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Reflections on Online Research supervision in selected Zambian HEIs

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Abstract
In an all-pervasive digital world, Education continues to be impacted. This longitudinal and reflexive qualitative study aimed at assessing research supervision status by exploring online research supervision within Higher Education in Zambia. It exploited two connected approaches: longitudinal reflective and conventional standard research as its approaches. A snap shot qualitative assessment using open ended questions was conducted via interview guides in 12 responsive selected HEIs out of a total population of 63 HEA accredited tertiary institutions. To arrive at the initial sample of 14, an inclusive and exclusive criteria was used while purposive sampling was exploited to select 14 interview respondents. Two primary theories: Zone Proximal Development (ZPD) and Social Presence undergirded the enquiry. The study found that 57% timely completed research projects while a minority (21%) opined that research in Zambia was of good quality. The study also found that 71% had at least once supervised via online means. The research concludes that present research supervision practice and process requires urgent significant reform by all relevant stakeholders. It also concludes that impeding challenges need focused attention and due investment by HEIs and government. The study recommends that relevant enabling structures to support online research supervision be urgently installed by respective institutions. Also strongly recommended is the adoption of online research supervision as an alternative approach to traditional embodied approaches practiced by most HEIs. The enquiry further recommends that government facilitates ongoing stakeholder training, incentives, relevant policies and standards be launched. Future research should explore AI enabled auto-supervision for possible adoption in HEIs.
Key words: Research Supervision; Training; Pedagogy; Online; Embodied; Early Career (emerging) Researcher (ECR); Mentor; Intelligent Tutors; Artificial Intelligence; DeepSeek; ChatGPT
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Introduction

When discussing online education, several dynamics come into play, one of them is the need for student supervision. At academic study programme end, students generate and submit an elaborate well -structured thesis, typically summarizing what they have studied in their chosen program.

In an ideal world with all things functional, a student entering a tertiary education institution should wind up their studies within a stipulated time frame. Learners should complete all course work and soundly seal off their studies with a well-articulated quality thesis. The said thesis, according to Fosso-Kankeu (2022) is not only an academic requirement but a clear demonstration of the student's ability to conduct independent quality research thus, potentially contributing to the existing body of knowledge. In Zambia, every tertiary institution is expected to have each student churn out a timely completed thesis before walking the podium. This requirement demonstrates the criticalness and importance of a thesis. By that token, institutions should be stocked with sufficient, well trained, digitally fluent and competent human capital to fit into the critically sensitive research supervisor role. If this is not in place, challenges are anticipated down the road leading to high student attrition, low productivity, frustrations, poor quality research output and lower completion rates. If the project is successfully timely executed, then all connected parties walk away mutually benefitted with their images boosted. This is the ideal but rarely occurs that way.

In contrast, the current research supervision status in Zambia is not encouragingly clear. Why would this be so? Different responses can be advanced, given the dearth of documented hind empirical research data on Zambian turf[1]. However, despite these varied responses, possible reasons could be adduced case by case. Evidently,

[1] In the process this study review, it was found that a whole range of feedback was possible from a perception continuum of

present research practices in Zambia still need improving given delayed research project completion. Additionally, supervisors rarely voluntarily seek ways to efficiently improve their skills or actively consider alternative options like online research supervision despite its potential high productivity returns. This study responds to this evident gap on online research supervision hence, it's relevance.

Statement of the problem

Generic supervision is supposed to be flawless, seamlessly mundane, efficient and normative in Zambia. Attendant processes should also lead to memorable experiences for all primary stakeholders. The thesis being a prescriptive requirement for potential graduates requires that the research (supervision) process should be as efficient and straight forward as possible. However, the reality on the ground is that this rarely occurs and is fraught with multiple impediments. Potential solutions, including online supervision exist but rarely maximized. Additionally, little data and documented empirical evidence exists on the Zambian turf relating to online research supervision. Historically, online supervision is not normative in Zambia but more accepted in the better resourced global north. This makes its exploration necessary with a view to mainstream it for yielding its potential efficiencies, transparency and keeping in step with the times. This investigation addressed this identified gap while advocating for online research supervision as a strong viable alternative option to traditional standard practices.

The study had three stated objectives:

1. Establish and identify current existing research supervision practices in Zambia.
2. Ascertain whether supervisors voluntarily have previously engaged in online research supervision in Zambian HEIs.
3. Propose solutions to improving and entrenching online research supervision in Zambia.

Corresponding questions are stated at length:

1. What are the existing research supervision practices in Zambia today?
2. Do supervisors voluntarily conduct online research supervision as an option?
3. What proposed solutions could be considered in improving research supervision in general and online research supervision in particular?

The value of this study lies in that it argues for a comparatively efficient approach to supervision in a mutating context beset with inefficiencies. Online research supervision contributes to overcoming these challenges.

Purpose and significance of study

The study aimed at establishing existing practices in research supervision and to advance an emerging approach likely to enhance efficiency in research supervision facilitation practice. This research primarily assessed the status of online research supervision adoption in the Zambian context while referencing other spheres across the globe. It also aimed at highlighting the importance of online supervision, its benefit and necessity in this digital age. This enquiry addresses the identified gap of online research supervision in Zambia while contributing to the extant body of knowledge in the country. Further, data generated will inform educator decision makers, research designers and practitioners in Zambia. Armed with this report, a basis for improving both the process and outcome of research activities in Zambia is now available. These reasons is where the study significance lies.

Literature review

This enquiry reviewed several relevant studies focusing on research supervision in general but this particular study pays special attention to online supervision. The study proffers a generic overview of basic research supervision before delving into online research supervision. It argues that research supervision is critical,

responses, not necessarily from the Zambian turf. Only a few are here highlighted including 1. "All is well", 2. "The product is there and is all that matters", 3. "No cheap degrees so folks have to struggle before they earn the credential", 4. "All is not well", 5. Several respondents opined that "Some things are [in place]" OR "not others", 6. Theoretically all OR but not really". In short, perceptions and responses vary. L. Mweemba, M.K. Banja, D. Ndhlovu, G.I. Ziwa and N. Ssgingongu (2018) have explored aspects of research supervision in Zambia but not much else was found at study time.

irrespective of the mode, hence demanding special attention. As earlier stated, the study consulted a number of key sources, one of them by Taylor (nd), whose insightful work on enhancing research supervision is helpful. In that work, the consortium of authors suggest that basic research supervision is not new but has been around for a long time. According to Taylor (nd), this process is traditionally accepted, though the mechanics and dynamics have evolved over time. Adjustments have had to be made with parties to the study agreeing on how they intend to handle and schedule matters including meeting frequency, tasks, benchmarks, total time line, among other standard essential supervised research elements. Contingent on the type and nature of enquiry, initially, meeting tends to be frequent and intense, but later, eases up as the ECR demonstrates enhanced research competencies, contingent on supervisor evaluation report. Usually, the supervisor initially needs to spend more intentional time with the novice researcher, train and equip them for involving work ahead. Intentionality at this stage mitigates future challenges. Comparatively, undergraduates require more direct personal support compared to their graduate or post graduate counterparts, although this should not be assumed. Each case must be treated as unique. From the outset, expectations must be set, agree on clear boundaries, benchmarks, set deadlines and then students submit work for review. This is followed by periodic scheduled meetings to discuss emerging issues, refine, correct and chart direction (Pather, 2022). The student then embarks on making amendments or conduct further research before reconvening for the agreed scheduled meeting. Kumar, Kumar and Taylor (2020), opine that the traditional way of doing supervision (i.e. in-person/embodied) is changing because of emerging technologies enabling remote online supervision, bereft of familiar physical meetings between supervisor and supervised. The challenge is how best to execute an improve this kind of supervision. The second helpful source consulted in this study was the 'Marie Slodowska-Curie Actions Guidelines on Supervision (2021)'. This source discusses how supervision can be done in the light of emerging dynamics that include online supervision. The said document proffers standards, suggestions and helpful thoughts on supervision while examining the role of institutional structure, the student researcher and the role the research supervisor plays. Each party needs to know their functional roles and tasks, what individual duties should be, do, how and when. Certainly, this is a good general standard worth referencing. There are equally other helpful sources covering online supervision that were reviewed, for instance, key papers done in Africa (i.e. Katowa-Mukwato, 2023; Japheth, Ssentamu, Wambua & Kurgat, 2023; Pather, 2022; Fosso-Kankeu, 2022; Japheth, Kondo, Heitz-Tokpa, Bonfoh & Akindes, 2022; Wambua & Ssentamu, 2021; Malunda. Atwebembeire and Ssentamu, 2021; Daramola, 2021; Okeke-Uzodike, 2021; Tladi & Seretse, 2021; Noel, Wambua & Ssentamu, 2020; Gumboh, 2019; Fulgence, 2019; Mweemba, Banja, Ndhlovu, Ziwa & Sachingongu, 2018; Wilkinson, 2011). Several academics spent many years in South, East and West African educational institutions and a few of them explored online supervision, observed that dynamics changed in cyber space though the basic principles and goal of research remained essentially the same: Quality effective supervision.

Theoretical framework

To guide this enquiry, at least two primary theories undergirded it. Other secondary but relevant supporting theories such as the Hofstede's cultural, Efficacy, adult learning (andragogy) and Maslow's hierarchy of needs may be referenced, albeit indirectly. The Zone Proximal Development (ZPD)[1] was the first. This theory posits that people learn in community from their peers, friends or experts while interacting (e.g. in conversation). During that process, learners sharpen and refine their work and skills. The said theory also argues that for people to execute tasks, and to learn, they must interact with others and in here lies space for supervision. If the student is interacting with their supervisor in spaces like the colloquium, learners interact (e.g. discussion), exchange ideas or learn from others in community. This could also occur in a scheduled F2F session with the supervisor too. In such spheres, knowledge pollination and diffusion effectively take place as does skills impartation. Additionally, during colloquiums, for instance, budding ECRs share their topic and stage progress while peers and supervisors comment, constructively critique, feedback or suggest ideas with the single eye to improve quality. Others grasp new ideas in the process from the more advanced peers. This type of information exchange often occurs at graduate or post graduate levels where researchers should be mature and know what they are doing. Often, undergraduates are unsure of themselves, a bit too self-conscious and would prefer working directly with their supervisors. Their esteem is better preserved that way. Tatnell (2020:4), comments that:

> "When studying on-campus, research students often share workspaces, enabling a supportive, collegial relationship between students…aid in the development of peer mentoring relationships between students across different levels of study. Fostering these collegial and supportive relationships between

[1] Kassim Salehe, T. Mandila and P. Vumilia (2023:37), *IJELD* volume 11 # 7:34-52 alternatively referred to this theory as "assisted learning". The theory is elaborated in L. Vygotsky (1978). Mind and Society. The Development of higher mental process. Cambridge, M.A: Harvard University Press. Willey Eastern Limited.

> online students, who may never physically meet, is considerably more challenging, and students tend to rely more heavily on their supervisor in the absence of peer relationships…"

Salehe *et al*. (2023) used ZPD in their study to establish whether students completed their research task on time or not. They found that most did not. Another, Taylor (2023) also arrived at the same conclusion as he surveyed the history, evolution and development of doctoral studies over the years from inception at the University of Berlin, Germany (1810), way before the rest of the world adopted the research degree (i.e. PhD). His insights are handy in that they give relevant historical context, evolution of doctoral studies and challenges faced to this day. That said, history gives insights and context into issues facing the world today. Delays in research completion remains a bugging problem. The second primary theory is 'Social Presence' which argues that the closer a learner is with the instructor or human interaction elements during the learning process significantly helps better materials and skills grasp. Minnesota State University's Academic Technical services[1] gives helpful, clear and crisp definitions or descriptions of social presence, history and its evolving meaning. Basically, social presence has to do with being present, real, felt and engaged (while using mediated tools for learning) during instruction and communication. According to this source, Short, Williams and Christie (1976) are said to have conceptualized this theory. Evidently, this theory syncs well with the Zone Proximal Development in the sense of shared commitment, fellowship, friendship, community and collegiality ensuring that a person is learning in a safe, free environment and thus, less anxious considering the inbuilt safety mechanisms within the company where shared exploration exists. Evidently, the goal of all research is the generation of new useful data contributing to the existing body of knowledge (Severinsson, 2012). In a sense, it could be safely argued that all academic research is somewhat a community project because several parties speak into it. This study also referenced other theories to guide the study. Hofstede's cultural theory explores different dimensions of culture and its influence on development or human interaction. Among the 6 dimensions it explores is power distance. In hierarchical contexts, the power distance is often large and thus affects interactions. Power distance is simply the relational gap between and boss and surbordinate. It also explains how hierarchical a context is between those vested with authority to make decisions by virtue of their age, rank, position or pedigree. Applied to supervision, power relations have an effect on supervisior-supervised relations. If the power distance is large and the supervisor has the upper hand, they tend to dictate pace and direction or how the project should progress. This study bears these cultural dynamics in mind. Self-efficacy relates to resilience and progress students exhibit to keep on task. If they have intrinsic motivation, then students tend to independently plan, execute and investigate matters on their own despite encountered challenges. Efficacy is important especially when someone is to engage in online supervision or thesis generation hence the relevance of the theory to this enquiry. Another key secondary theory applicable to this study is andragogy. This theory posits that adults come to the learning process with hind knowledge and thus must be treated and taught differently from infants (i.e. pedagogy). If this consideration is not extended to them, then adults soon get frustrated, lose interest or may even quit. To keep them engaged, learners need to be given leeway, respected and merely guided as fellow discoverers of facts in the scientific endeavor. But then, learners wish to reach a finishing point at which summit they will look back with a sense of fulfilment. Without a complete thesis, they cannot graduate. Additionally, if learners garner skills, they can then negotiate their way through life as they collate data and correctly analyze it for results. Maslow (1943) posited that humans tended to desire the next higher level good once the lower basic needs were met. Research skills and credential acquisition lie within hierarchy of needs as they bolter esteem and eventual actualization.

Said differently, research is about enquiry, acquiring skills, generating data or contributing to existing knowledge. The present state, in Zambia, seems concerning as research in this country is not encouraging. Although clear on paper, neatly and correctly stated in theory, in several institutions, the actual research supervision process and dynamics on the ground do not exactly match what is claimed on paper. This research quality, process, condition and scenario is concerning for a number of reasons: first, research appears erratic in the context. Sometimes, if not often, it is unclear which direction a research project will take or how long it will be. In a worst case scenario, the supervisor and supervisee both, at times, do not exactly know what next needs to be done, when and where[2]. At other times, a supervisor is not promptly assigned, unavailable or simply does not timely review submitted work. Salehe *et al*. (2023:47) observed this same trend in their 2023 study for Tanzania. The study made several observations including late supervisor assignment and the fact that supervisors were

[1] Source: https://cornerstone.lib.mnsu.edu/cgi/viewcontent.cgi?article=1001&context=isalt_resources#:~:text=Social%20Presence%20Theory%20(SPT)%20was,(1995)%20to%20state%2C%20%E2%80%9C, accessed on 19th July, 2024.

[2] This happens where supervisors are raw, in experienced, untrained or simply not experts in a given area. This could be disconcerting for all parties.

overloaded and thus did not see the urgency. Yet at other times, when supervisors do review, feedback is unclear, scanty, not comprehensive enough, or key bench marks unknown. In such scenarios, it is difficult to tell whether the student is making headway, good, steady progress or not. This can be frustrating either side. In yet other scenarios, the supervisor remains silent for extended periods of time and suddenly shows up and off again for an unspecified period of time. Lee (2007), while citing Darling (1985), dubs these 'toxic mentors' who can be avoiders, destroyers, criticizers or simply egoists, full of themselves. In hierarchical Zambia, a student dares not strongly (or rudely) query or push the supervisor too much lest they jeopardize their timely graduation prospects or risk receiving a cold shoulder hence. In such scenarios, it is hard to tell what supervisors are up to and when they shall next show up. Second, academic research sometimes and in some instances, appears unstructured, although on paper may appear chronologically clearly linear. The process is not as smooth or seamless as it should be. Ideally, one pursues an area of inquiry because they have sustained interest in it. If this claim holds true, then the study process should be fun and exciting but sadly, that is not always the case. This points to a weak research support structure. Consequently, this unsettles both supervisors and students because they do not know where to begin, how to proceed, when or where to end (Salehe *et al*., 2023). Sometimes parties do not even know whether they have completed the study because the structure and road map is unclear[1]. Third, uncertainties exist around who the supervisor or supervisee will be. This is unknown ahead of time and relevant stakeholders hardly consulted. In some institutions, students are centrally assigned without supervisor input despite standard practice demanding that there should be leverage to consult parties prior to assigning or matching people for research purposes (Thomas, Packer & Dolan, 2024; Shaw & Lawson, 2015). If this process is executed well, it mitigates acrimony, frustrations or damaged relationships down the road. Fourth, due to challenges of various kinds, research projects are rarely completed on time or within the stipulated program time period. In a study by Salehe, Mandila and Vumilia (2023:35), it was found that "most of the postgraduate students at both master's and doctoral programs take longer than the stipulated time to complete their studies due to ineffective research supervision…" In another study, Tladi and Seretse (2021:3) comment that "it is observed that many students engaged in masters research study fail to complete…" In this Botswana case, Tladi and Seretse (2021) found that a significant number of students failed to complete on time or not at all. Yet another, Pather (2022: 47), opines that "the literature on postgraduate supervision indicates that post graduate research students experience challenges that impede them from completing their research on time…" Interestingly, this completion delay trend does not seem to bother some supervisors as it does students. One major possible contributing reason for this scenario could be the sheer heavy workload and competing priorities laid upon the research supervisor (Pather, 2022). As a result, supervision is treated as a 'by the way' kind of thing, while teaching, grading or consultancy are considered weightier matters, core to their function (Wilkinson, 2011). The ramifications are clear: supervision becomes a casualty relegated to the side. But this brings quality and process issues into question at a given institution. The earlier addressed, the better. Further, the ramifications of delayed completion of research on both student and institution are often undesirable. Salehe *et al*. (2023:35) highlight some of these to include 1. Psychological and social stress 2. Wastage of valuable resources 3. Loss of competitive advantage to both students and institution. Another set of researchers, Masek and Alias (2020: 2493), make an interesting but potent observation, in commenting on delayed completion of students (at doctoral level). They opine that "Doctoral students are sometimes retained for longer period than necessary in their learning institutions, as they are often major contributors in research output and publications. Though beneficial to some extent, extended study duration can be detrimental to both candidates and institutions." This observation makes logical sense in more ways than one. It may be safely asserted that in Zambia, supervision is inefficient because students cannot clearly plan, given that supervisors do not have sufficient bandwidth to efficiently and simultaneously handle both the primary (core) and perceived additional work that they are supposed to handle. Consequently, they procrastinate, or keep postponing to buy time. This problem is especially pronounced in public institutions but has progressively percolated to the private as well, after all, the same expert cohort often supervises in both spheres. There is need to improve research supervision process (i.e. timely and quality research project completion), and hence overall educational quality, in the context. This study addresses that gap by suggesting tips and an additional approach-online supervision.

Defining Generic Research Supervision

What exactly is research supervision? How can it be described or defined? The phrase 'research supervision' is composed of two distinct but related words, 'research' and 'supervision'. Although several definitions for research supervision exist (e.g. by Masek & Alias, 2020; Lee, 2007 etc.), Kumar and Huat's (2011:5) definition

[1] Especially in the case of untrained, raw, inexperienced emerging researchers that were not properly oriented in handling a client for the first time post PhD completion. This malady is cured by first letting them serve as co-supervisors to the more seasoned and experienced principle supervisor.

is helpful. It characterizes 'research' "as an original investigation undertaken in order to gain knowledge and understanding, while gaining knowledge might be narrowly seen as amassing facts, understanding necessarily involves explanation: finding out why phenomenon is as it is." The Auckland University site describes supervision as: "*... the distinctive teaching and learning process used for graduate research education at The University of Auckland and most universities worldwide.*"[1]. Another, Severinsson (2012:215) defines supervision as "a pedagogical process, where clinical experiences are clarified and systematized in a professional context (Severinsson 1994)." Although 'supervision' can be defined in a number of ways but basically, the process is about a mentor or field expert overseeing the work of an apprentice attempting to acquire research skills for conducting independent research thereby generating valid results. Ideally, the early career (or emerging) researcher (ECR) generates data that is clear, concise, correct, precise, relevant, accurate and valid. Therefore, 'research supervision' is the idea of overseeing, modeling, molding, coaching, functioning or guiding the learner independently execute a research project to generate sensible, valid and reliable data that decision makers would be able to rely on (Tladi & Seretse, 2021).

Online Research Supervision in focus

What exactly is online supervision and how does it differ from generic traditional research supervision earlier described? In simple terms, online research supervision is basic research like any other except that the mode, medium and procedural processes used are different (Bengtsen & Jensen, 2015). Whereas the embodied research approach previously highlighted entails in-person physical interaction with clients, online supervision exploits (mediated) electronic means to achieve its ends and thus may not require any physical contact between or among parties (Gumboh, nd). Kumar, Kumar and Taylor (2021), in their helpful work, 'A Guide to Online Supervision: Guide for supervisors', have directly tackled the relatively novel area of Online research supervision. In that work, Kuma et al. (2021) argue, assert and state that online supervision is increasingly taking centre stage given the emergence of educational technologies thereby enabling parties in dispersed distributed locations interact and foster learning. These, and other thought leaders (e.g. Kasim *et al*. 2023 or Tladi & Seretse, 2021) state that the basic principle for research supervision remains essentially the same but dynamics change even more than before. Kasim *et al.* (2023:263), for instance, after carrying out an extensive literature review opine that "due to its advantages, this [i.e. online research supervision] supervisory method has recently become more popular at universities worldwide" Jencius and Baltrinic (2016: 250), claim that "the ready availability of ubiquitous technology means that it's easy for the non-tech supervisor to consider the possibility of providing online supervision." Gumboh (nd), though, gives a timely caution: not to let technology take center stage instead of human relations and interactions.

While these modes can be distinguished (i.e. Online and embodied supervision), researchers like Bengtsen and Jensen opined in their 2015 (p 16-17) study that "…the traditional dichotomy between face to face and online supervision proves unhelpful…" Essentially, these experts claim that deep interlinkages and similarities exist between the two modes therefore not warranting hard and fixed distinctions, although one could simply choose one mode over the other. The point is that there is really no difference except that dynamics change contingent on the preferred mode. The 'what' (i.e. content) taught remains the same but the 'how' of delivery is what differs. Kumar and Huat (2011:10), weighing on this discussion, opine that "Learning can be divided into what is learned and how it is learned-content and mode-and within the alternative ways of learning, preferred learning styles."

Evidently, online supervision tangents from time held process practical steps e.g. in-person physical meetings, time, physical location for meetings etc. (Pather, 2022; Lee, 2007).

Defining Online Research Supervision

The InfoScipedia site (nd)[2] describes online supervision as follows: "… graduate-level research supervised online, time and space often separate the researcher and the research supervisor who utilize technology and mediated communications throughout the research study with little to no face-to-face interaction." According to Kumar et al. (2021:4), "[Historically] traditional doctoral candidates studied on campus and, field work apart, were in close proximity to supervisors throughout their studies. But in recent years there has been a rapid growth

[1] Source: Auckland University website available at: https://www.fmhshub.auckland.ac.nz/21_2.html, Accessed on 6th June, 2024.
[2] Source: https://www.igi-global.com/dictionary/dissertation-research-supervisor-agency-for-us-online-doctoral-research-supervision/73841, accessed on 9th August, 2024.

in the numbers of students undertaking most of their studies off-campus, often at a very considerable distance from the institution." The same thought leaders proffer a rationale for this: "This development has been made possible by advances in information and communication technologies (ICT), which have enabled candidates to communicate with supervisors and others (Moar, Ensher, & Fraser, 2015) …" Additionally, these same experts highlight the following benefits arising from online supervision:

- Expanded access for those not able to travel or stay on campus.
- Enhanced diversity in tertiary education and
- Enables qualified supervisors to carry on the task of supervision from anywhere, anytime across the world.

One additional benefit could be that online education enables ECR (i.e. Research students) to cost effectively conduct research within their respective contexts more easily. This makes their work relevant to their localities as research is meant to solve a bugging contextual problem in a given geographical location. It also contributes to national development (Kumar & Huat, 2011).

Who could be research supervisors?

The answer to this may vary but in general, it may be claimed that individuals suited, inertly motivated qualified interested and competent to mentor another can supervise research (Fosso-Kankeu, 2022). Note that it is not any or every individual with the right academic credential per se, that could or should supervise but one with sustained intrinsic keen interest and desire to pass on skills to the next generation. If the heart to aid is absent, all sorts of troubles ensue downstream including needless ego trips, boasting, frustrations and quitting along the way, if not poor quality work output generated. Kumar and Huat (2011: foreword) pose this critical question and argue that not everyone can function as supervisor. In their view, supervisors need to possess appropriate requisite competencies, skills, expertise and sustained interest in a given area. The right soft skills could be added to this list. Ideally, supervisors should possess tertiary credentials such as a master's or doctoral studies (Shaw & Lawson, 2015). However, Kumar and Huat (2011: Preface) challenge this assumption when they state: "there has been an assumption that having a PhD in itself is enough to guarantee effective supervision. However, supervising post graduates requires specific [and appropriate] knowledge and skills…"

Essential attributes of online research parties

Elements and attributes essential for successful online research supervision (both supervisor and supervised):

a. High Self-Efficacy. Tatnell (2020: 4), opines "students needed to be more self-motivated, disciplined and organized than their on-campus counterparts…" but supervisors too need to possess such traits such as good time management (Kumar & Haut, 2011) and proper planning skills.
b. Organization, focus and discipline (Tatnell, 2020). Parties need to know how and why to remain on task. According to Masek and Alias (2020), 'organization' may include the right ambient environment fostering growth and development.
c. Clear goals on why a particular mode has been adopted and desired outcomes. This includes knowing how to navigate stuff.
d. Good communication skills (Tatnell, 2020; Daramola, 2021). Timely, comprehensively adequate, full, quality feedback is essential in virtual spaces. Interpersonal soft skills essential to succeed in this relational role.
e. Patience, discernment, wisdom and empathy. The mature supervisor must have emotional intelligence to effectively work. Students go through different situations hence the need for this sensitivity. Tatnell (2020: 4), gives helpful insights in commenting on the need for such harmonious supervisor-supervisee interactions highlighting expectations by observing that: "…the expectation students had of supervisors in this study was 'quality relationships', whereas, the number 1 belief supervisors had about students' expectations was 'supportive attitude'."
f. Digital fluency, professional skills and competencies (Tatnell, 2020:5; Masek & Alias, 2020; Fulgence, 2019)
g. Training, expertise and experience (for supervisors) (Masek & Alias, 2020).
h. Passion for the activity and attendant processes.
i. Sustained interest/curiosity.
j. Right attitude and aptitude toward research and clients under their care. Masek and Alias (2020), list these as essential attributes to supervision success.
k. Resilience (Tatnell, 2020), not easily discouraged irrespective of obstacles encountered.

l. Networking, linkages, collaboration (e.g. through communities of practice (COP) or Colloquiums) etc. Kumar and Haut (2011:18), suggest "learning to use cooperative networks" in addition to "improving communication and information technology skills."

Characteristics and nature of online supervision include the following:

a. Remote (Bengtsen & Jensen, 2015)
b. Can be impersonal although, with rapidly advancing technology, progressively is interactive (Tatnell, 2020)
c. Either Asynchronous or Synchronous (Bengtsen & Jensen, 2015)
d. Using digital technologies to facilitate the research process. Mediated learning (Bengtsen & Jensen, 2015)
e. Demand high self-efficacy on both parties (Lee, 2007).
f. Parties to be 'Big' on regular and effective communication (irrespective of medium used) as essential to success (Severinsson, 2012).

Levels of Supervision

Supervision can be done at different levels starting from undergraduate where the supervisor, initially covenants with a student (or cohort of them) to conduct a given study under agreed standards or conditions (Kumar & Huat, 2011). It is noticeable that if a candidate is going to perform an extended, supervised research, many learners become anxiously worried. Students wish they could somehow avoid the step altogether in their academic journey. Reasons abound for this phobia. For some ECRs, supervised research appears breathtaking, exactingly demanding, involving and requires particular attention while for others, it is perceived as an opportunity to learn more and hone their research skills. First of all, parties agree on the topic, objectives and how the primary researcher is going to execute the enquiry. Supervision also can be at graduate level. This is where the student is about to become a master of a more focused and narrower area. The enquirer generates an elaborate thesis of considerable length, depth and breadth ideally, in an area of interest. The supervisor supports the student throughout this endeavor. At this level, the student is expected to argue a case, synthesize existing thought, reason out, probe ideas and to some extent, add to the existing body of knowledge. They could extend this study at higher level, if they so wished, in future. Evidently, graduate research level is higher, sharper and deeper than at undergraduate because the skill set demands to conduct research are more rigorous. Research supervision could be pursued at postgraduate and post-doctoral levels. Here, the researcher is more advanced, focused, possesses strong research competencies and investigates a very narrow area of what they probably explored at graduate level. They are now very clear, targeted and analyze one unique knowledge strand, drill deep so that by the end of their doctoral studies, emerge as distinguished and differentiated experts in their chosen field. Lee (2007: 681) describes expected outcomes of a doctoral graduate as follows: "The successful PhD student is expected to have made an original and valuable contribution to knowledge (Wisker 2005, 7)." They are to generate new knowledge beyond mere synthesis of previous thought (Kumar & Huat, 2011). To supervise students at each level requires unique blend of skills, competencies, maturity, wisdom, depth and breadth of knowledge. But research supervision demands more, including the ability to manage relations, work pressure, set and meet deadlines, avoid negative abusive attributes, inefficiencies, delays or client frustrations. Some of these elements are highlighted elsewhere in this paper.

Types and forms of supervision

Approach to supervision of students differs from institution to institution or individual to individual. At the present time, the most common types include solo supervision where one supervisor guides a student (this is the most common approach in Zambia today though changing), Joint or co-supervision where two supervisors (principle and co-supervisor) both supervise a student, cohort supervision (where a single supervisor takes on a group of research students) or team supervision, where a group of supervisors work together to jointly supervise a student (Tladi & Seretse, 2021; Tatnell, 2020). The latter two are most common in interdisciplinary research, that is, research transcending one discipline (Kalman *et al*., 2022; Bengtsen & Jensen, 2015; Lee, 2007). Co-supervision, according to Kalman *et al.* (2022: 452), "is defined as a form of collaborative supervision where two supervisors guide and support one supervisee's research work…" These, and other researchers argue that there are several drivers of co-supervision summarized as 'the 4Is for co-supervision development' namely : Interdisciplinary research, quality enhancement or improvement, Intersection collaboration and Internationalization respectively. Katowa-Mukwato (2023), argues for additional approaches including 1. Post graduate supervisor's conversations, 2. Blended group supervision (BGS), 3. Cohort supervision and, 4. Concepts, Object situation, Tact, and Assessment of output impact (C.O.S.T.A).

Importance and significance of Supervision

What is the importance of research supervision? Why make much of it? Why on conducing it? People conduct supervised research for various reasons but mostly end up answering a bugging question, remedy a problem or offer preliminary data useful to solve an even more complex issue. Contingent on the program, a relatively elaborate, well-structured supervised research thesis is the end product, without which, a student cannot graduate. In some rare cases, students may graduate without an academic thesis but with a far lower credential. But why should so much time be spent discussing it? A number of reasons could be summoned and brought to the fore. Firstly, supervision, in itself, is a teaching and learning process as both the supervisor and the supervisee are enquiring into, and usually, jointly investigating something except, that the student takes the lead eventually emerging the expert (Tladi & Seretse, 2021; Wilkinson, 2011). Taylor (nd) affirms that supervision, in itself, is learning and teaching. Kumar and Huat (2011:13 & 19) conclude that "supervision usually replaces the traditional classroom interaction that an undergraduate is used to. The interactions between the supervisor and the supervisee is crucial as it forms the apex of teaching and learning in post graduate education." Tladi and Seretse (2021:2) put it even more succinctly when they assert that "Research Supervision is a social interaction between two people…student and supervisor, working together towards the achievement of the same objectives…". At the same time, potential graduates showcase their skills to execute sound independent research (Lai *et al*., 2023; Pather, 2022; Fosso-Kankeu, 2022; Masek & Alias, 2020; Wisker, 2018; Kumar & Huat, 2011). Secondly, research supervision is important because it ensures that the study aims are met, resulting in authentic, valid, high quality and reliable data (Kumar & Huat, 2011; Biljon & Villiers, nd). Lee (2008:267) claims "A supervisor can make or break a PhD student." A third reason for research supervision importance is that it helps make the research journey memorable for all connected parties. The team jointly produces a ground breaking product or discovery that potentially could change the world. Academic research supervision is 'guided', implying that a student cannot undertake approved academic research without supervision, unless they pursue a private investigation. A more advanced person, usually an expert in that field, will walk with them throughout the process. This ideally takes care of quality concerns. Fourthly, the importance of supervision lies in the fact that it contributes to national development (Masek & Alias[1], 2020; Kumar & Huat, 2011; Lee, 2007). If the quality is good and results authentic, reviewers and decision makers can rely on the data. Managers use that research data to make decisions that foster development in a given context (Pather, 2022). In the fifth place, research supervision is a critical element to both effectiveness and enhanced quality. Kalman *et al*. (2022: 453) argue that "supervision is a key element of effectiveness." For those five reasons, supervision may be said to be extremely critical. In highlighting the importance of this role, the UCL site states the following: "It is a demanding role that draws on your academic expertise, relationship-building skills, and your ability to foster a stimulating learning environment." As such, it must be treasured. According to Severinsson (2012:215), "Research supervision needs to be valued in order to promote closer and more collaborative research."

Role of Supervisor

In one sense, the role of the research supervisor remains pretty standard, with minor adaptive variations. Ruth Tatnell (2020) makes the case for research supervision while acknowledging contextual and individual factors leading to variations in approach. In another sense, supervision is consistently mutating to address emerging issues as well as being intentional on some points such as teaching, coaching or modelling. Granted, various types and styles of supervision exist but the supervisor is both researcher and teacher. The UCL (nd:1) describes the role of the supervisor as follows: "typically, a supervisor acts as a guide, mentor, source of information and facilitator to the student as they progress through a research project." Severinsson (2012), and Daramola (2021), have highlighted several existing styles including abusive, combative (aggressive), reclusive, carefree, laissez-faire (overly democratic), micro-management and supportive, among others. This is helpful to know as one executes the supervisory role. But what is the exact role of the supervisor? To help us, the UCL Arena centre for research-based Education site briskly describes this for enquirers. Dr Alex Standen gives rich insights when she quips:

[1] Alias Masek and Maizam Alias (2020) in their paper 'A review of effective Doctoral Supervision: What is it and How can we achieve it?', *Universal Journal of Educational Research* Volume 8 # 6, p 2493 advance the argument that there is a correlation in development pace by ratio of researchers to a million population in a country. They compare Malaysia (1,643/million) and Japan (5,158/million) to show why Japan is far more developed. A check for Zambia showed that no data was available suggesting that this parameter is not presently tracked. It is thus impossible to tell how Zambia is faring relative to other global south nations. Comparatively, Kenya had 169.3/million and it appears this parameter only begun to be tracked in 2022. Refer to this site: https://data.uis.unesco.org/index.aspx?queryid=3685, accessed on 26th July, 2024.

> "The role of the research supervisor is to guide and support students through a research project (typically PhD, but also MRes, MPhil, etc.) and can be one of the most exciting and challenging roles that academic staff take on. The relationship between PhD student and supervisor is a unique one which changes and evolves over the course of the project. Fundamentally, the supervisor's role is to enable a student to conceive, design, produce and disseminate their own research and to develop their student's competencies in both research and transferable skills…"

Kumar and Huat (2011:19) state that "the fundamental role of the good supervisor is to act as mentor: supporting, encouraging, building confidence, and being aware of changing needs of the supervisee." From this description, it is evident that the role mutates even within the supervision journey from almost micromanaging in the initial phase to total liberty for the supervisee towards the study end (Thomas, Packer and Dolan, 2024). Learners often start off dependent on their supervisor but progressively become independent. This is consistent with what Severinsson (2012:215) found that "research related tasks of research supervision comprised monitoring the research process, providing encouragement and critical comments on drafts as well as fostering an academic role." Kumar and Huat (2011: preface), highlight the fact that "the right roles played by the post graduate students and their supervisors ensure quality research output and quality graduates." Additionally, these same thought leaders (i.e. Kumar & Huat, 2011: foreword), opine that "duties of a supervisor do not end until the supervisee graduates." Many times, the nurtured relationship transcends the research period into blossoming and enduring professional collegiality.

Approaches and Models to Research Supervision[1]

Established researchers have different approaches to supervision (Tladi & Seretse, 2021). Each exploits what works best for them in a given context (Pather, 2022; Biljon & Villiers, nd). Lee (2007: 682), highlights 4 approaches namely Functional, Critical thinking, Enculturation and Mentoring as possible ways supervisors navigate through their work. Depending on one's leaning or inclination, a supervisor drives their supervision route accordingly. For instance, the functional approach focuses on what the graduate will be able to do after wards and the steps there to while the critical thinking route seeks to engender a probing questioning mind about everything leading to uncovering, creativity and unveiling new discoveries. The enquiring mind refuses to settle for a position unless evidence is forthcoming to support a proposed solution. It is believed that a critical probing mind will process through before acting. Enculturation, on the other hand, aims at initiating early stage career researchers into staying in academia as researchers pursuing a career in that sphere. Mentoring aims at discovery leading to transformation of the individual. According to UCL (nd:4), not every PhD goes on to become an academic. The site states "Beware that supervision is about helping students carry out independent research-not necessarily about preparing them for a career in academia. In fact, very few PhD students go on to become academics." In short, each of these approaches has a goal in mind whether to impart skills, enculturate (i.e. initiate) someone to a community of practice, replicate themselves or some such. That said, it needs to be noted that "Research supervision is…mutual…," so concludes Severinsson (2012:215).

Styles of supervision

Although earlier alluded to elsewhere within this paper, a more focused review is valuable. 'Styles' are preferred ways a research supervisor uses to execute their function. Each supervisor, with time, eventually settles for the most comfortable and effective way to conduct research supervision. As others have rightly quipped, there is no universal style. A 'one size fits all' proposed style will not hold (Thomas, Packer & Dolan, 2024; Katowa-Mukwato, 2023; Tladi & Seretse, 2021). UCL (nd:4), states: "Every research supervision can be different and equally rewarding." The same source elsewhere (p1), goes on to argue that "Every supervision will be unique. It will vary depending on the circumstances of the student, the research they plan to do and the relationship between you and the student." The ZDP and social presence theories come into play at this point. This claim (i.e. of Katowa-Mukwato) accords with other thought leaders in the field like Lambert, Niclasse and Charlier (2020) or Taylor, Kiley and Holley (2021), among many others. Again, UCL (nd:3) states that "Supervisory styles are

[1] Elvis Fosso-Kankeu (2022:49), categorizes the approaches (strategies) as: 1. Laissez-faire, 2. Directional, 3. Contractual and, 4. Pastoral. Another set of thought leaders, Amanda Thomas, Rhainnon Packer and Gina Dolan (2024:7) categorize these as 1. Laissez-faire, 2. Pastoral support, 3. Directional and, 4. Contractual model. As can be seen, these are similar, if not the same elements.

often conceptualized on a spectrum of laissez-faire to more contractual or from managerial to supportive…every supervisor will adopt different approaches to supervision depending on their own preferences, the individual relationship and stage the student is at in the project…no one style fits every situation: Approaches change and adapt to accommodate the student and the stage of the project." Shaw and Lawson (2015), would affirm this claim, though emphasize the on-going pastoral concerns from an Evangelical perspective. What is feasible and comfortable for one may not necessarily be true for the next. And yet research supervision has to bear client (i.e. student) needs in mind. A style may be defined as 'the researcher's preferred method of executing research supervision bearing client needs'. This crafted definition is consistent with Social presence and ZPD theories that argue for interactions between parties as helpful for maturity and growth. Severinsson (2012:216), defines style as ". the manner in which a supervisor carries out the supervisory process and interpreted as a manifestation of the supervisor's understanding of the student's research needs (Kam 1997)." Other potent definitions exist on the market but this study's crafted definition highlights at least three basic elements namely 'preferred method', 'research supervision', and 'client needs'. These three must harmonize well to generate a shared desired outcome in any research undertaking. A number of styles have been suggested by thought leaders like Severinsson (2012), highlighting aggressive, abusive, reclusive or even toxic supervision, although the latter may not necessarily be an intentional approach per se. It often stems from personalities coming to bear on the process. The goal of the adopted style is to facilitate efficient and timely completion of a given study. According to Lee (2007:685), "…Wisker *et al*. (2003a) argue that emotional intelligence and flexibility play a big part in working with students through to successful completion." Severinsson echoes similar sentiments. As earlier hinted at, supervisors need relevant soft skills to succeed at this task. Kumar and Huat (2011:17), rightly quip "Supervisor and supervisee are interconnected in a complex, contractual system of rights and responsibilities which highlight the centrality of accountability and quality assurance."

Standard Linear Path and Process of Research Supervision

Research supervision takes place in various ways as earlier hinted at but each supervision session takes a path through several stages. The chronological linear path would include:

1. Background and introduction of study (chapter 1)
2. Literature review (chapter 2)
3. Methodology (Chapter 3)
4. Findings presentation and discussion (Chapter 4)
5. Conclusion and recommendation (Chapter 5)
6. Abstract and other elements fine tuning

A frame work is essential to clarify the research supervision process. Note that each stage takes some considerable time frame with various elements under it. Most of this can be considered to lie under what Elliot *et al*. (2020), consider as the 'hidden curriculum'. Jassim et al (2015) have given a helpful framework for the preliminary stages that eventually shapes the study. Figure 1 is derived from the work so that at a glance key issues are identified.

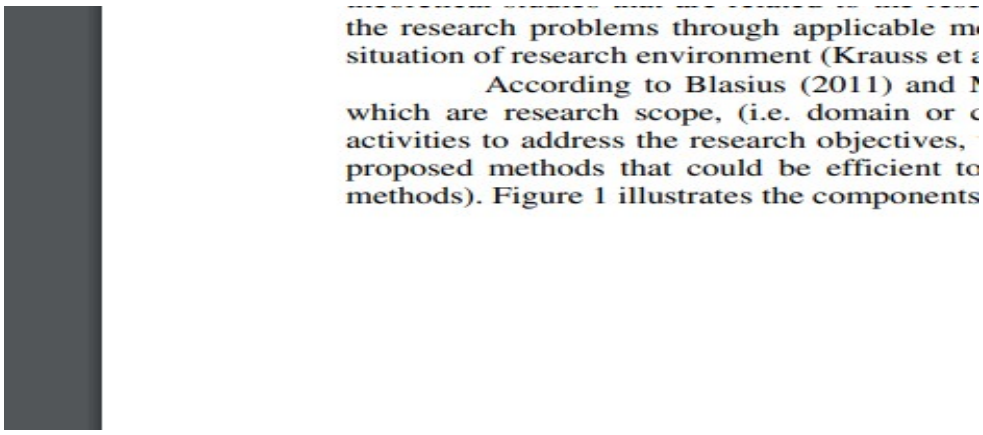

Figure 1: Elements of the 'basement stage'

Source: Jassim et al. (2015).

Once the basics are in place, other aspects come into play such as the breakdown of the study into chapters. The basement stage identifies what is needed and from these identified elements, the study is divided into at least five standard chapters as earlier suggested above. Although Jassim et al (2015) offer additional equally important stages, we think this one is foundational upon which other stages build. For instance, under the first chapter, following the title determination, the supervisor works with the student to highlight the back ground to the study, its necessity, rationale, significance and ethical considerations. This chapter also highlights the ideal, current situation and the perceived gap (i.e. statement of the problem) needing filling. Chapter 1 situates the problem and study objectives buttressed by relevant research questions. To achieve all this, a lot of supervisor-supervisee collaborative thinking and prudent probing of the matter takes place. If this chapter is not well done, the rest of the enquiry is potentially adversely affected. This is only the first chapter couched in a three chaptered proposal that is then evaluated amended and then each chapter enlargement (expansion) commences. Various authors have deliberated on the research process attempting to streamline and fine tune to ensure clearer process path. For instance, Jassim, Mahmoud and Ahmad (2015:1), authored a helpful paper entitled 'A framework for Research Supervision' where they proposed and argued that research supervision goes through several stages before a good quality product was achieved. Jassim et al. (2015) asserted that supervision basically had two layers to it namely, 1. Abstract and 2. Detail. By 'abstract', these thought leaders claimed that there were six steps under it and 'detail' had to do with the various elements under each of those six abstract elements. Jassim *et al*. (2015:1), stated:

> "The proposed framework consists of two layers, abstract and detail. The abstract layer consists of six stages which are; basement stage, review stage, data collection stage, data analysis stage, development stage, and testing and validation stage. These stages, according to our framework, are mandatory; in other words, any research must go through the stages. To complete the task of each stage, a number of steps are defined, which constitute the detail layer."

Clearly, this study adopted standard nomenclature though Jassim *et al*. (2015), used other terms to articulate the same thing but with deeper insights. Their work is worth referencing on this helpful framework. An additional point worth mentioning is that the supervisor and supervised convene scheduled meetings along the research process timeline to review, plan, refine or suggest ideas. In the said meetings, the supervisor guides the student to manage their study, mentors and monitors them for progress. Different levels of management take place from closely monitoring to aiding and releasing the learner reach their full potential. In the process, a bond is built between these parties and at times, transcending the research study, especially in protracted enquiries like the PhD.

Author experience in the Zambian supervision turf

Some elements shared in this section are drawn from my experience as a researcher. I have vast and deep experience across different spheres over my career and here highlight some key relevant features. This researcher coordinated university wide research, conducted thesis defense sessions, sought and matched suitable supervisors with students. Then I functioned as an external examiner at Africa Christian University (ACU, Zambia), research (and mentor) supervisor at Trinity Graduate School of Apologetics (TGSAT, India) supervising several students dotted across the world, some as far off as the Solomon Islands or scattered across Africa. In some cases, I have never physically met the students in person but remotely (via mediated technological means). To execute my role, there has been need to agree on a number of key things like deadlines when the students submit in their work for review, feedback, constructive critique, comment and offering helpful suggestions. In case of unclear communication, queries fly to and fro until clarity is arrived at. In other instances, cultural differences have affected the supervisory relationships (resulting in different student reactions including total withdrawal from the program) and progress hence the need for relevant refined, mature multicultural research supervision soft skills. For instance, I supervised research at both under and graduate level while serving at Northrise University (NU) for several years where I observed that supervision is a critical component to helping students navigate their way to producing acceptably good work. It can be argued that the quality of work output reflects the quality of supervisor skills. If the work is shoddy, supervisors do not want to be associated with nor attach their names to it lest they lose face. Kumar and Huat (2011: foreword), observe that: "When things go well and a student graduates, the supervisor is full of pride and feels not only that the hard work was worth it, but also how privileged one is to have played a role in the student's growth, learning and success." As a supervisor and coordinator, I sat down with novice researchers to introduce research concepts without assuming anything. Once satisfied with their progress, I assigned them a fitting supervisor. As a supervisor himself, this researcher would initially meet with students to agree (or refine) on the topic, objectives and plan the proposed study with students. Once parameters were agreed, action followed, intermittent with periodic scheduled meetings to review progress, amend, talk, discuss ensuring sufficient flexibility yet at the same target achievement. At graduate level, students had slightly over six months to complete their project while for post graduate studies, it may take several years to complete (Thomas *et al*., 2024), given the protracted nature of their enquiry. Interestingly, even they (i.e. graduate students) dread the study process despite exhibiting relatively far better potential research competencies and skills than their undergraduate counterparts. Phobia appears universal. The researcher had various experiences suggesting that supervising students required good interpersonal skills. Examples will do. At times, students came with and maintained a laissez faire attitude, hoping to be helped sail through by their supervisor. Others were reluctant and evidently paralyzed by debilitating research phobia as was the case in one instance where a student suffered chronic fear and dreaded to defend her thesis hence, settling for a lower level credential. It was, however, clear that she actually generated the document herself but could not come to terms with the idea of standing before a panel of examiners. In another related case, the student stepped up to defend but during deliberations suffered stage fright. The session was momentarily disrupted until the candidate stabilized going on to successfully defend. A third case had a student leap ahead of his supervisor, did all the required work, collected data, generated a narrative and presented the well-polished final report. Obviously, his submission was rejected but the student argued that due to delayed supervisor feedback and, given the limited time frame and out of frustration, he resolved to proceed on his own. Then there was a student he supervised who, along the way, fell extremely ill and could not continue in the agreed set time frame. The institution had to decide either the student restarted the research or handed an extension. Thankfully, the patient was granted an extension and eventually graduated.

Perceived contextual hindrances and challenges to research supervision

Having been in the research supervisory role for many years and interacted with practicing professional colleagues, listed below are some common issues encountered as budding experts do the work of research supervision. Taylor (nd), has highlighted some of these from the European/UK context but a few have been integrated relevant to the African context. According to Erichsen *et al*. (2014:330), as cited in Bengtsen and Jensen (2015), net-based doctoral supervision is described as being more "difficult and challenging, [as] it requires more effort, focus, and commitment than traditional programs, one must also have more self-discipline, be highly organized as well as have a greater responsibility for one's self." All renowned research supervisors have once been amateurs before. Through experience, induction, hind socialization, orientation, interest, resolve, persistence, resilience and enquiry, they have arrived at conclusions influencing their current practice and approach today. Hill (nd), argues that each supervisor eventually crafts an approach that best works for them and their students. This section highlights challenges likely to be encountered during online supervision in an African context. Note that this is not a comprehensive list of contextual challenges faced:

a. Lack of sufficient time for effective qualitative engagement with students, review work and give sufficiently detailed, clear, qualitative and timely feedback, largely because of too much core work (e.g. too many classes to teach, high student numbers or simply no time for anything else). Tatnell (2020:5), observed a similar trend in Australia evidenced by the following excerpt,

> "Supervisors, who experience pressure to publish often high teaching and marking load, as well as administrative work, may seem curt and unapproachable in written correspondence, lacking the detail and diplomacy often provided by the use of tone and expression…may lead to each developing inaccurate perceptions of the other in terms of ability, responsiveness, and intrapersonal qualities."

Pressure contributes to lower quality supervisor responses. Pather (2022:47), would add his voice when he opines that, "Research shows that heavy academic and teaching duties are one of the many obstacles that impede academic supervision…" The earlier this is remedied and managed, the better for all parties concerned. This could include the research period length. Time challenges (including management, zones etc.) for both the supervisor and supervisee. Kumar and Huat (2011: 18), state "developing project management and self-management skills." are essential to success. Pather (2022), observed that often supervisor and supervisee did not find time to connect, hence affecting progress. Discipline is essential on both sides.

b. Low or no research culture, incentives or motivations thereto in given contexts.
c. No designated supporting official research structure i.e. Research office. Half the time, it appears a part time or 'by the way kind' of thing. On the other hand, Lee (2007), while citing Hockey (1994), lists three challenges faced by early stage researchers as including: Isolation, time management and supervision. If at all the structure exists, it is not granted the desired primacy or may not even appear in the organizational structure at all. This speaks volumes. Additionally, no provision for enabling research and development in institutional structure, operations or rhythm. Lack of incentives to engage in supervision could be another reason. Institution not supportive and thus not prioritize research. What is visibly commended (by opinion makers) tends to get quicker support and attention.
d. Lack of supervisor capacity building. Tatnell (2020:1), observes the following

> "…Often, research supervisors have no specific teaching (or) training, relying instead on their research ability and experience to guide them. As a result, supervisors tend to develop their own supervisory practice 'on the job', often based on their own experiences of supervision as students, emulating these when positive, or avoiding repeating the mistakes of their own research supervisors…"

It appears supervisors have to learn on their own, often by trial and error. Lee (2007), offers some suggestions including discovering underlying concepts for supervision, Continuing Professional Development (CPD), intentional training, among other interventions. Pather (2022: 96), adds his voice stating, "However, research shows that many academics undertake the role of post graduate supervision without any formal training or orientation to the task at hand."

e. Absence of Academic promotion policy or clear research career progression roadmap. In the absence of this key policy, academic stuff motivation is low or probably absent because of lack of incentives.
f. Sometimes, faculty members have no interest but compelled to engage in research supervision by employers. They do so out of necessity rather than personal desire or voluntarily. Furthermore, there are no extrinsic or intrinsic incentives motivating growth, one of them being the academic promotions policy. Kumar and Huat (2011), made similar observations in their study.
g. Assumptions: Administrators assume that "since you have a graduate degree and are a teacher here, you must supervise research". University research coordinators have been guilty of having done this at one time or other. Kumar and Huat (2011:17), opine "…for most supervisors, supervision is a job entrusted to them by the institution they work in and it is essential that they understand their role in a professional way."
h. Low competence, limited exposure and type of students. Low digital fluency among Supervisors (and students). Some students either suffer phobia for or were not sufficiently skilled to navigate virtual spaces, especially for educational purposes. Pather (2022: 47), though suggests that challenges could be either side. He states "The challenges affecting the quality of supervision may be divided into both supervisory and student-related factors…" This paper highlights some of these problems from the Zambian context. These include:

1. Background (poor research). Pather (2022), noted inadequate preparations of candidates as a concern needing attention.
2. Attitude (averse, fearful)
3. Phobia (fear of the unknown)
4. Low self-efficacy is one problem but it could be coupled with low student diligence or motivation. This affects progress, engagement and resilience.
5. Learners are trained to only receive and not probe (Shaw & Lawson, 2015). From kindergarten all the way to University, students in the Zambian context are geared to passively sit by, uncritically receive instruction and merely regurgitate. How then can they suddenly change? In some cases, they copy entire text books word for word and this is considered 'learning'. The shift and change in University education is therefore too drastic. For some contexts, it appears rude, unwise, risky and impolite to probe matters, disseminated by the venerable teacher, especially if they are older.
6. Late responses from towering supervisors to weak, fragile, dependent students has negative effects. Wide unregulated power distance between supervisor and supervisee. This impacts many things including communication effectiveness. Uneven power dynamics can be detrimental in some cases (Thomas *et al*., 2024; Tladi & Seretse, 2021). Kumar and Huat (2011: 18), assert that "Supervisors and supervisees relate in ways that are unequal and constantly changing." This, in itself, suggests problems if incorrectly navigated or handled.
7. Unrealistic fuzzy (and sometimes unrealistic) expectations (Tladi & Seretse, 2021; Kumar & Huat, 2011). If boundaries are not clearly drawn, this may lead to further problems in due course for either parties. Pather (2022), emphasizes the need to have reason and clear boundaries from the outset. According to Kumar and Huat (2011: foreword), "poor understanding of roles supervisors have to play" in the Zambian context negatively affects research supervision effectiveness. Early agreement within the process helps mitigate future misunderstandings.

i. Perception: Research supervision perceived as hard work, time consuming and 'eating into' one's private time. The activity requires more effort. Kumar and Huat (20211: foreword), opine "…next to being a parent, [Research supervision] is one of the hardest jobs around.'
j. Too many students to supervise at a given time. The supervisor feels mobbed, crowded and overwhelmed by the cohort lumped upon them to supervise. Kumar & Huat 2011:36 observed that "In some Universities supervisors are burnt out because of the massive amount of [research] editing they do." Said differently, supervisors are probably overwhelmed.
k. Simultaneously engaged in multiple competing duties (and priorities) at the Institution. The supervisor may be coopted into several important university community activities including sub committees, Senate, Institutional Review Board (IRB), Associations, Mentorships etc. Days are jammed with activity, sometimes spilling over into the weekend and one's private life. With the advent of technology, there is hardly any private life or space left. Lai *et al*. (2023:3), affirm this claim when they state: "Supervisors are frequently burdened with multiple responsibilities…"
l. Lack of 'tools for work' e.g. labs, funding, institutional support etc.
m. Professional burn out due to excessive and unrelenting work avalanche bombarding from all angles (Thomas *et al*., 2024; Lai *et al*., 2023). This does not necessarily entail physical travel or changing location but the sheer volume of competing priorities simultaneously demanding attention that can have its toll on the individual descending into high stress, depression, compromised wellbeing and eventual health break down (Thomas *et al*., 2024; European Commission, 2021; Lambert, Niclasse & Charlier, 2020). With ascending age, individuals need to progressively tone down but the temptation is to go the opposite direction given hind accumulated garnered experience or enhanced capacities (Kumar & Huat, 2011).
n. Topic, objectives, questions determination and proposal development at times take a lot of time to arrive at eating into the valuable project time line provision (Pather, 2022).
o. Erratic and unreliable power issues e.g. in Zambia 2017 to date. The 2023 drought, for instance, has led to more unprecedented power outages in the country as long as 21 hours in some instances.
p. Limited access to affordable smart devices. In the global South, less resourced countries may pose limitations to device access and if they are accessible, could be beyond reach for the average individual. Sichone (2023) found that cost and access were twin problems impeding eLearning in Zambia.
q. High cost of connectivity. Bundles are pricey for the average person on the street leading to further divides.
r. Communication challenges such as lack of clarity, language, expressions or misunderstanding etc. (Salehe *et al*., 2023; Pather, 2022; Tladi & Seretse, 2021; Tatnell, 2020).
s. Weak interpersonal relations and bond (at a distance students). Low or no sense of collegiality and

community (Tatnell, 2020; Daramola, 2021). Tatnell (2020: 3,4), highlights the fact that " While on campus students benefit from physical closeness to their supervisors and peers, online students miss on incidental contact, which can be just as helpful, if not more so…"

t. Inability to effectively transmit (procedural or practical knowledge) skills to learners (Tatnell, 2020; Kumar & Huat, 2011). Difficult to motivate, monitor as well. Practical courses especially pose this challenge.
u. Impersonal, remote (Tatnell, 2020; Daramola, 2021). Students or supervisors at times feel isolated, abandoned, vulnerable and alone (Thomas *et al*., 2024). This can be stressfully frustrating.
v. Ineffective research concepts course (for students) or wide time difference between course and practical. Salehe *et al*. (2023) observed that research concepts course was unhelpful and ineffective, probably due to the time gap between course completion and actual research practice.

An opportunity could lie in the emergence of Generative AI (e.g. Chat GPT 5) and its impact on Research Supervision needs exploring. Further change dynamics ensue as well. Lai *et al*. (2023) have explored this area but deeper and on-going enquiry into this unfolding area needs to be done. It could further disrupt the current research supervision norms. They give implications for practice and policy (p1). Their study also listed six positive impacts on research quality and output. These were: '1. Efficiency 2. Enhanced quality 3. Scholarly and professional development 4. Better critical thinking 5. Enhanced student confidence and autonomy and,6. Better supervisory relationships'. Note that this study was conducted in a relatively more advanced context (i.e. Australia) and may not necessarily hold true in all contexts at the present time but this is a sample of what could be in future as Africa develops and becomes digitally fluent. Policy is key to get all these things going.

Proposed solutions towards effective Research Supervision

The paper proposes possible solutions that could help enhance research supervision quality and efficiency.

a. Strongly consider online research supervision as potent credible alternative option (Lai *et al*., 2023). Continuously improving educational technologies such as generative AI supported Learning Management Systems (LMS), School Management Systems (SMS), Course Management Systems (CMS), among others make this all the more feasible. They make aspects of research supervision process efficient and easier in the long run. Kasim *et al*. (2023), claims that online research supervision is now preferred given its evident advantages. This route should be encouraged and developed as an alternative rather than a substitute to the well- tried and tested traditional approaches. Strategically, this avenue and opportunity helps mitigate costs, enhances productivity, flexibility advantages and finally, it is increasingly an all pervasive-inescapable reality of contemporary 21st century life.
b. Intentional capacity building, sensitization for research supervisors; foster digital skills development (Tatnell, 2020). Sponsor members for training, workshops, courses (e.g. on research skills and supervision) etc. Masek and Alias (2020), strongly encourage on going capacity building. Fosso-Kankeu (2022), Masek and Alias (2020), Hall *et al*. (2019), Carapetis (2019), Bitzer (2007) and Lee (2008), offer helpful tips to enhance research supervision capacities and skills. Fulgence (2019), would add her voice by emphasizing the need to consistently improve on what she terms as 'digital fluency" where by supervisors are more than mere users of technology but skilled enough to exploit that avenue to foster their work. If there is a gap between student and supervisor in terms of these skills, there is a danger that some tension may arise in time.
c. Clear career path/progression route within research for emerging early stage researchers. Individuals should know where they may end up. A number of reviewed Academic promotion policy documents around the world (e.g. University of Rwanda, Mulungushi University, CBU, UNZA, Engineering Institute (Australia), University of New South Wales (Australia), Makerere University, National University of Ireland (Cork), Heriot Watt University, Appalachian State University (USA), Universite Des Mascareignes, among others) state a clear path but are structures actually in place to support such a route in the African setting?
d. Intentionally and heavily lean towards the recruitment, efficiently facilitating, motivating, retaining highly capable candidates for graduate and post graduate studies. These will most likely possess high self-efficacy and easily transform into potent researchers in due time. According to Masek and Alias (2020), taking time to carefully select candidates help matters over time and in the end contributes to effective supervision. This suggestion may run contrary to the current drive towards inclusiveness and equity elements around education access. Due care must be exercised to manage this tension.
e. Set shared realistic expectations from the outset, review, scheduled meetings and attendant boundaries (Tatnell, 2020). This mitigates frustrations either side. Kumar and Huat (2011), Pather (2022) and Thomas *et al*. (2024), among others echo similar sentiments.
f. Periodically reflect on, review and evaluate current research supervision practices, student satisfaction,

how things are going for further improvements. Pather (2022), Hall *et al*. (2019), Fosso-Kankeu (2022), Carapetis (2019) and Gray (2016), all urge continuous learning for growth, maturity and improvement. Their voice is worth heeding.

g. Check on the course load, commitments and work that respective faculty members providing research supervision and writing. They need leverage and space to do a good job hence the need for this consideration (Pather, 2022; Wilkinson, 2011).
h. Assign/match mature seasoned supervisors to students who could co-supervise with raw emerging supervisors for mentorship. This settles learner anxiety (Fosso-Kankeu, 2022; Pather, 2022).
i. Offer appropriate timely incentives to motivate research uptake e.g. remunerate timely and well, offer time for research work, sponsor studies, sponsor paper publications costs, conference attendance, training etc. (Salehe *et al*., 2023; Fosso-Kankeu, 2022). Create an enabling research culture that fosters enquiry.
j. Draft and launch clear specific research supervision policy, procedures, codes of ethics and guidelines, road map, direction, expectations and benchmarks. If the policy is stuck in draft form or is unclear, it remains inoperative as happened with the DODE (2010), HEA ODL policy (2021) or Education ODL policy (2012) in Zambia.
k. Maintain a robust orientation induction program especially at the commencement of any study time. This is distinct and apart from the research concepts course but a kind of refresher course, logistics and house-keeping setting session. The length may vary but is very critical to 'on board' the research student, especially those destined to carry out protracted research study such as the PhD. If students know where to get support, help, materials etc., their anxiety levels are somewhat mitigated. Shaw and Lawson (2015:63), make much of this issue. They assert "Each…program should begin with an induction process for all new students. This usually takes the form of a course run in the first few weeks of the program, reflecting the specific needs of doctoral students and providing appropriate information about the institution, its programs, codes of conduct, student responsibilities, facilities available, health and safety issues…" This may seem a trivial exercise but makes a big difference. From experience, students that missed these initial sessions or were not thus oriented tend to experience multiple problems and challenges along the way. This challenge could apply to novice supervisors as well.
l. On-going orientation and sensitization of all stake holders to appreciate the critical role research supervision plays. This is a quality improvement function. Masek and Alias (2020), among other thought leaders urge this to foster supervisor skills towards expertise.
m. Sensitivity to client (learner) needs, circumstances, empathy (Daramola, 2021). Severinsson (2012: 215), found that "problem solving, research preparations, communication and interaction appear to be aspects of supervisory style…" According to Lee (2007), flexibility too is essential. This helps smoothen the process for either side.
n. Assigned supervisor availability, accessible, friendly, motivating, encouraging, timely feedback etc. (Tatnell, 2020). They should be approachable, helpful, good listeners, counselors etc.
o. Good time management (Kumar & Huat 2011). Students and supervisors struggle a lot with this but project time management skills are essential to success.
p. Develop and launch clear and sound research supervision framework. This helps student and supervisor clearly know what they are to do, where they are and hope to go. Masek and Alias (2020), Jassim *et al*. (2015) and other experts insist on the need of a workable but clear and flexible supervision framework. This should stipulate the research stages, steps essential and what is expected during the process.
q. Ensure an effective research enabling structure (e.g. department, coordination, policies, code of conduct etc.) and system (e.g. LMS/CMS or equipped labs etc.) exists in the institution to facilitate and support research (Masek & Alias, 2020).
r. In some cases, (especially in Africa), funding to enable desired research execution is always an issue. If this could be sorted before students arrive by say, setting aside a dedicated annual budget provision or linkages to funding sources (e.g. with industry) for applied research for instance, this would greatly help research supervision. Masek and Alias (2020), suggest that this is a problem area in their Malaysian context and most likely the same in Zambia too.

Materials and Methods

To execute this primarily qualitative (with limited quantitative elements) study, the researcher exploited two distinct but related approaches. The first was a longitudinal approach while the second approach was snapshot interviews among serving professionals to gain an understanding a current understanding. For the first approach, the researcher used longitudinal informal qualitative observations with and on various parties across the years including faculty members and students for over a quarter of a century (i.e. 1998-2024) Starting off an emerging

researcher, scholar research supervisor and Administrator in at least five different spheres and institutions namely World Vision International (Zambia)[1], Africa Research (ARU), African Christian University (ACU), Northrise University (NU), ZCAS and Central Africa Baptist (CABU) Universities, respectively. This was a form of 4 L (i.e. Look, Listen, Link and Learn) longitudinal survey where the researcher informally interacted, observed, analyzed and documented findings over the long haul. Drawing on Hill (nd, 2011, 2015), and others, the researcher adopted some elements from 'supervising practice-based doctorates', otherwise called professional doctorates. Dr. Hill, in referencing authorities like Schon (1983), makes the case for practice research arguing that it is equally important and must be supervised while developing models and approaches to enquiry. In a sense, this study could be dubbed a transect walk within academia ecosystem exploiting informal interactions with study participants in the context of action research. 3 L (i.e. Look, Listen and Learn) surveys are commonly used in Project and Programme Design Management but the principles equally could apply to academic qualitative study. The enquiry also drew on Okeke-Uzodike (2021)'s reflexivity approach to enquiry. Pather (2022:46)[2] equally used a reflective approach to his study which he described as "A reflection on past graduation practice: a personal reflective lens". This is a kind of research where the enquirer is part of the activity, aware of their biases, inclination and yet seek to gather qualitative data. As earlier stated, Okeke-Uzodike (2021), used this approach to conduct research in HEIs in South Africa, highlighting challenges faced by both supervisor and supervisee. The approach affords reflection for the enquirer, leading to improvements and efficiencies. Africa Research University is a graduate Research University situated in Lusaka catering for students from across the world. I conducted part of these enquiries while studying for a PhD at ARU, through peer interactions with colleagues and supervisors during Academic colloquiums (2021-2023). The embodied interactions afforded in-context enquiries and open discussions on how to efficiently perform quality research, better manage challenges and what parties recommended. At African Christian University, this researcher was external examiner of a thesis which revealed a number of pointers as to how research was conducted at the said institution. At Northrise University, the researcher was Head of University Research for nearly three years where he coordinated, planned, trained and conducted research supervision for both under graduate and graduate supervisors and students. Apart from supervision and coordination, the researcher taught Research concepts courses, tutored, marked, convened defense sessions (at proposal and final), helped students and faculty members conduct research or supervision. He was part of the University Senate and Institutional Review Board (IRB), the university ethics wing. Additionally, the researcher conducted joint international research with Baylor University (USA) faculty members as well as initiated research preliminary collaborations with the Fonty's University, Netherlands. At ZCAS University, he was appointed co-supervisor of a doctoral candidate. In that role, he supported the principle supervisor and offered insights to the DBA candidate. Presently, he presently serves as the DVC for Research and Graduate Studies component while engaging in online research supervision with all levels of students (undergraduate to doctoral) dotted around the world. The researcher specializes in qualitative study research supervision. One additional way he collected data, was attending virtual, local or international Academic forums, workshops, symposiums and events where various pivotal academic issues were discussed and shared. In many senses, this research has been a kind of (auto) ethnographic 'lived experience' where data is collected as scenarios have unfolded, reactions noted, documented and lessons learnt. Daramola (2021) and to some extent, Okeke-Uzondike (2021), carried out auto-ethnographic research in a number of African Universities. Their insights were helpful to this study. They found that research supervision varied from individual to individual. Most supervisors conducted supervision as they themselves were supervised and only in rare occasions altered their approach to suit changing contexts and client demands. This claim is consistent with what Shaw and Lawson (2015) or Lee (2008), found in their respective studies. From Lee's assertions, supervising as one was is not necessarily a bad thing but needs a careful improvement while bearing in mind client needs (Lee, 2008: 267). Many settled for what worked best for them. At other times, this researcher collated data while interacting with his clients. Being Head of University Research (NU), for instance, helped him to meticulously and patiently listen to clients with a view to find effective ways of best to mitigating, resolving or ameliorating student and supervisor concerns. Respondents were purposively selected and included in the sample using two approaches: Convenience and Snowballing. This afforded him flexibility and allowed him conduct these interviews over time and freely. Informally interviewing several people as well as actually engaging in supervision helped mitigate bias. This interviewing of serving professionals (i.e. in 2024) was a way to triangulate.

[1] The researcher carried out periodic on site field research (i.e. data on children in program, program designs, evaluations etc., 1998-2014) for the organization and collated primary raw data, thereby honing his research skills.

[2] In our view, Shaun Pather (2022:46-58), offers some helpful research reflection points in the paper 'A reflection on Post-graduate practice…' Shaun argues that research is foundational to national knowledge creation, hence its criticalness. Note that rather than explicit auto-ethnographic application, Pather (p. 48), exploits what he terms as 'Self-reflective approach'. According to him, "self-reflection…may also be referred to as introspection, describes a conscious mental process relying on one's own thoughts, interpretations and beliefs…"

The second approach was the standard data collection approach where the researcher carried out snapshot interviews among practicing research supervisors. A sample of 13 HEA accredited institutions were selected from a total population of 63 HEIs in Zambia[1] using and inclusion and exclusion criteria. Institutions that responded were included in the sample while unresponsive ones were excluded. Respondents (within selected institutions) were purposively sampled and perceived to offer relevant information at a given site. Additionally, particular attributes were essential for inclusion which included that respondents were serving and active University Academics, were actively engaged in research supervision, had served at least five years at their institution and had supervised at least two students to successful research thesis completion at any level. These attributes ensured that the right and relevant sample was picked Table 1 below shows institutions included in the sample

Table 1: Sample breakdown for study (institution identity withheld)

#	**Institution (encrypted)**	**# to be interviewed**	**Type of institution**	**Location (province)**
1	A	1	Private (Pv)	CB
2	B	1	Pv	CB
3	C	1	Pv	Lsk
4	D	1	Pv	CB
5	E	1	Public (P)	CB
6	F	1	P	Central
7	G	1	Pv	CB
8	H	1	Pv	CB
9	I	1	P	Lsk
10	J	1	P	CB
11	K	1	P	Muchinga
12	L	1	P	Lsk
13	M	1	P	CB
14	N	1	Pv	CB

Source: Research Data (2024)

The study exploited an interview guide with extremely limited quantitative elements. This was perceived the best approach because the study aimed at yielding facts and thoughts that respondents had actually experienced over time. Brief interviews were conducted and responses noted, recorded reviewed and analyzed. Respondents were interviewed in one of ways. Some were interviewed in face to face interview format while others were interviewed by phone. Still others responded by email whose feedback was documented. Once all data was collated, it was input into an excel sheet where data was analyzed and then tabular presentations generated as evidenced in the findings section. Following analysis, data transferred to a word document ensuring that the data integrity. Note that the feedback in excel sheet captured responses in binary form as such:

> # 1 stood for 'yes' or respondent gave accurate answer while # 0 stood for 'no' or wrong response was given. It (i.e. #0) also meant that the respondent had no answer to the question posed.

The word document captured the narrative qualitative responses, some of which quotes have been highlighted in this report. Data interpretation and expressed lead to discussions, conclusion as recommendations in the last section of this paper. Using both approaches, the researcher was thus able revert to his experience as a triangulation approach to the data findings from verbal interviews. In the event of an extreme finding, this triggered further review of the primary data. Additionally, study findings were echoed against literature reviewed during this exercise. Consistency or deviations were highlighted where found.

Findings

The study aimed at establishing the status of research supervision related processes as well as suggesting online research supervision as a credible addition or alternative to existing practices. The originally intended

[1] Source: https://heaims.hea.org.zm/frontend/web/site/institutions, accessed on 10th October, 2024.

institutional sample was 14 but 12 responded giving a response rate of 86%. This is represented in Figure 2 below:

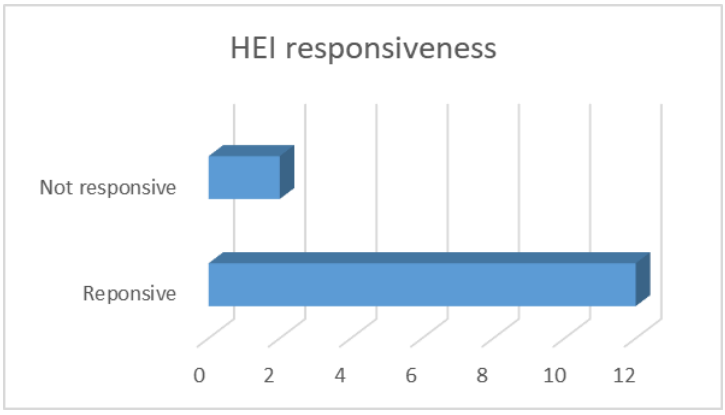

Figure 2: Response from targeted HEIs in Sample

Source: Research Data (2024).

Of the 12 responsive institutions included in the final sample, 33% (4) were Public (P) institutions while 67% (8) were Private (Pv). Figure 3 represents the types of HEIs in the study

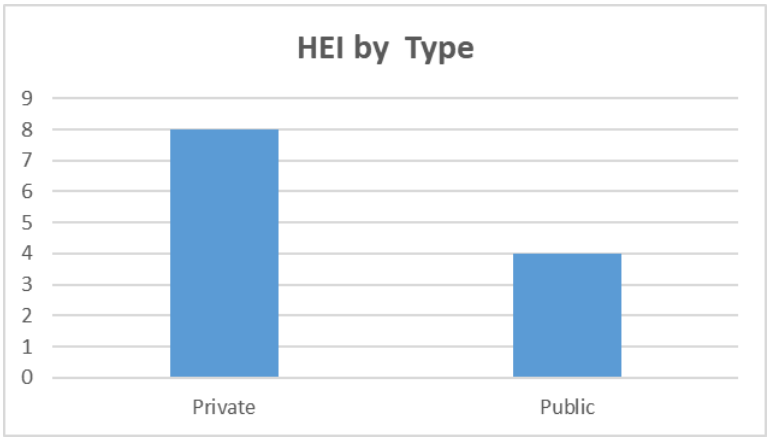

Figure 3: Responsive HEIs by type.

Source: Research Data (2024).

Out of 12 responding institutions 8% were located in the rural area while 92% were in the urban setting, along the line of rail. Note that total responses from institutions were 14. This is because one particular institution (B) had 3 respondents while the rest had only one respondent. This explains the total sample size of 14. Figure 4 presents the type of HEIs by location.

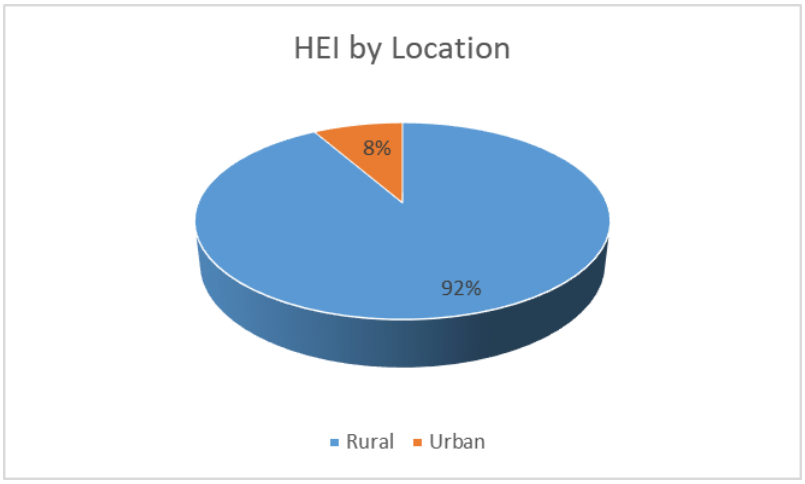

Figure 4: HEIs by location

Source: Research Data (2024).

The enquiry found that 57% experienced timely completion of research projects while only 21% opined research supervision in Zambia was of good standard effective with appropriately efficient processes. This implies that 79% felt research process was not to standard and still needed significant improvement. The study also found that 71% had at least once supervised using the online research supervision approach. 100% of the respondents highlighted challenges, gave reasons for delays in research completion but proposed solutions to improve research supervision processes in Zambia. The findings are summarized in Table 2.

Table 2 Results from data collection

Institution (encrypted)	Pv or P?	Timely research completion	Online supervision experience?	Research in Zambia: good or bad?	Challenges highlighted?	Reasons for not timely completion given?	Proposed improvements offered?
A1	Pv	1	0	0	1	1	1
B2	Pv	0	1	0	1	1	1
B3	Pv	1	1	1	1	1	1
B4	Pv	1	1	0	1	1	1
D5	Pv	1	1	0	1	1	1
E6	P	1	1	0	1	1	1
G7	P	0	1	0	1	1	1
H8	Pv	0	0	0	1	1	1
I9	P	0	0	0	1	1	1
J10		1	1	1	1	1	1
K11	P	0	1	0	1	1	1
L12	Pv	0	1	0	1	1	1
M13	Pv	1	1	0	1	1	1
N14	Pv	1	0	1	1	1	1
Total		**8**	**10**	**3**	**14**	**14**	**14**
%		**57**	**71**	**21**	**100**	**100**	**100**

Source: Research Data (2024).

Discussion

From the findings of presented data, a number of interesting points came to the fore. This section discusses key findings. The study found that in Public HEIs (in the sample), few students completed their research projects within the stipulated (1/3=33%) time frame for various reasons. Respondents stated that the supervisor-student

ratio was far too high to guarantee quality personalized attention. According to ZPD and andragogy, there is a danger of low quality research resulting as not sufficient qualitative attention is accorded to learners. Reactions vary: While some with low self-efficacy may switch off, others walk away with an unpleasant experience prominent in their minds. Another possibility is that students do not acquire as many essential skills as desired thus frustrated and develop a negative attitude towards research. On the side of supervisors, this scenario may drop their morale and quench aspirations of pursuing research as a career. Their motivation likely may be low unless strong intrinsic motivation exists. As an example, at one such Public institution, the participant (i.e. supervisor) stated that they had a minimum of 10 students spread across levels (i.e. undergraduate, graduate and post graduate) to supervise and almost all of them had a similar time line, bearing program specific variations. In their view, this compromised research output quality or skills acquisition to students. From study submissions, it would be fair to conclude that the predominant complaint across all institutions was pressure, less meaningful individual attention and overwhelming workload for supervisors. If this is not urgently addressed, as earlier hinted at, research supervision is unlikely to improve. In the African context, the power distance tends to be large thus affecting how parties to the research interact. Those with power tend to dictate and in some cases, sour relations. That explains why the 'toxic mentors' earlier referenced in this study exist and get away with it, all simply because power dynamics favour them. In an earlier section, we stated that learners dare not push or claim their rights lest they jeopardize their chances of early thesis completion. Power dynamics are at play, although on paper, the right things may be stated such as equity, right to make demands or receive attention at agreed times etc. Further, study respondents stated that student attitude equally affected timely completion as student response, efficacy and resilience to work came into play, apart from resource challenges that plagued some students. If student self-efficacy was low, felt they received little attention or did not acquire desired skills, learners tended to lose interest. If, on the other hand, supervisors were cordial, patient, available, engaging and responsive, learners equally tended to be motivated to timely complete. Contributing elements towards cordial supervisor-supervisee relations would include narrower power distance, unlimited access to supervisors and in some cases, access to a multiplicity of supervisors, in interdisciplinary programs or studies. In another case, the respondent stated that they rarely met students because of many other competing priorities, including the high number of students to supervise that significantly impeded effectiveness. The best supervisors did was set students up for the project and only periodically met them at critical points such as the initial meeting to set targets, initial experiment resources access and at guiding them format a defense presentation. The rest of the time, students were largely on their own. Clearly, this suggests deep process problems within institutional structures leading to low quality graduates churned out. The picture was not any better in the private sector either because the same cadre of supervisors crisscrossed institutions offering supervision services as a fee. Chances are that supervisors exhibited similar procrastinating tendencies or sense of feeling overwhelmed carried over. It was interesting to observe that the vast majority of respondents had at one point supervised using online means (i.e. 71%). When asked, they stated that most of that was actively done during the Covid-19 era and shortly afterwards. Many had since transitioned to a blended approach where an embodied element was retained, despite the availability of 100% online supervision LMS options. Although supervisors preferred embodied sessions, some confessed that time was still a major challenge even in those cases. The high percentage of people having used online means was encouraging but not assuring because sustainability was uncertain. However, we opine that blended approach was one step to full adoption. The perception that research supervision in Zambia was not in a good state was confirmed and worrying at the same time. A 79% confidence lack in the research supervision process from among supervisors themselves was concerning. This low confidence suggests that a lot more needs to be done to alter the picture and if not urgently addressed, could motivation. If supervisors felt that way, then learners invariably eventually were negatively impacted. Viewed from another perspective, this perception could suggest that supervisors knew the right standard, which, in their view, was not being met. Not all respondents were entirely negative about the situation but clearly stated that things could be better. The study yielded helpful insights on how highlighted challenges could be mitigated for a better student experience. This picture implies that urgent attention needs to be devoted to research supervision as well as investing in online supervision to ensure sustainability. The goodness is that a number of respondents had at one time used the route but what still lacked was ongoing training buttressed by appropriate incentives. Additionally, funding, linkages and intentionality about research were essential needs to enable better research supervision.

From a longitudinal perspective of research document review and brief interviews across several institutions, the researcher found that academic research supervision has hitherto not been given the necessary attention as relates to quality improvement[1]. It was evident that generally, research in Zambia is still inefficient, necessitating recent

[1] Although in the first Republic, Research and Development (R & D) was prioritized evidenced by multiple research stations dotted across Zambia. Most of these sadly now lie neglected and relegated to the side for lack of funding and prioritizing. The market oriented country prioritizes importation over R & D. Most of these once vibrant research facilities are abandoned,

attempts to rectify this gap e.g. mandatory setting up of the Deputy Vice Chancellor (Research & innovation) portfolio across all Zambian HEIs. A serving leading Research Director at an HEI in Zambia, when recently consulted, expressed his opinion about this matter thus:

> "Most supervisors feel it is the responsibility of the students to develop the final thesis or dissertation. Therefore, thorough feedback is mostly not given to students...Most faculty members are unwilling to facilitate research supervision because of their high workload. Besides, others do not have interest in research and makes it difficult for them to even supervise students…My experience at (institution B) can be summarized in three major aspects:
>
> 1. Timely feedback to research students is key. However, most supervisors fail to adhere to this standard.
> 2. Giving technical/constructive/helpful feedback has been a challenge by most of the supervisors.
> 3. Thorough feedback is mostly not given to the students which tend to increase the time taken for reviews."

Despite good extant institutional documents clearly streamlining what ideally ought to be done to facilitate good research supervision, the practice on the ground was found different in several cases, often leaning towards negative experiences. Students and supervisors alike continue to contend with varied militating elements both within and outside their control. The research also found that in several instances, research supervision lacked firm enabling structures to assure quality standard procedures across institutions. During the interviews, no universally accepted and mandated research supervision policy was found nor was intentional training (in research supervision) prescribed for all institutions. This departed from what Bitzer (2007), in his insightful report for the Australian and perhaps, the South African contexts. Bitzer (2007), found that in institutions he surveyed were intentional on policy and training of supervisors. Additionally, this study noted that online research supervision, let alone, online learning itself were relatively novel and not preferred in the Zambian context, given perceived multiple challenges. A final observation was that students across all institutions (whether public or private) rarely completed their research study within prescribed time frame although some authorities opined differently. This finding is consistent with what Taylor (2023) found in his synopsis of research development over the years. Practice and experience varies. Systemic inefficiencies remain but progressively integrated. Unless and until due attention, options, sensitization is intentionally devoted, things may not change. Training, investment, capacity building, partly could be done through avenues like MOOCs[1].

Conclusion and Recommendation

Conclusion

The study assessed research status in Zambia and proposed online research supervision as a potent alternative addition to the supervisor's toolkit. The study arrives at several conclusions including:

1. Relatively few supervisors intentionally consistently use alternative approaches to research supervision other than what they best knew or how they themselves were inculcated into. Most prefer embodied research, although the blended approach appeals to some. Said differently, physical in-person methods are still perceived advantageous in the sense that learners receive instant feedback on their work (Tatnell, 2020). This study observed that although a majority of respondents had engaged in online supervision before (i.e. 71%), most were not consistent nor willingly chose it. To achieve supervisor buy-in to online research supervision route, supervisors (and students) must perceive the approach as desirable and significantly adding to their skills set amenable to the 21st Century context. Maslow (1943) argued that once basic needs were met, individuals tended to desire the next level needs. Education and credential acquisition falls within the hierarchy of needs towards a better quality of life in a third world context. The more efficient supervision is supported by enhanced skills, the more desirable skills acquisition will be in budding supervisor eyes.
2. Time constraints and limitations compete against willing supervisor wishes. While acknowledging inherent potential efficiencies in Digital educational technology use, several respondents opine that using online tools is not priority and if a student submits work, say through email, it would take them several weeks before they looked at it or responded, given their heavy workload. Various factors affect quality of supervision including high supervisor-student ratio or power dynamics, among others. This

overgrown and with and significantly degraded.

[1] I have found helpful MOOCs from Futurelearn platform or other forums. These have proved valuable in my research supervision skills growth curve. At a minimal fee, one acquires skills and certified credentials. I list a number of these courses I have done in another part of this study.

affects timely completion, relationships, student experience and quality of output. Presence and interactions for learning posited by ZPD and presence theories are thwarted by that token. That said, while the product may be churned out in the final analysis but was it efficiently processed? Some interviewed supervisors seemed content with the final product but less concerned about the process and experiences of parties to the project. This study argues that the picture must change for the better for all parties to the research agenda.

3. This study further observed that supervisors needed more time and space to conduct quality supervision but competing and weightier work schedules impeded their aspirations and efforts. Presence and appropriate interactions between parties is essential in sync with the ZPD, andragogy and presence theories. Furthermore, power distance issues need to be borne in mind too while supervision is undertaken. Additionally, it was evident from interviewed candidates that almost none of them trained to handle research supervision but 'learned the ropes' as they engaged in it, often as they themselves were supervised. This affected research quality, innovation, efficiency and effectiveness. This study advocates for ongoing capacity building and load considerations in areas of digital fluency, number of students or effective supervision skills.
4. Good effective research supervision is critical to enabling efficient research quality output. Online research supervision needs to be strongly considered and advocated for in Zambia, given its multiple advantages such as efficiency and cost effectiveness, among other advantages. Supervision, whether online or embodied deserves respect, investing in and attention. If the process is properly managed, online research supervision can be as efficient, if not better than traditional F2F because the learner and supervisor easily communicate back and forth, at times, in real time while at other times, asynchronously. With that mode, it lowers cost, emotional stress, no need for physical travel, leave one's location or disrupt daily life routine because all parties have to do is simply discipline themselves to look at, review or respond to supervisor comments via extant EdTech. This study demonstrated that online supervision was a viable option worth considering and mainstreaming in Zambia.
5. Structures and resources to enable effective research were lacking in several institutions included in the sample. This affected output, credibility and institutional reputation and thus needed urgent attention. The enquiry observed and concluded that no firm structures to support research supervision existed. Further, digital infrastructure to facilitate online supervision was limited or totally lacked in several HEIs. Despite vast improvements in digital infrastructure in Zambia since 2010, more remains to be done.

Logically, the study concludes that research process quality needs improving beyond merely stating and documenting on paper, the processes taken. The variance between prescribed on paper and actual practice must be kept at a minimum for research to be meaningful. Evidently, online research supervision is the way to go.

Recommendations

Based on the findings, discussions and conclusion, several recommendations come to the fore as highlighted below:

1. The first is that there is growing need to build capacity among faculty members for effective online supervision (Bitzer, 2007). Government and respective HEIs need to prioritize and invest in ongoing training in research supervision skills and digital fluency. Although physical supervision has been around, it can equally still be improved upon. The study concluded that most supervisors supervise as they were supervised and have not been specifically trained for existing tasks at hand or emerging ones. With the advent of EdTech and AI, the trend is shifting towards online supervision. There is no need (for the supervised) to cross the country or even international travel to attend a seminar or colloquium, for instance. A mere link click makes the difference. It is now possible to meet the supervisor virtually thus cutting costs, redeeming time and mitigating life disruptions. Online supervision cuts all those encumbrances. As stated by Lee (2007), there is need to build capacity in lecturers, instructors and consultants, to execute online supervision particularly in the virtual spaces. From review of several Universities within the African region and across the world, it is evident that online research supervision is a need of the times. One way for capacity building is necessary and could be conducted through short courses via MOOCs. Future Learn, for example, offers several potently relevant research supervision course[1]. Many other avenues exist for training including through attending academic

[1] Future Learn offers several helpful MOOCs that would aid researchers quickly upskill. Examples of courses offered include: 'Successful PhD Supervision: A shared Journey' (University of Groningen & University Medical Center Groningen (UMCG)); 'Introduction to Research Ethics: Working with People' (University of Leeds); 'Introduction to Phenomenology and its application in Qualitative Research' (The Open University and University of Southern Denmark); 'Career

research symposiums to listen and learn from other practitioners though the best is actually engaging in the work itself (Fosso-Kankeu, 2022). Supervision is best learnt by doing.

2. The second recommendation is that there must be strong, clear research process framework and quality standards for generic research supervision and online research supervision in particular. There is need to ensure that clear policies, code of ethics, practice and procedures are in place, enforced and complied with. These recommended practices must be laid bare (Fosso-Kankeu, 2022; Hall *et al*., 2019; Carapetis, 2019; Kumar & Huat, 2011), well streamlined, laid out and clear for all; students and supervisors alike. Standards must be set when students and supervisor meet, time frame for responses. Expectations of the supervisor and supervisee must equally be very clear. The Higher Education Authority (HEA) of Zambia should ensure that HEIs in Zambia generate these institutional policies and accordingly implement them.
3. The third recommendation is HEIs in Zambia to create firm research supportive structures to facilitate online learning for greater efficiency. According to Lee (2007), the contemporary drive in research has been in 3 areas: 'employability, skills formation and timely completion'. All these elements must be held in tandem and effectively addressed. An additional recommendation connected to this, is the need to develop and nurture a robust, supported and supportive research culture in institutions. A culture is how things are done in a given context. In this case, a research culture means that enquiry is part of the norms (DNA) of the university. Kumar and Huat (2011), proffer helpful tips on this. Further, it is important to install accessible relevant research software at the institution (Kumar & Huat, 2011). In that way, research is not hindered in anyway.
4. Yet another recommendation is the intentional adoption of trending best practices by HEA and HEIs within the research world (Kumar & Huat, 2011). One way is to benchmark with other similar but successful entities, mentor and train faculty members.
5. A final area is for government to invest in ongoing research and development. Once again, HEA has given commendable direction so far but more still is needed. HEIs also must be sensitized to the need to research best practices and share them to others. This builds the body of knowledge.
6. Future research should explore AI driven automated tutorial supervision. Software to train and supervise students is likely there now, albeit still in its infancy. This has implications of course such as absence of the human to human element. According to Chembe et al. (2023), Intelligent tutorial software now exists to teach and train users. Additionally, software to potentially review journal articles leading to efficiencies also exists. All this results in higher productivity, quality objective output managed and regulated by humans.
7. Another future research area is to conduct a national qualitative and quantitative research on the need and potential impact of online research supervision on the Zambian turf. The government with relevant stakeholders is best placed to drive this agenda because there is need to ascertain online applicability in a global south contexts and what it will take to set up and manage a robust online research infrastructure and framework. As highlighted elsewhere in this paper, Online research supervision appears novel Zambia and probably surrounding countries. For the moment, very little has been done in that area, with the field almost green field. ELearning and attendant practices are generally novel for the Zambian context, hence the need for further documented research. A few papers were found on generic research supervision (e.g. Mweemba et al., 2018) in Zambia but little, if anything was found on online supervision. This is concerning because Zambia is likely to continue lagging behind while the rest of the world marches on. This future quantitative study is key to validate these findings presented in this study as shifts are consistently occurring all the time. The study focusing exclusively on online in and African context is both welcome and timely but the dearth of previous studies, particularly in Zambia, makes the endeavor complex, hence the recommendation.

Study limitations

This study was conducted over extended period of time and in various contexts over the author's professional career. Being auto-ethnographic in nature, the enquiry may have some inherent biases although I ensured that I only captured what I directly experienced, observed first hand, saw and data gathered from others over time. The

Management for Early Career Academic Researchers' (The University of Glasgow, The University of Edinburgh and The University of Sheffield); 'Why Research Matters' (Deakin University and Griffith University (Australia); 'Discovering your PhD potential: Writing a Research Proposal' (University of Leicester); Generative AI in Higher Education (King's College London) and Digital Wellbeing (University of York), among many other potent courses. Other courses pursued from other sources included 'Supervising Doctoral Students Parts A & B' (ICETE Academy), 'Assessing Research Doctoral programs' (ICETE Academy), and 'Online Education' (ICETE Academy) etc.

biases could include preferences or subjective perceptions that I and others could have subtly been influenced to conclude. This is the potential weakness with auto-ethnographic or reflexive approaches tend to have. There is need to mitigate this bias in some way. One way this study attempted mitigation was triangulation by conducting in-person interviews with independent practicing professionals of different age groups. Longitudinal studies, if not well documented run the risk of not being based on fact or parties forgetting given the wide time distance of exact scenarios in which their opinions and perceptions were couched and framed. Time has a way of eroding memory and detail. This was mitigated by a triple approach: interview, written notes or hands on experience over the years by this researcher. The limited non-representative sample was arrived at using an inclusion and exclusion approach. This sample size was far from granting an exhaustive big picture view of research supervision status in the entire Zambia. For qualitative studies, this may be fine but a slightly larger sample is desirable because it allows for saturation and assurance of covering all bases. The study used a limited sample of accredited HEA accredited HEIs. This small sample was a limitation in itself because it did not highlight the actual broader picture of what exists in Zambia. Although saturation was becoming evident by the 9th interview, the picture could possibly have been different had a larger sample been included in the study. Further, convenience sampling was used. This approach picks whoever is available to respond and runs the risk of omitting significant people with requisite current information. Interviews were either by phone, embodied or in written. Each of these has its unique down sides. Furthermore, the snap shot phone call survey (in most cases) could not have brought out all the desired details. In person conversational interviews yielded better insightful responses than phone call interviews. An additional limitation potentially affecting results is that most respondents were from along the line of rail, in urban settings. This almost excluded the voice of HEIs in the outlying rural areas, although one would argue that most urban Universities are the ones that planted the rural ones, hence represented. But a voice from a person operating in the actual context is perceived more credible than one from a person speaking from the comfort of their urban, well-furnished University chair.

Online supervision deserves a voice, mainstreaming and investing ito. It is the way to go in the 21st Century digital world. Zambia does itself great harm if it continues to lag behind. May this adoption occur sooner than later.

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