Quantum shift in Postgraduate Research Supervision

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Abstract

Postgraduate research incubates knowledge, innovation and enterprise solutions that propels a nation's research and development (R&D) agenda and sustainable social provisions. The aim of the research was to ascertain the knowledge, skills and competencies required of academic staff to be effective and excellent supervisors under the prevailing circumstances. The research paper used a qualitative research methodology. The research design used was the discourse examination of the Laclau and Mouffe type supported by document analysis and Focus Groups. The Linguistic methods to discourse analysis are associated with sociolinguistics which looks at the language as socially contextualise, whilst the contemporary methods to discourse analysis pay particular particular attention to the 'structure', 'form', 'organization', 'order', or 'patterns'. Focus Group discussions were held with 50 seasoned academics from various African higher education institutions via a Webinar done using Google Meeting. A total of 450 published papers acquired from Google Scholar were utilized in the document analysis. The study established that good research supervision entails maintaining best way elements, enhancing the skills and knowledge of the supervisee, assisting with the growth of reflective practice, and providing the supervisee with international scholarly exposure with a strong coherence of arguments. It was noticed that virtual supervision works more effectively when students are aware of the potentials and limitations of the virtual environment, and when supervisors prepare students to actively engage in the partnership process.The new Higher Education Policy Education 5.0 requires the knowledge and innovation research and training to create a context in which research students will be expected to complete their degrees more quickly and graduate with a wider range of research capabilities which make them more entrepreneurial and responsive to industry needs.

Key Words: Discourse analysis, Virtual research supervision; PhD supervision; Postgraduate research supervision; effective supervisor; knowledge sharing.

Quantum shift in Postgraduate Research Supervision

Introduction

Postgraduate research generates knowledge, innovation and business solutions that drive a country's research and development (R&D) and sustainable social provision. The postgraduate research supervision training serves to impart knowledge, skills and practical experience in research supervision (Stephens, S., 2014). Good research supervision encompasses three broad themes:

a) maintaining best practice within the particular profession, where supervision ensures the maintenance of professional standards and acts as a gatekeeper to the profession,
b) enhancing the supervisee's skills and knowledge, and in developing reflective practice and
c) providing the Supervisees insight into how the profession works and opportunities for networking and modeling in practice.

Quantum shift means an enormous change, huge shift, big change or major change. The paper is focused on the quantum shift required in postgraduate research supervision to ensure congruence with the new policy directions for the Fourth Industrial Revolution characterized by cyber-physical systems. Postgraduate research supervision entails the supervision or promotion of students research activities which may culminate in the development of a dissertation or thesis of a Masters or Doctoral degree, and the training of the student into a competent and independent researcher (HEQC 2004: 166). According to Zuber et al (2004, p.11), indicators of effective Supervision include a larger experience base, encouraging, facilitator of learning, resourceful, committed to the student, multidisciplinary, directed by students' needs, insightful, intelligent, good writer, supportive and positive self-image. Postgraduate research survey areas include the supervisor's skills, subject knowledge, attempt to understand the student, provision of good guidance, availability and mutual respect (Ali, F., Shet, A., Yan, W., Al-Maniri, A., Atkins, S., & Lucas, H., 2017). The positive supervisorsupervisee relationship is characterized by an atmosphere of warmth, respect, trust, acceptance and understanding. However, Supervisors and supervisees alike have described this procedure as scary', 'mysterious', 'overwhelming ', 'intimidating', 'disheartening ', 'intentionally obtrusive', 'baffling, or even off-putting. The Supervisor/Student perceptions are illustrated by the matrix shown on Figure 1 below.

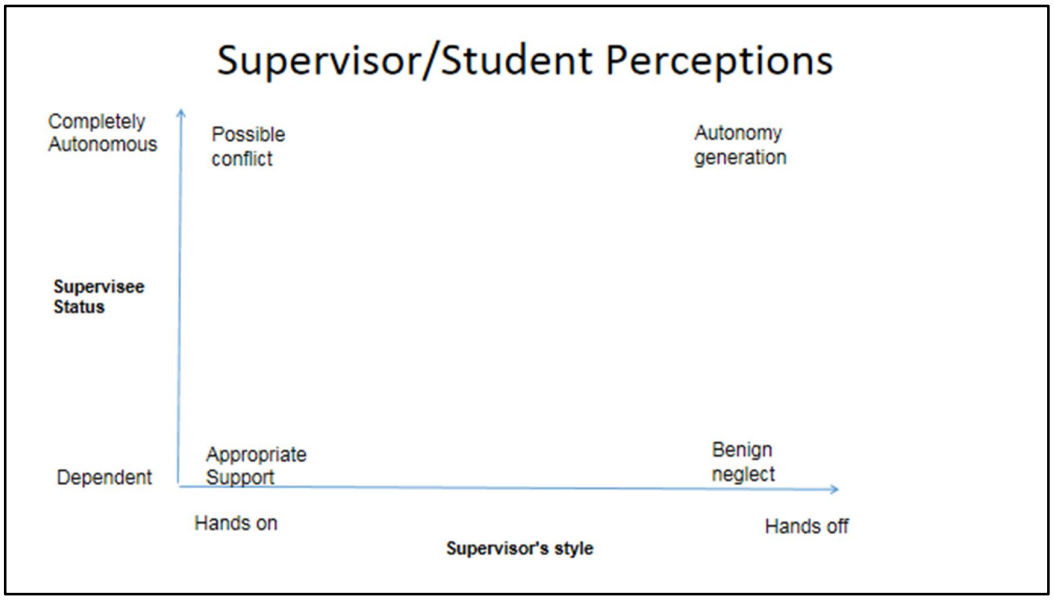

Figure 1: Supervisor/Student Perceptions

Statement of the Problem

The new Higher Education policy in Zimbabwe, called Education 5.0, now places greater emphasis on research, innovation and enterprise development for industrialisation but the postgraduate research supervision practice has not responded appropriately. Most of the academics supervising postgraduate research work have diverse backgrounds acquired from different parts of the world and have had no formal training on research supervision. There have also been unusual cases involving research Supervision that has taken close to 10 years for a PhD candidate to complete doctoral studies. The supervisorsupervisee relationship, which often embodies warmth, trust and respect, now faces difficulties in postgraduate research supervision with some supervisors developing whilst others are in a state of stagnation. There is a challenge emanating from the cultural or institutional resources that construct and constrain supervision, and provide a foundation for its authority/legitimacy in terms of its historical or genealogical development, the multiple stories that can be told about its origins, and in terms of its ecosystemic relations with other current social and professional practices. The main research question is *What specific skills and competences are required for one to be an excellent and effective Supervisor under the prevailing circumstances?*

Postgraduate research supervision can be simplified by considering the four constructs of relationships, management, pedagogy and value-adding contributions to knowledge as shown on Figure 2 below.

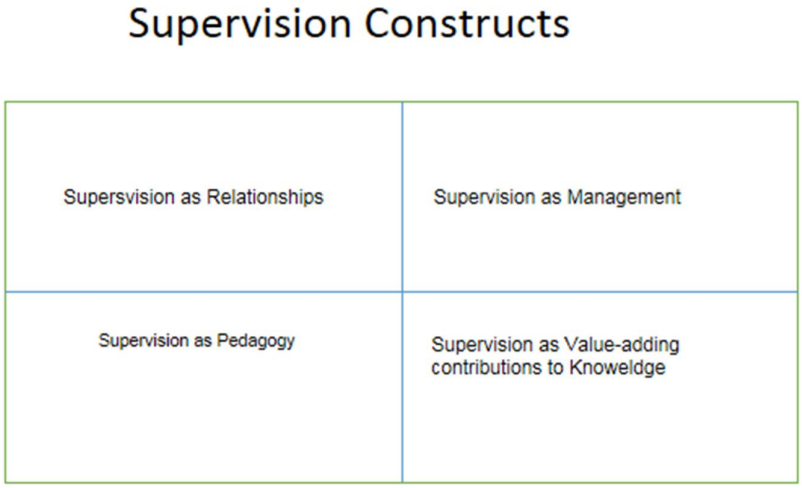

Figure 2: Supervision Constructs

Research Objectives

The purpose of the research was to ascertain the knowledge, skills and competencies required of academic staff to be effective and excellent Supervisors under the prevailing circumstances.

The major research objectives are to:

1. Determine ways to generate interesting, innovative and effective ways for the supervision of doctoral theses / master theses.
2. Determine what knowledge and skills should be developed to address the opportunities and challenges of virtual research mentoring that match the student's research needs can.
3. Develop a quality assurance framework / an international best practice perspective that enables one to become a successful and excellent research director.
4. Recommend the relevant Policy Brief on Research Oversight, which incubates a country's research and development agenda and stimulates economic growth and development that lead to sustainable social benefits.

Research Questions

The main research question is ***"What specific skills and competences are required for one to be an excellent and effective Supervisor under the prevailing circumstances?"***

The major research questions are as follows:

a) How do you generate interesting, innovative and effective ways for supervision of Doctoral Theses/ Masters Dissertations?

b) What knowledge and skills should be developed to manage the opportunities and problems of Virtual Research Supervision that meet students' research requirements?
c) What innovative Pedagogies and Frameworks in Research Supervision in response to Student Perceptions and Experiences can guide good research supervision practices and behaviours?
d) From a Quality Assurance Framework/ international best way perspective, how does one become a successful and excellent Research Supervisor?
e) What should become the Policy Brief in Research Supervision that incubates a nation's research and development agenda and stimulates economic growth and development leading to sustainable social provisions?

Literature Review

The characteristics of a successful supervisor include having technical know-how in the subject, actively researching, setting realistic expectations and results, providing timely quality feedback, inspiring and motivating students in the development process to become independent researchers, and having a high level of availability (Easterby-Smith, Thorpe and Lowe 2002, p. 15), (Cornelissen, F., & van den Berg, E., 2014). James and Baldwin (1999) identified eleven practices associated with effective postgraduate supervision and these are as follows:

- Ensure the partnership is appropriate for the project.
- Assessment of the type and needs of the students.
- Setting realistic expectations.
- Developing an impressive research plan and research design in consultation with the candidate.
- Writing research results early and frequently.
- Providing meaningful quality feedback and constant interaction.
- Involving candidates in the academic activities, events and functions of the department or faculty.
- Motivate and inspire candidates.
- Help in times of academic crises.
- Develop an interest in the well-being of the candidate and his / her research work.
- Careful accompaniment of the final production and presentation of the research.

Milgate, M. (2006), and Brew and Peseta (2004) also identified the following range of practices for good research supervision:

- Interest in and enthusiasm for postgraduate research students.

- Appreciation of the formation of a productive research environment and good practice.
- Setting realistic goals and expectations for the student.
- Conducts regular interactive meetings to guide the student.
- Managing timely and successful completions.
- Introducing the student to the research community.
- Challenging feedback on students progress and communication.
- Ensuring effective and excellent supervision.
- Encouraging peer assessment of ones supervisory practice.
- Researching on improvements of supervision pedagogy.

The clinical supervision function includes facilitating experiential learning for the supervisee, establishing the supervisee's fitness for practice, maintaining standards of competence, and promoting general professional development (Lambert & Ogles, 1997), (Sloan, G., White, C. A., & Coit, F., 2000), (McCarron, R. H., Eade, J., & Delmage, E., 2018), (Wherley, C., Veach, P. M. C., Martyr, M. A., & LeRoy, B. S., 2015). In some cases, PhD students are often involved as assistants or research assistants in research projects led by permanent teachers. Working with PhD students can be intellectually challenging and inspiring for faculty members' own research. Not infrequently, the doctoral students are entrusted with the tedious, time-consuming activities of collecting and analyzing data, doing a large part of the time-consuming data collection and data analysis, while the supervisors and the doctoral students remain co-authors of the research publications. Proof of productivity in this case is measured by:

- Articles in scientific journals.
- Articles in research books, textbooks, and conference proceedings.
- Published research books and textbooks.
- Reports published in series of reports.

One reason why Ph.D. Students in the hard sciences receive more supervision than students in the soft learning fields, it is obvious that lecturers in these areas achieve positive returns from project-related supervision. In terms of increasing productivity, this is not the case in the humanities and social sciences. A worldview is basically a set of beliefs one has about the nature of the world and its place in it that determine the activities one would undertake as a researcher ("University of Hertfordshire Michael Biggs and Daniela ....", https://core.ac.uk/download/pdf/1643014.pdf).

There are certain actions that are considered constructive in the research mentoring work. The results of the research activities make a valuable contribution to the research community. The resulting research paradigms are professionally relevant and are reinforced by appropriate demonstrations and exhibitions. However, each academic field has its own unique distinguishing features and characteristics for different academic communities. These unique peculiarities result from a variety of worldviews that show a congruence between the research paradigm and the worldview (Kabanda, G., 2020), ("RELIGION AND POLITICS IN NIGERIA", http://onlineresearchjournals.com/ijopagg/art/180.pdf).

A doctorate can be obtained in any discipline, but there are special features in each area that trigger a different understanding of the content of the doctorate. The newly academicized areas such as the creative and performing arts may have dysfunctional relationships between the methodological question and the ontological and epistemological questions, as these are viewed as new areas in which, unlike other established disciplines such as physics, etc.

The knowledge management model, or the sharing approach, is one of the most important strategies that are critical to effective research oversight. The knowledge sharing approach uses inputs that are processed to obtain output, as shown in Figure 3 below. Based on my experience as an experienced researcher, the knowledge exchange factors that support this model are trust, organizational culture, willingness and intention, individual attitude, degree of competition, flexible structure and design, social network connection, support from supervisors, skills and abilities to share , ICT infrastructure and learning strategy. This means that there are individual factors, institutional factors, and technological factors that we must address in order to achieve an adaptable exchange of knowledge.

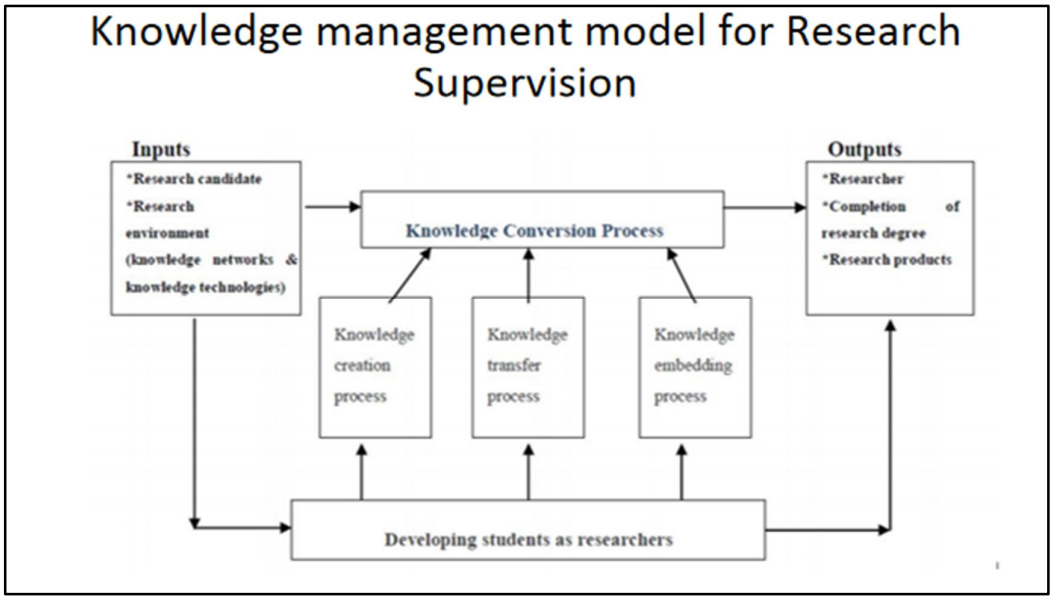

Figure 3: Knowledge Management approach

Another approach for effective and efficient research Supervision is to use the Objectives approach. The Objectives approach focuses on agreeing on the remit of the research in order for both the supervisor and candidate to work together on the agreed milestones, deliverables and deadlines (Johansson, D., 2015), Management, P., Projects, W., Failing, A., Can, W., Done, B., & It, A. (2012). The Objectives approach is centered on addressing this question, *"How are students helped the most in supervision?"* Supervisors are expected to become more of mentors and pastors more than just playing the academic role. The student must trust their supervisor whilst the supervisor shows care both about their research and about the student. When candidates and supervisors proceed on different assumptions and have different or unclear expectations, then problems arise Supervision. In pursuing the Objectives method in research Supervision, there is often a challenge on how to translate theory to actual supervision practice. The global supervision models cannot generate specific hypotheses for effective supervisory processes. Comparative research in research supervision gets more complex under the following conditions:

- when the nature of knowledge, skills, and behaviour outcomes that the supervised is being trained in remains obscure;
- when strategies that the supervisor uses are undefined,variable, and unpredictable; and
- when attainment of key competencies is difficult to assess accurately and reliably?

For excellence, a supervisor can also show:

- enthusiasm and interest in supervision and support;
- excellent recruiting of good candidates;
- establishment of health work relationships with the supervisees and co-supervisors;
- support and encouragement of students with meaningful commitment, timely quality feedback;
- appropriate support for career development and personal development of the supervisee;
- support in the essential processes of preparing the thesis and final examination;
- critical review of the research work.

Therefore, an approach to higher degree supervisor is one who:

- Inspires, motivates and influences candidates in the growth of independent research skills building process;
- Amply demonstrates familiarity with modern trends in research and method in the disciplinary area in a manner relevant to the topic;
- Personally gets involved and is deeply committed to research with regard to measures such as research income, relevant publications and completion rates;
- Establishes a supervisory relationship that is supportive, accessible, and provides timeous quality feedback in order to inculcate a positive and productive postgraduate research experience.

The framework for the concepts of research supervision are show on Table 1 below.

Table 1: *Framework for research supervision*

	Functional	Enculturation	Critical thinking	Emancipation	Relationship development
Supervisor's activity	Rational progression through tasks	Gatekeeping	Evaluation, challenge	Mentoring, supporting constructivism	Supervising by experience, developing a relationship
Supervisor's knowledge and skills	Directing, project management	Diagnosis of deficiencies, coaching	Argument, analysis	Facilitation, reflection	Emotional intelligence
Possible student reaction	Obedience organised	Role modelling	Constant inquiry, fight or flight	Personal growth, reframing	Emotional intelligence

The 3Ps-Pedagogical research supervision model is tabulated below on Table 2 below.

Table 2: *3Ps-Pedagogical Research Supervision Model*

Purpose	**Pedagogy**	**Product**
Critical knowledge management	Engage	Introduction
Knowledge identification and exploitation	Explore	Review of Literature
Generation of new knowledge	Explain	Methodology
	Elaborate	Conclusion
	Evaluate	Recommendations /Oral Defense

The other two important models for research supervision are the Critical Thinking Model and the Experiential Learning Model.

A Critical Thinking Model

Critical thinking is a process of validating the validity of a hypothesis (Kabanda, G., 2018). Skill of critical thinking is the ability to articulate an issue and anticipation the problems that include the process of observation, interpretation, evaluation, explanation, and also meta-cognition in order to find a solution or alternative to problems (Pawlowski, S. D., 2016). Critical thinking provides competences, skills and attitudes required in rational thinking in order to make decisions. The three steps required in the model are problem identification, unpacking conceptions and creation of the solution (Martinez, D., Malyska, N., Streilein, B., Campbell, W., Greenfield, K., Hall, R., Richardson, F., & Zipkin, J., 2019)).

Experiential Learning Model

The experimental learning model is based on constructivism theory and offers a cognitive and self-regulating paradigm for learning in a collaborative learning environment (Tancig, 2007), (Kabanda, G., 2018). The supervising model develops subject-specific and generic competencies. The starting point of this model is problematization through Problem Based Learning (PBL) in order to develop the necessary competencies in postgraduate research supervision, where we often start with learning outcomes and competencies that are relevant for the doctoral thesis (Topi, H., et al., 2017). The competencies require knowledge generation,

innovation, collaboration and communication. The focus is on the Kolbs cycle, which represents the model of experiential learning with the four stages of experience, reflective observation, abstract conceptualization and action. The Supervisory Working Alliance, as proposed by Bordin (1983), (Bennett, C. S., 2008), (Briggs, D., 2010), (Edward Watkins, C., 2010), is based on three main components, as shown in Figure 3:

i. mutual agreement on supervision objectives,
ii. specific tasks related to the objectives, and
iii. developing the bond between supervisee and supervisor (Grossl, A. B., et al., 2014), (Watkins, C. E., 2014), (Friedlander, M. L., 2015).

It was the relationship bond that develops between them when they work together.

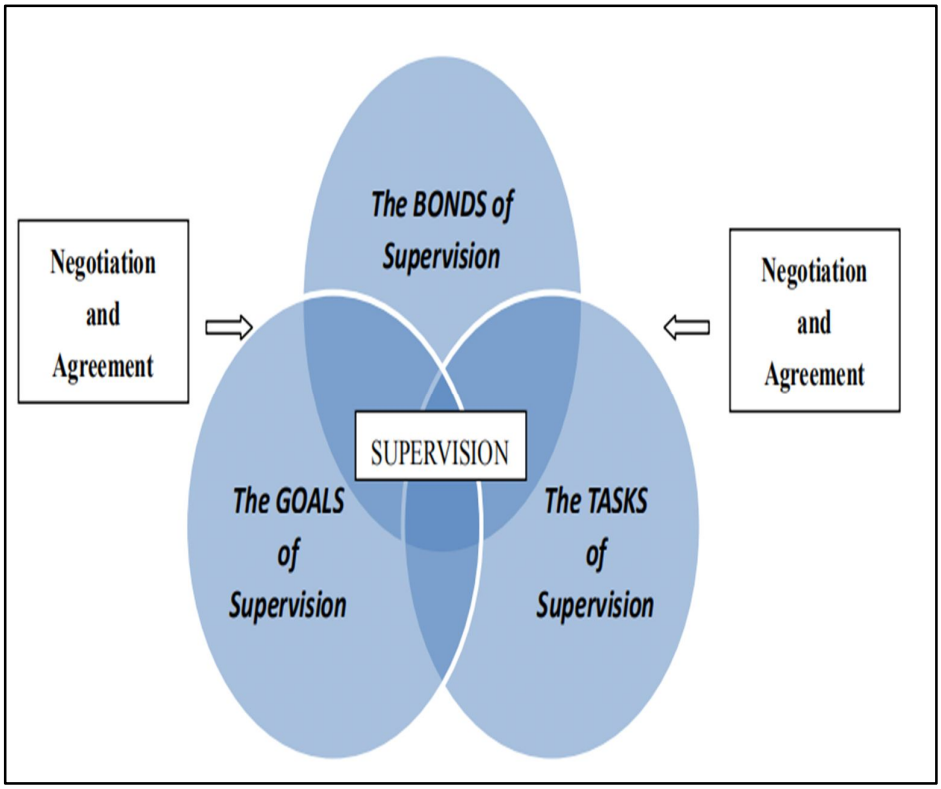

Figure 3: Bordin's Working Alliance Model

Research Methodology

The research uses a qualitative research methodology. The research design was a discourse analysis of the Laclau and Mouffe type, supported by document analysis and focus groups (Suputra, O., 2013), (Gurtu, A., & Johny, J., 2019), (Chun Tie, Y., Birks, M., & Francis, K., 2019). As part of a webinar with Google Meeting, focus group discussions were held with

50 experienced academics from various African higher education institutions. A total of 450 published papers acquired from Google Scholar were used for document analysis. The fixation of characters in a relational network can be represented by the node. In discourse theory, the focus is on the articulation of specific expressions. The empirical analysis of this research was carried out through the discourse theoretical concepts of Laclau and Mouffe, which are characterized by the following:

- Nodes, main signifiers and myths;
- The concept of chains of equivalence;
- Concepts of identity; and
- Concepts for conflict analysis.

According to Luo, A. (2020), discourse analysis is a qualitative and interpretive method for analyzing texts or a research method for examining written or spoken language in relation to its social context. Discourse analysis tries to derive meanings from the language used in real life situations. The discourse analysis examines how language works and uses meanings from social contexts with an emphasis on the contextual meaning of language. Luo, A. (2020) recommended the following steps when conducting discourse analysis:

1) **Step 1**: Define the research question and select the content of analysis
   The research questions discussed in the discourse analysis are the major research questions, which are as follows:
   a) How do you generate interesting, innovative and effective ways for supervision of Doctoral Theses/ Masters Dissertations?
   b) What knowledge and skills should be developed to manage the opportunities and challenges of Virtual Research Supervision that meet students' research requirements?
   c) What innovative Pedagogies and Frameworks in Research Supervision in response to Student Perceptions and Experiences can guide good research supervision practices and behaviours?
   d) From a Quality Assurance Framework/ international best practice perspective, how does one become a successful and excellent Research Supervisor?
   e) What should become the Policy Brief in Research Supervision that incubates a nation's research and development agenda and stimulates economic growth and development leading to sustainable social provisions?
2) **Step 2**: Gather information and theory on the context
3) **Step 3**: Analyze the content for themes and patterns
4) **Step 4**: Review your results and draw conclusions

Linguistic methods to discourse analysis are associated with sociolinguistics which looks at the language as socially contextualised.Workplace documents have ethnographic meaning which embodies some aspects of workplace culture.Contemporary methods to discourse analysis pay particular particular attention to the 'structure', 'form', 'organization', 'order', or 'patterns'.

The key steps in discourse analysis are:

1) Establish the context in which the source was produced
2) Explore the production process including the author and editor
3) Prepare your material for evaluation andmark important features.
4) Code your material
5) Examine the structural features of the text
6) Collect and examine discursive statements ordiscourse fragments.
7) Identify cultural references and how the context informs the argument.
8) Identify linguistic and rhetorical mechanisms such as word groups, grammar features, rhetorical and literary figures, direct and indirect speech, modalities, and evidentialities.
9) Interpret the data to derive the meaning
10) Present your findings, stressing the relevance.

The micro level is similar to conversation analysis, which provides a conceptual framework for systematically analyzing the participant's perspective, taking into account the cultural and communicative patterns. The macro-level approaches involve the study of language and ideology in society, and the analytical approaches often disentangle self-evident assumptions and their implications for individuals and society as a whole. Social reality is constructed socially. Discourse analysis is relevant to family practice where we are trying to understand family discussions, but now we are adding the methodological dimension to family practice research by drawing on theories and approaches from a number of disciplines.

In its simplest form, a discourse is an oral or written communication between people that goes beyond a single sentence. It is important that discourse is more than just language. The term language can include all forms of linguistic and symbolic units (even things like traffic signs), and linguistics can focus on the individual meanings of words. The discourse goes beyond that and looks at the overall meanings of language in context. Context here refers to the social, cultural, political, and historical background of the discourse, and it is important to take this into

account in order to understand the underlying meanings expressed by the language of changing or achieving a goal. Discourse analysis uses the language presented in a corpus or data collection to draw meanings. This dataset could contain a series of interviews or transcripts from focus group discussions. While some forms of discourse analysis focus on the specifics of the language (such as sounds or grammar), other forms focus on how that language is used to achieve its goals. These two approaches mentioned above will be discussed in more detail later. As Wodak and Krzyanowski (2008) put it: Discourse analysis provides a general framework for problem-oriented social research. Basically, the discourse analysis serves to research the use of language in the context of various social problems.

Results And Analysis

Focus Group discussions were held during the full-day Webinar/workshop on Postgraduate Research Supervision which the author facilitated on Saturday 3rd October, 2020, at ALMA in Harare, Zimbabwe. A number of questions were discussed and experiences of research Supervision were shared. Discussions were also held four research Supervision cases and the results are presented in this section.

Personal Experiences in Postgraduate Research Supervision

The focus group was led through the first exercise to discuss the personal experiences of the webinar participants as both supervisors and PhD students. Participants were led into a discussion on the following areas pertaining to their personal experiences in postgraduate research supervision:

i. Tell your story about experiences with doctoral supervision and / or their memories of their own doctorate.
ii. Discuss the problems and dilemmas that arise in Supervising doctoral students
iii. Tell us about your mentoring experience and its effectiveness
iv. Let us discuss the different expectations for measuring the success of doctoral projects.

Concept Mapping between Supervisor and Candidate.

Since both supervisors work with candidates during research supervision, both parties influence each other in different ways and show different likes and dislikes. Concept mapping is a conceptual view of the effects of research supervision on both clusters of the supervisor and the candidate. The following results were obtained for each cluster.

1) Cluster 1: Supervisor's expertise requires:

- Openness, competence, knowledge, experience, feedback and moderation ability of the supervisor
- Case conception, encouragement, confirmation and consolation by the supervisor

2) Cluster 2: Supervision as Teaching entails:

- Provision of research learning material, practical exercises, clarification and reporting on current topics.
- Dealing with legal and ethical questions, basic rules, safety concerns, worldview, lectures and presentations.

3) Cluster 3: Learner understanding involves:

- Conceptualization of concepts, learning from one's own mistakes in the field and collaborative learning in groups.
- Reflection, improved understanding and discussion of learning experiences.

4) Cluster 4: Learner Support is about:

- Encouragement to ask questions and comments, express views and frustrations, and share fears and success stories.
- Diversity management, normalization of experiences, approval and validation of interventions.
- Comradeship, mutual support and common cause

5) ***Cluster 5: Group Learninginvolves:***

- Feedback from peers, discussion of supervision questions, and conceptualizing cases.
- Critiquing and learning from others presentations
- Learning from more experienced researchers
- Obtaining help from the supervision group
- Diversity of feedback

Discussion on Research Supervision Cases 1-4.

Each of the four discussion cases was presented from the perspective of the PhD student and the supervisor. The four cases discussed are as follows, based on Dietz, A.J.T., et al. (2006):

Case 1: The PhD Candidate is offered a job on the verge of completing the PhD.

The candidate is a brilliant third-year doctoral student who is already well advanced in the preparation of his doctoral thesis. There is only one analytical chapter and a few touches left to complete the dissertation. If all goes well, this would take about seven months. The relationship with the supervisor was excellent, but not personal. The doctoral student suddenly gets a lucrative job offer as a young executive from one of the largest blue-chip companies in the country, and the position would be very intense. The doctorate has to start within three months of the new potential employer, after which there is not much time left to work on the doctoral thesis. The new potential employer considers the doctorate to be irrelevant to the job requirements and career.

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Case 2: Supervisor steals and publishes alone research work and excludes the candidate.

One of the best PhD candidates is already ready to complete his/her PhD Thesis. The research results are very interesting and have lately been published in teo research articles in refereed International journals. The link between the Supervisor and candidate has become tense lately. After a promising start the Supervisor was now give little attention to the research work of the candidate. The PhD candidate makes an appointment with the Supervisor to discuss his/her plans to publish two articles. The Supervisor suddenly confronts the PhD candidate with the fact that he has already submitted two publications to journals, of which he is close to the editorial board, and in which he mentions the candidate in a footnote. The Supervisor accuses the candidate that he/she has worked in his institute, problem with money, and that the findings of the candidate research work are the property of his institute. He has every right to publish the results, and that will serious effect on the candidate. However, it also means that the candidate cannot publish his/her own articles, without his permission, and he does not want to give that permission. There is now a fight and the candidate threatens to report the matter to the University Vice Chancellor for mediation. This is the matter for discussion.

Case 3: The PhD candidate goes shopping around for extra controversial supervision input.

This case involves a PhD candidate in his second year. The PhD has always submitted his work on time, but in three of the four cases the candidate has not received any real meaningful responses, other than "it looks good, go on". At one of the occasions the response was only about cosmetic errors. The candidate wants more and better comments, and has gone to two other Professors, elsewhere in the country, and they have given him

good feedback. The Supervising Professor has discovered that and he tells the candidate that he will never tolerate that again. The candidate cannot accept that either. What should candidate do? According to the Supervisor, his time has been full and did not have time to look at the candidate's work, and so looking at them superficially he thinks that they are OK. The Supervisor has discovered that the PhD candidate goes to two colleagues elsewhere, who are not particularly his best friends. He thinks that they want approach to his PhD candidate. The Supervisor tells the PhD candidate that he does not accept his/ her meetings with these two Professors, and now the PhD candidate has become very cross with the Supervisor. What does the Supervisor do?

Case 4: The PhD candidates decides to add the "Qualitative Methodology" and "thick description" to the Quantitative study

The PhD candidate was trained as a number cruncher, and likes statistics. The PhD Supervisor comes from the same background, and is very critical, even disrespectful of those colleagues who have gradually or abruptly shifted to more qualitative, "post-modern now accepted that is journalism, or worse, not science"! he exclaims during meetings. He resists Methodology courses on which "nonsense like discourse analysis " is being taught, and goes to say "action research should be done in NGOs, not in universities". For part of the PhD candidates fieldwork she has lately been inspired by colleagues who have worked with focus group interviews, and with, what these colleagues called a description of The candidate now wants to devote at least one chapter of her PhD thesis on the bewildering outcomes of her findings, which seem to undermine the data that she earlier gathered using a standard questionnaire design. In her last "message from the field" she has written an enthusiastic email message to the "home front " (but not to her Supervisor), and she is a bit anxious about her first post-fieldwork meeting with her Supervisor.....According to the Supervisor, the PhD candidate is a very dedicated, although somewhat unstable PhD candidate who used to be his favourite in statistical analysis. The Supervisor hired her for a very hard PhD project, which he has secured from a funding agency with researchers who want to uphold the academic standard of the discipline against all kinds of undermining tendencies from the "soft sciences ". The PhD student has very successfully done all the necessary statistical analyses and the PhD project gives the Supervisor a lot of pride. What a shock to read a recent email message of from the PhD candidate (which she did not even have the courage to send to the Supervisor) in which she wants to add a lot of nonsense. The Supervisor can never allow that and it would also ruin his status amongst his colleagues. The Supervisor is one of the remaining strongholds of quantitative analysis!

She probably also comes with a suggestion to add the published research on from the methodology department to the supervisory team, a team of people who do not even know the difference between a mode and a median! The Supervisor now really needs to talk to his candidate before it is too late! How does the Supervisor handle this case?

Good Supervisors' behaviours, good learner behaviours and harmful supervision

A summary of the personal experience in research supervision (Section 4.1), the concept allocation between supervisor and candidate cluster (Section 4.2) and the discussion on research supervision cases 1-4 resulted in a comprehensive list of good supervisor behavior, good learning behavior and what constitutes harmful monitoring . From the Focus Group discussions of the sections 4.1 to 4.3, the following list of good supervisors behaviours was derived:

1) Managing the supervision process and relationship
2) Listening to the candidate
3) Supporting the candidate
4) Summarizing data for the candidate
5) Provision of meaningful feedback on time
6) Gathering information that could possibly assist the candidate
7) Checking theoretical knowledge base of the submissions from the candidate
8) Challenging the candidate with critical thinking methods to every work done or submittedInforming/educating the candidate on modern trends in the discipline
9) Guided experiential learning to assist the candidate, e.g.modelling, role-play, etc.
10) Self-disclosing personal areas of complexity in research
11) Disagreeing with the candidate where necessary
12) Encouraging the development and utilization of video observation on practical work by candidate
13) Other behaviours,e.g. silly political jokes, social chat, jokes, paperwork, setting up equipment, etc.

The Focus Group discussions also identified the following list of good learner behaviours:

1) Reflecting on the sessions and discussionsExperimenting in order to learn, e.g. role play, group discussion, etc.
2) Conceptualizing as part of discovering a different perspective or demonstrating a new understanding.

3) Experiencing emotion or attitude to various situations, e.g. tear, smile, laughing, disgust, discomfort , etc.
4) Planning research work, making decisions and setting goals, etc.
5) Other learning behavior, e.g. social chat, paperwork, off task behaviour, etc.

To the extent that we would like to see and experience good or excellent supervision, there are also extreme cases of harmful and inadequate supervision. The following list describes the characteristics of what constitutes harmful and inadequate supervision:

- A Supervisor who doesn't know what to do
- Supervising my Supervisor
- Never spends time improving skills
- Clients suffered emotional trauma from supervision
- Supervision is a waste of time
- Unconscious of cultural background for interpersonal processes ehaves unethically
- Does not meet 1 hour per week
- Not engaged
- Does not listen too
- Often distracted
- Locked in conflict
- Discusses strengths
- Unclear what to do
- Never discusses professional development
- Never observed meetings
- Highly qualified
- Focus only on diagnoses
- Do not use consensus or contract
- Relationship is cold and distant treats me with respect has threatened me physically a sexual relationship has been sexually intimate has been aggressive and abusive is damaged by previous
- Traumatized by supervision.

It follows from the above discussion on good supervisors behaviour, good learner behaviours and harmful supervision that the condition for good supervision practice includes the following:

- Enthusiasm for and interest in postgraduate research supervision.

- Appreciation of a range of good practice methods to supervision and an awareness of what constitutes a productive research learning environment.
- Establishment, for and with students, of clear goals and expectations in the light of up-to-date knowledge of the
- Universitys requirements.
- Productive and regular meetings held with students which provide them with sympathetic, responsive and effective academic, professional and personal support and guidance.
- Careful management of the supervisory process to achieve timely and successful completion of the thesis.
- Establishment of the right partnership that develops and nurtures the generic attributes for research.
- Provision of timeous quality feedback with open communication.
- Ability to manage a diversity of students interests, approaches and mode of delivery achieve success.

Therefore, the common Supervision problems are as follows:

1. Inability to reach the supervisor in times of crisis
2. Insufficient respect or trust in the supervision relationship
3. Not frequent enough
4. Insufficient emphasis on professional development in supervision
5. Insufficient formal agreement
6. Inadequate training in supervision
7. Inadequate guidelines or practices in supervision
8. Inadequate direct teaching of clinical skills in meetings
9. Insufficient opportunity to practice

The Key Question on good practices from experience is:

- ***How can supervisors push students to find fresh ideas, and to therefore contribute significantly to their field, at a pace set by policy makers and therefore well removed from the nature of the research focus and the space required for such intellectual endeavours?***

The Supervisor and Candidates' needs

- **Supervisor Needs** Training, Experience, Knowledge and competency, Mentoring, Realistic workload, Support, Supervisor-student relationship, Student selection and allocation.

- **Students needs include** Supervisor support, Peer support, Skills development, Student-Supervisor relationship, How to use feedback, and Selection of a Supervisor.

The Supervisor's role

The role of the Supervisor is to attend to the following:

- Offer guidance with the research topic and program.
- Offer guidance on ethics considerations and requirements, where appropriate.
- Provide information about the size, scope, and standard of a PhD.
- Facilitate access to, and if necessary funding for, essential resources (Email, photocopying, relevant sources—books as well as colleagues...).
- Provide support: personal at times of stress or success, with scholarship or part-time research position applications, opportunities for work, references.
- From the outset, encourage drafts of work as it develops. Provide constructive feedback, positive as well as critical. Use the now mandatory annual progress report as an early warning of unsatisfactory progress should this be necessary.
- Encourage attendance and presentations at conferences and use these occasions to provide introductions to others in the field.
- Be honest about the thesis being ready/not ready for submission.
- Be thoughtful about the selection of examiners.
- Offer guidance with the research topic and program. Given the continuing knowledge explosion, this is increasingly challenging. Research has become a huge, multi-purpose enterprise.
- Offer guidance on ethics considerations and requirements,where appropriate.
- Provide information about the size, scope, and standard of a PhD. Despite the apparent uniformity of standards across universities and disciplines, there are considerable variations in acceptable research procedures and methods of reporting.
- Facilitate access to, and if necessary funding for, essential resources (Email, photocopying, relevant sources—books as well as colleagues...). The increasingly complex technologies available place taxing demands on both supervisor and student.
- Provide support: personal at times of stress or success, with scholarship or part-time research position applications, opportunities for work, references.
- From the outset, encourage drafts of work as it develops. Provide constructive feedback, positive as well as critical. Use the now mandatory annual progress report as an early warning of unsatisfactory progress should this be necessary.

- Encourage attendance and presentations at conferences and use these occasions to provide introductions to others in the field.
- Be honest about the thesis being ready/not ready for submission.
- Be thoughtful about the selection of examiners.

Supervision can be considered as Teaching in the following ways:

- Promoting the supervisor's research development – pursuing the supervisor's established objectives.
- Imparting academic expertise, competences and skills in research.
- Sustaining academic excellence.
- Promoting learning to research.
- Developing from existing student abilities.
- Encouraging student development.
- Exploring new territory.
- Forming productive communities.
- Value-adding contributions to society.

Effective postgraduate supervision needs to be demonstrated at the beginning of the supervision work. From experience, the PhD student evaluation of research supervision looks at the supervisor, skill development, learning environment, infrastructure, thesis examination, clarity of expectations.

Virtual Research Supervision

The focus group discussion should explain how virtual research support works based on experience. Oversight roles need to be made more explicit at the operational, tactical and strategic levels. The collaborative virtual environment has the advantage of making the expectations of supervisors and students public so that new students can learn from the experiences of both supervisors and other students. From a research education perspective, collaborative virtual supervision also has the benefit of providing research students with specific experience working on a collaborative task and helping them to understand their project deeply and to build the necessary self-confidence and project management skills to run a project edit effectively. Collaborative virtual tutors can encourage students to share their ideas, reflect on their learning and research, and get feedback from both colleagues and their tutors. It has been found that virtual supervision works more effectively when students are aware of the potentials and limitations of the virtual environment, and when supervisors prepare students to

actively engage in the partnership process with a wider range of research capacities that make them more entrepreneurial and respond to the needs of the industry. For the supervisors, the supervision ratio has been characterized as a delicate balance between the dominance of the student's research due to too much guidance and its neglect.

It was noticed that virtual supervision works more effectively when students are aware of the potentials and limitations of the virtual environment, and when supervisors prepare students to actively engage in the partnership process.The new Higher Education Policy *Education 5.0* requires the knowledge and innovation research and training to create a context in which research students will be expected to complete their degrees more quickly and graduate with a wider range of research capabilities which make them more entrepreneurial and responsive to industry needs. For supervisors, the supervisory relationship has been characterized as striking a delicate balance between dominating the student's research by providing too much guidance and neglecting it by assuming too much autonomy on the part of the student (Delamont et al, 1998). Group-based approaches offer more explicit and broader forms of support for students, including fostering an environment for reflection and discussion in informal gatherings, seminars, conferences, panel supervision, and peer groups (Johnston, 1999). The collaborative team partnership approach includes two important dimensions.

- The first is the intention to develop a common goal with the shared understandings and a common language.
- The second is participative decision-making.

The specific outcomes of the discussion on virtual research supervision took note of the following observations:

- The model is based on supervisors as a team leader, researching with their research students in the context of collective projects. The association between supervisors and research students follows the traditional team working stages, namely forming, storming, norming, and performing, to establish a balance between freedom and intervention. Interactions between students at different stages of their research cover the exchange of practices (know how, strategies) and critical reflection and present research networking as an important means for professional development.
- Web-enabled interactive course management tools and other new technologies afford new possibilities for supervision, particularly for distance students or those working in industry based settings.

- Collaborative virtual supervision uses the ability of the internet for global communication, and both synchronized and non synchronized interactions in a planned way to facilitate a range of forms of interplay between members of the research team.
- Students are given access to an interactive learning environment in which they can interact with peers and supervisors, and are given chances to lead a project, experiment and reflect.
- Collaborative PhD supervision at a distance is feasible. From experience, one of the aims was to maintain continuity of supervision for the student while another was to create an effective approach for remote research supervision where face-to-face meetings between students researchers and supervisors were not possible.
- The virtual team-work approach was used with the aim of improving the quality and quantity of research by all participants. This involved several components. Firstly, the PhD student exchanged test results, figures, graphs, digitized picture, and texts with the supervisor and co-supervisor using email. Secondly, the author modeled his own research approach by communicating his daily research plans, methods, and outcomes from a parallel research project in another country/ environment. The frequency of interactions, and quality of discussion between the student and supervisors improved significantly compared with the once a week face-to-face meeting.

The lack of non-verbal communication created some misunderstandings and challenges for ongoing student engagement and motivation. One way of addressing this was to engage the students in role playing, for instance through rotating the role of among research students for weekly online meetings. The second method was through organizing a virtual team where all roles were carefully defined in relation to the team members: supervisor, senior research student, new researcher and similar roles. More experienced students played supervisory roles for newer researchers. Role-playing enhanced creativity and motivation and encouraged the growth of life-long learning skills. The Supervisors should also take on the public role of research learners, modelling the real-life processes of research. by exposing their own current research issues, problems and questions in the online forums for student discussion and comment. The intention is to facilitate and to promote research learning using pedagogy embedded in real life situations, which makes researchers more open minded, agile, tolerant of different methods and views, more ready to grasp changes and opportunities in a virtual learning environment.

Research group members should ensure that they recognize the need to create an informal, respectful, and mutually stimulating environment, and that everyone is not just

considering what they can gain from the group. If successful, supervision in a collaborative virtual environment can help students negotiate and make decisions, plan, interpret and ultimately communicate their results. The virtual environment makes the comments of supervisors and colleagues visible and ensures that their views are verified throughout the project. It should also be recognized that new researchers and students who appear to have lower self-esteem live with more anxiety and have difficulty communicating and participating in decision-making, especially online. Transparent expectations and positive feedback must be communicated consistently to encourage all team members to participate. There must also be opportunities for students, especially at the beginning, to communicate privately with the supervisors via e-mail and their need for private communication to be respected. The collaborative virtual environment has the advantage of making the expectations of supervisor...

Cognitive Styles in Research Supervision

According to Armstrong, S.J, et al (2004), cognitive styles are the modes of functioning where which individuals exhibit in their intellectual and perceptual activities that culminate in problem-solving and decision-making habits. Lusweti S., Kwena, J., and Mondoh, H., (2018), and Armstrong, S.J. (2004) came up with the following hypotheses with regards to research supervision:

- *Hypothesis 1:* The greater the similarity between supervisor and student cognitive styles, the more nurturing the supervisory relationship.
- *Hypothesis 2:* The greater the similarity between supervisor and student cognitive styles, the lower the degree of domination imposed by either party.
- *Hypothesis 3:* The greater the similarity between supervisor and student cognitive styles, the more the degree of affinity of the other.
- *Hypothesis 4:* Intuitive members of dyadic relationships are more productive than analytic members with regard to knowledge generation.
- *Hypothesis 5:* Intuitive members of a dyad are more nurturing than analytic members.
- *Hypothesis 6:* Analytic members of a dyad have a tendency of dominating than intuitive members.
- *Hypothesis 7:* Where there is in-congruence, intuitive members of the dyad will be more liked than analytic members.
- *Hypothesis 8:* Analytic partners outperform those in other dyadic combinations.
- *Hypothesis 9:* Irrespective of cognitive styles, performance outcomes will be significantly influenced by the degree to which students and supervisors share a nurturing relationship and like one another.

Quality Assurance Framework

Quality assurance is a systematic, structured and continuous quality orientation. The purpose of a QA scheme is to ensure that educational activities are of high quality and evolve towards further improvement. The institutional quality assurance system of the universities is a system in which the courses, courses and degrees offered by the universities are regularly and objectively evaluated (Badri, G., 2019). The key elements of the Quality Assurance Framework include the following:

1. External Reference Points with the Regulatory Authority
2. Programme regulations and academic policies
3. Examination Boards and External Examiners
4. Senate programme approval processes
5. Programme and Module review processes
6. Collaborative programmes with Associates, Affiliates and other partners
7. Quality Assurance and Learner Support mechanisms that involve students
8. Quality Assurance Framework enhancements.

Quality supervision means the following:

- The supervisor must be an expert in the field in which the student is researching, who gives timely high quality feedback and is highly available, meaning and the research work should be trustworthy and supportive in accordance with the institutional framework;
- The supervisor supports the research activities and publications and leads them by example to generate and disseminate new knowledge;
- Providing a strategic direction in the development of scholars who publish high quality work;
- Leadership in academic, personal and professional terms
- Integrity.

Quality of education at universities requires quality in teaching, studying, research and support. The library should prove to be an academic machine house, center of university education and university intellectual strength. The quality dimensions in higher education are shown on Table 4.

Table 4: *Quality dimensions in higher education by Owlia and Aspinwall (1996)*

No	Dimensions	Characteristics
1	**Tangibles**	Sufficient equipment/facilities Modern equipment/facilities Ease of access Visually appealing environment Support services (accommodation, sports, …)
2	**Competence**	Sufficient (academic) staff Theoretical knowledge, qualifications Practical knowledge Up to date Teaching expertise, communication
3	**Attitude**	Understanding students' needs Willingness to help Availability for guidance and advice Giving personal attention Emotion, courtesy
4	**Content**	Relevance of curriculum to the national agenda and job creation Effectiveness Containing primary knowledge/skills Completeness, use of computer Communication skills and team-working Flexibility of knowledge, being cross-disciplinary
5	**Delivery**	Effective presentation Sequencing, timeliness Consistency Fairness of examinations Feedback from students Encouraging students
6	**Reliability**	Trustworthiness

Integrative Conclusion

The minimum criteria for being a supervisor include:

- Having the appropriate qualifications as defined by the discipline or profession of the supervisor;
- Has the appropriate knowledge and skills for the discipline and is aware of its limits;
- Uses the formal supervision contract;
- Observes, reviews, or supervises exercise sessions of the supervisee;
- Provides evaluative feedback to the supervisee that is fair, respectful, honest, ongoing, and formal;
- Promotes and invests in the welfare, professional development and development of the supervisee;
- Maintain confidentiality and ethical practices; respects the roles and the relationship between the supervisee and the supervisor.

The students' perception of the qualities and characteristics of supervisors includes the following expectations:

- Academic development
- Helps in the selection of research topics
- Helps in obtaining relevant literature
- Helps in the selection of suitable methods
- Helps in instrument construction and validation
- Helps in writing and oral presentation
- Familiar with and gives insights into theoretical aspects of the research work
- Professional development
- Sets realistic deadlines and expectations for research progress
- Promotes the development of analytical thinking
- Criticizes and evaluates constructive written work by the students
- Timely feedback on the written work of the students
- Promotes the interaction of the students with others
- Scientists, in order to expand the visibility
- Impressed by the research
- Ethics compliance.

Reflections in the research supervision are important from the point of view of both the supervisor and the student. You think of your own research experience in doctoral studies, remembers the most difficult part, the first research supervision experience, what would you have liked to have been explained better? There are certain expectations that one has of supervisors. The supervisor should:

1. Show interest in student research

2. Give critical feedback on the written work of the students in a timely manner
3. Encourage the students to present their work at seminars / conferences
4. Be friendly
5. Encourage the students to work independently
6. They know about the expected standards
7. Be responsive to shortcomings in their work and progress
8. Ensure that arrangements for upgrading from MPhil to PhD are appropriate
9. The student needs help with their research
10. Help the student develop their writing
11. Have good verbal communication skills the student through appropriate meetings, conferences and training opportunities to inform the researcher.
12. Be knowledgeable about the student's research topic
13. Ensure that the student meets deadlines
14. Be an active researcher
15. Ensure all practical arrangements are made for the oral examination, including liaison with examiners
16. Help the students in choosing the research topic
17. Have leadership skills
18. Ensure that supervision records are written, agreed and subsequently filed
19. Continually motivate the student
20. Ensure that the student has conducted a training needs analysis to identify his/her personal and professional skill requirements.

Conclusion

Postgraduate research supervision incubates a nation's research and development and stimulates economic growth and development leading to sustainable social provisions. The research used a qualitative research methodology. The research design used was the discourse in-depth analysis of the Laclau and Mouffe type supported by document analysis and Focus Groups. Focus Group discussions were held with 50 seasoned academics from various African higher education institutions via Google Meeting/ZOOM and the document analysis used 450 published papers acquired from Google Scholar. The study established that good research supervision entails maintaining best way elements, enhancing the skills and knowledge of the supervisee, assisting with the growth of reflective practice, and providing the supervisee with international scholarly exposure with a strong coherence of arguments.

Potential topic areas in the supervision agreement should include the following sections:

- Goals

- Specific Practice Skills to develop in Supervision
- Supervision methods
- Format and content of sessions
- Frequency and duration of supervision
- Roles, responsibilities and boundaries
- Availability between sessions
- Approach to possible problems and difficulties
- Evaluation of Supervision
- Confidentiality
- Nature of supervision record and how used
- Consideration of professional ethical guidelines for supervision

The following research questions were at the center of the summarizing discussion:

1. How do you generate interesting, innovative and effective ways to supervise doctoral / master's theses?
2. What knowledge and skills should be developed in order to cope with the opportunities and challenges of virtual research mentoring for students?
3. From a quality assurance framework / international best practice perspective, how does one become a successful and excellent research supervisor?
4. What should the Policy Brief be in research oversight that incubates a country's research and development agenda and stimulates economic growth and development that lead to sustainable social benefits?

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