts and supervisors. The TBP also accelerates contribution to the body of knowledge. However, this model is not an option for all doctoral students. It is a tough challenge to publish at several peer-reviewed journal articles as an emerging researcher (Niven & Grant, 2012). To complete a thesis-by-publication, doctoral students need to acquire a skillset that includes writing skills, time management, and being technology savvy (Merga et al., 2019).

Continuous research capacity building is critical to the success of doctoral training. Makerere University runs cross-cutting seminars for PhD students. These seminars help build the skills of PhD students. During the CARTA training programme, four joint advanced seminars (JASes) are provided to build the research capacities of the doctoral fellows (Ezeh et al., 2010b; Igumbor et al., 2022). The seminars build the research and management capacities of PhD students (Igumbor et al., 2022). Table 1 summarises the focus of these JASes in CARTA training.

Table 1: Structure of the CARTA programme

Year	Joint advanced seminar (JAS)	Duration	Location	Content
Year 1 (March 2012)	JAS 1	4 weeks	African Population and Health Research Centre (APHRC), Nairobi, Kenya at Safari Park Hotel	Proposal development; Responsible Conduct of Research; Communicating research
November - December 2012	JAS 2	4 weeks	University of the Witwatersrand, Johannesburg, South Africa	Theoretical perspectives on research methodology & Quantitative data analysis (STATA) and Qualitative Data analysis (Nvivo)
Year 2 (2013)	No seminars		Students in their home countries	PhD candidates collect data
Year 3 (2014)	JAS 3	4 weeks	University of Ibadan, Ibadan, Nigeria	Data analysis (facilitators available for quantitative and qualitative analysis); Scientific writing
Year 4 (2015)	JAS 4	4 weeks	African Population and Health Research Centre (APHRC), Nairobi, Kenya at Safari Park Hotel	Grant writing and management; Policy influence (to develop policy briefs); Educator role (incl. curriculum design); Research leadership

2.2 Reflecting on my experience as a CARTA fellow

The PhD training programme at Makerere University uses doctoral committees in the supervision process. These committees consist of supervisors and other faculty members with expertise in the research area (often referred to as dissertation committees in other contexts) (Holloway & Alexandre, 2012). The CARTA fellows enrolled at Makerere University must also comply with this requirement. During my participation in the CARTA programme, I have learned different styles of supervision. I enjoyed the team approach to supervision. The doctoral committee members supervise either one or several PhD students. The doctoral committees guide and advise the student from the beginning to the end of the process. They recommend the appointment of external supervisors and academics who are external to the university.

During my PhD training in CARTA, I had an external supervisor based at the African Population and Health Research Centre in Nairobi, Kenya, who strongly supported and mentored me during the initial conceptualisation of the PhD, the development of the proposal, and my engagement with the relevant literature. During the CARTA training, we were encouraged to have external supervisors (external to the university where a PhD student is registered). The external supervisor provided additional support to several CARTA PhD students in the same or different cohorts.

As a graduate of CARTA, I had to sign a formal contract with my doctoral supervisors. This contract stated my roles and responsibilities as a student and those of the supervisors. In addition, the contract states the number of publications a student intends to publish as part of the thesis. Those terms and conditions made the supervision experience so smooth for the team. However, Makerere University had no standard contract or memorandum of understating (MoU) template for doctoral training. Students were expected to submit semi-annual progress reports which are signed by the student and the supervisor(s). Makerere is currently reviewing these processes.

Managing supervisor–student relationships is a critical factor in doctoral training (Lee, 2018). International policy frameworks such as the Bologna process, encourage the treatment of PhD students as colleagues, thus promoting collegial relations between supervisors and their supervisees (Verhoeven & De Wit, 2022). In many African universities, the master–apprentice model of supervision dominates (Wilmot, 2021). During my PhD studies, my supervisors were collegial in their interactions with me. Not only had they supervised me during the master's programme too, but I was also a faculty member during my postgraduate studies. We had already built a rapport. They used functional,

relationship development, critical thinking, as well as emancipation approaches in the supervision process. In addition, during the CARTA doctoral training prorgramme, I received immense support and input from fellow CARTA doctoral candidates in the same cohort at Makerere University and from other participating universities.

Managing divergent ideologies, feedback, and viewpoints from supervisors (cohort of supervisors) and peers in the cohort is a common issue in cohort supervision (Govender & Dhunpath, 2011a). During the CARTA seminars, we received feedback from multiple supervisors who facilitated the sessions and cohort peers. There were instances of conflicting views about our proposals, methodologies, and manuscripts. This sometimes led to conflict of opinions among me and other students. The way of resolving this was to call for the opinion of the principal supervisor. Their opinion would sometimes be taken as the final direction for the thesis (Cornwall et al., 2019; Govender & Dhunpath, 2011b; McAlpine & McKinnon, 2013). When divergent opinions emerged among my supervisors, we would meet and discuss it, and we were able to reach an agreement for a way forward with the thesis.

Managing the expectations of both students and supervisors during PhD supervision is challenging. These expectations depend on the personalities of both students and supervisors. They are also deeply embedded in individual and institutional cultures (Turner, 2015a; Lee, 2018). Sometimes, students expect their supervisors to be personal friends, mentors, coaches, and directors at different points of the PhD process (Czigan, 2014; Makerere University, 2016; Lee, 2007; Turner, 2015b). However, it is not an easy task to find all these virtues in every supervisor. On the other hand, supervisors expect PhD students to be self-driven, highly motivated, and able to develop scientific independence (Turner, 2015a; Lee, 2018). In addition, students expect to be treated as colleagues, while some supervisors expect students to behave like apprentices in a workshop. Such mismatches and varying expectations easily breed tension and frustration when they are not met or fulfilled (Turner, 2015a; Lee, 2018). From my experience, my two supervisors were highly supportive.

My first/principal supervisor was like a father-figure to me. He was a mentor, a coach, and a guide. Following his advice helped me to overcome many obstacles during the PhD journey. Since I was the first student my supervisors were guiding to write a TBP, I was expected to be self-driven and consultative. I convened a meeting to agree on the structure of the TBP with my supervisors. They recommended that I visit the university library and the Directorate of Research and Graduate Training to find three to five other TBP theses and then

we met to compare and discuss them. Following this discussion, we agreed on the structure and number of publications of my TBP.

Personality differences between the student and the supervisor can pose challenges. Temperaments affect human behaviour, expectations, as well as attitudes. For example, introverts find it a challenge to express their thoughts and emotions to outsiders, while extroverts can more easily do so (Czigan, 2014). Temperaments influence expectations from both students and supervisors. Perfectionist supervisors are highly critical of their students and set very high standards for them. My principal supervisor focused on milestones and deliverables – a functional supervision approach (Lee, 2018), and he is a perfectionist. He read every sentence and even rephrased every sentence when needed. He was strong on quantitative data and statistical analysis. He trained as a medical statistician. The co-supervisor was a critical reader. A good mix and synergy in the temperaments of supervisors and myself enabled me to go for the highest targets in doctoral training. I aimed to publish five journal articles and ended up with four done and one manuscript ready for submission (Wandera et al., 2014, 2015a, 2015b, 2015c).

Most of the PhD students in Makerere University's postgraduate programmes are part-time students, who are engaged in formal employment. This puts pressure on and makes demands on the students. It makes it more difficult for students to meet and interact regularly with their supervisors. Demands from employers and heavy workloads cause interruptions for varying periods in the research activities of many PhD students. Such experiences reduce the consistency and tenacity of the doctoral students (Lindén et al., 2013; White, 2003). PhD students are expected to be mature and to be able to guide themselves. Such an expectation by the supervisors sometimes leaves PhD students lacking these and similar abilities to fall through the cracks. I was admitted on a full-time basis, and I was granted study leave for three years (2013-2016) as a member of faculty at Makerere University. The PhD study leave granted me sufficient time to focus on the writing and the completion of the TBP on time. If Makerere University did not grant me study leave, I would not have finished the thesis in time. The TBP is an enormous endeavour with several rounds of peer review for manuscripts submitted to journal articles. If one does not have the time, there is no way they can finish in the allotted time. I completed my TBP in four years. I was only delayed by the external examination process, otherwise I would have completed in three.

At Makerere University, doctoral theses can follow either a monograph or thesis-by-publication format (Makerere University, 2016). Most students at Makerere University use the monograph format. However, those Makerere

students participating in CARTA are encouraged to produce a thesis-by-publication. I decided to follow the TBP format. Universities in Africa set different rules to guide doctoral training, particularly the requirement of publications from doctoral students. Makerere University has a graduation requirement of three (3) to five (5) publications for those following a TBP format (Makerere University, 2016). This requirement is a serious challenge to PhD students who are normally novice researchers with limited knowledge and experience of scholarly publishing (Teferra, 2015). When not guided well, some fall prey to predatory publishing houses and journals (Mouton & Valentine, 2017; Titus et al., 2014, Welfare & Sackett, 2011). Peer review feedback from journal editors as well as the publication process after peer review usually take a long time. These delays are a major challenge for PhD students who have time and resource constraints. When I submitted the first manuscript to a journal, I received editorial comments that required gender-disaggregated analysis. It meant repeating all the statistical analysis three times for each level: univariate, bivariate and multivariate. That was an equivalent of writing three articles for each of the papers. I was frustrated and complained to one of my supervisors. She encouraged me to calm down, take time and address the comments. Eventually I managed to rewrite the entire article and included gender-disaggregated analyses in all the articles.

I had a CARTA cohort supervision network (facilitators and supervisors) that trained us on how to identify reputable journals in which to publish. The CARTA supervisors were supportive in identifying reputable journals. I learnt to use the journal finders of major publishers like Springer, Nature, BioMed Central and Taylor and Francis.

Timely feedback to doctoral students is expected in a cohort supervision model. One of the key critical aspects of supervisor–student relations is the turnaround time for written feedback to doctoral students (Aitchison et al., 2012; Hyatt, 2005; Kumar & Stracke, 2007; Turner, 2015a). I received timely written feedback from my supervisors. This is one of the best practices I would want to replicate in my career as a PhD supervisor. In the CARTA cohort, I benefitted a lot from other CARTA facilitators and fellows, including scholars from universities in other countries. They also gave timely feedback on manuscripts before they were submitted for publication. This 'in-house' peer review in CARTA was a great support to my work. During the joint advanced seminars, I received constructive comments from the cohort fellows and supervisors and facilitators on two manuscripts. Such timely feedback from the cohort fellows played a great role in my progress. I continue to use this approach in my work.

Linking theory to a PhD thesis is easier in a cohort supervision model. Several PhD students struggle with the literature review, with identifying conceptual thresholds, and with the application of theory and doing justice to the chosen methodological considerations (Badley, 2009). There is a need for constant capacity building on the role of concepts and concept mapping during the writing of the PhD thesis. How these concepts and theories apply to methods is a challenge, especially when engaged in mixed methods research (Creswell, 2013). During the doctoral training as part of the CARTA cohort, we would share our chosen theoretical frameworks with each other and were able to learn more from our peers. We reviewed and provided feedback to other students' theories and conceptual frameworks. I was able to tailor and adopt two theories to my PhD thesis after attending the seminars where other students presented their work.

The external examination process can delay the completion of a TBP. There are challenges associated with the process of external examination (Kiley, 2009), such as identifying reliable and available external examiners, preparing the final PhD thesis to be sent to the external examiners, the turnaround time for feedback reports, and payment of honoraria by universities that are resource constrained. This partly explains why the average completion time for doctoral training in many African universities, including Makerere University, is five years (Cloete et al., 2015). On average, our experience in CARTA is that feedback from external examiners ranges from three to nine months. This has implications for PhD completion time and rates at Makerere University.

2.3 Implications of cohort supervision and the TBP format for doctoral education at Makerere University

1. Makerere University currently does not provide a list of reputable journals for publishing the research of PhD students (like the list of accredited articles provided by the Department of Higher Education and Training in South Africa, see (SUN, 2023). There are various comprehensive journal databases listed on the Makerere University library portal. The lists of journals are updated annually. This is a best practice for academic libraries, which can be adopted elsewhere in Uganda. However, Makerere University still needs to develop a robust publications policy to guide both PhD students and members of faculty and to assist them in avoiding the pitfalls of publishing in predatory journals.
2. Critically, the CARTA cohort model emphasises the signing of supervision contracts or memoranda of understanding (MoU) between supervisors

and doctoral candidates (Ezeh et al., 2010b; Igumbor et al., 2022; Uwizeye et al., 2020). The use of contracts between students and supervisors should be made compulsory for all postgraduate students at Makerere University.
3. Makerere University also needs to improve its support for supervisors. For example, in the CARTA model, supervisors receive monetary reward when their supervisee completes the PhD in time. There is evidence that monetary rewards can improve throughput, however, they may also have unintended consequences (Muthama & McKenna, 2020).
4. Makerere University does not employ graduate research coordinators in all its schools. Graduate coordinators can help to allocate and prepare students for presentations, seminars, and public defences. Such arrangements may support mechanisms for PhD students as the former will be contact persons for the students. Currently, such coordinators exist at school and, sometimes, college level. There is a need to appoint such coordinators at departmental levels. Graduate coordinators are instrumental in supporting the cohort supervision model.

3. Conclusion

Only a few PhD students (21 in total) at Makerere University are CARTA fellows. Based on my experience as CARTA fellow (reviewed by the 4 other Makerere University PhD students in my cohort and one more from another cohort), I argue that all graduate students at Makerere University can benefit from the approaches used in CARTA – cohort supervision and thesis-by-publication format. The TBP format is attainable and improves the research skills of the doctoral students as they learn so many skillsets during training in a cohort or on the job.

I pointed out the challenges faced by students doing a TBP format PhD. The challenges in doctoral education at Makerere University include delays in the external examination process, the obstacles that part-time PhD studentships must overcome, lack of project management skills, and guidance in managing conflict between students and supervisors.

On the other hand, I advocated for more consistent and systemic implementation of best practices in doctoral supervision. These include the compulsory use of supervision contracts, continuous use of doctoral/thesis committees, promotion of a TBP format, timely written feedback by supervisors, and the continuous strengthening of research capacity through the training of doctoral students and supervisors through continuous professional development. I maintain that the implementation of these suggestions can enhance

doctoral education at Makerere University in its quest to be a research-intensive university.

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