

## Creating Sustainable Supervision of Master's and Doctoral Students in an ODeL Context in the Field of Mathematics Education.

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## Purpose of the study

This study describes the origins of cohort workshops in the mathematics education department in an institution in sustaining and supporting the supervision of master's and doctoral (M&D) students in an ODeL context.

The research question was, 'How can sustainable supervision of master's and doctoral students in an ODeL Context in the field of mathematics education be created?'

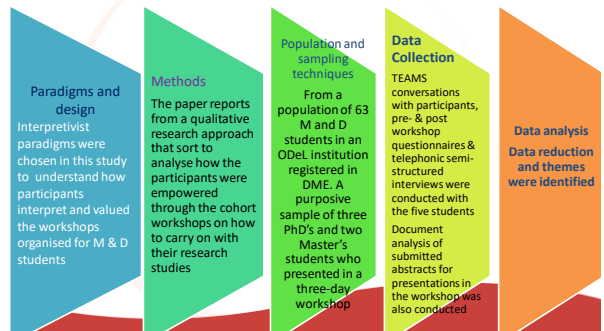
## Background and Introduction

The new pedagogy to cater for the complex and diverse terrain in the higher education sector, is necessary to improve the quality as well as throughput rate in postgraduate studies.

Most often masters and doctoral students registered in an ODeL context meet their supervisors on the graduation day for the first time. In an ODeL context, a virtual learning environment bridges the gap during supervision to enhance supervisor-student engagement.

Prompted by an experience I encountered in my former journey as a mathematics PhD student ten years ago, I valued the contribution made by the compulsory cohort workshops we attended in my former face to face institution. After signing the supervisor/ student agreement form, then what? How does one navigate the proposal writing and or chapter writing?

## Methodology



## M & D Supervision

Green (1988) argues

for freedom as a form of human consciousness whereby supervisors can rouse postgraduate students

- (i) to go in search of their own meaning to provoke them to reach beyond themselves,
- (ii) to wonder, to imagine and to pose their own questions,
- (iii) to be empowered such that they are able to think about what they are doing,
- (iv) to share their meanings and to conceptualise and make sense of their world-life experiences.

## Theoretical underpinnings

- The study was underpinned by the Community of Practice Theory by Wenger (1999). A 'community of practice' is comprised of three elements, namely the **domain, the community and the practice** (Wenger, 2002).
- **Domain** is characterised by the **commitment** of its members to a **specific goal, identified by specific competencies and values** those competences
- Community-engaged for **mutual engagement, assist** each other and are engaged in **joint activities and discussions**; they **help each other and share information**; they **build relationships** that enable them to **learn from each other**. In this study M & D students **worked together & supported each other in completing their research, and supervisors** who work together and share information with regard to the supervision process also form a 'community of practice.
- As members of a 'community of prac-tice', they are able to **discuss issues of common concern, bounce ideas off against each other, and find solutions to problems experienced in their postgraduate study and supervisory journey.**

## Theoretical underpinnings and Problem statement

- Novice supervisors also benefit in that community's shared critique
- In the practice, there is development of shared repertoires of resources and ways of addressing recurring problems in supervision
- The major problem in an ODeL institution, is that:
  - (i) challenges originate from the spatial and temporal
  - (ii) distance and disconnection between the supervisor and student.
  - (iii) students fail to complete their studies
  - (iv) Students drop out of their studies due to both academic and non-academic reasons,
  - (v) Students sometimes do not understand what is required of them in the feedback
  - (vi) Students live in geographical and intellectual isolation, as they often reside in rural areas with no libraries in their vicinity, and with internet connectivity either lacking or unreliable
  - (vii) Students' inability to complete their studies within a reasonable period of time

## Findings Continued

Comments after the workshop can summarised as:

*Very informative and enlightening. Presenters were very knowledgeable and systematic. The workshop was relevant and empowering*

- *Workshop programme-Well thought off and well paced."*
- *"Excellent"*
- *"Packed but manageable"*

**Sections of the workshop that students liked most**

- *All of the sessions because they covered my expectations."*
- *"Sessions on research designs"*
- *"Presentations on stages of the research project by Professors"*
- **Sessions least valuable**
- *None of them. They were informative since I am a new student."*
- *"none. all sessions were useful and relevant to M&D supervision"*
- **Take home lessons from the workshop**
- *The formulation of the problem and the literature review. I also learnt a lot on the language to use."*
- *"importance of having good relations with my supervisor"*
- *Everything. Title formulation, problem statement, literature review, research questions, "*
- *"It helped me to write proposals and chapters coherently"*
- *"Related literature review correlation"*

## Nature of the cohort workshops

They are usually held during the first quarter vacation on TEAMS

Students are exposed to presentations on the different components of a study proposal from experts in Mathematics Education.

Day 1: Students were addressed on administrative issues like Turnitin and ethical clearance procedures, the research journey, formulating a problem statement academic writing and conceptual and theoretical frameworks, in the morning session. The afternoon session was set aside for students to present their abstracts

Day 2: Presentations covered Literature Review, paradigms, qualitative and quantitative research methods together with student presentations in the afternoons

Day 3: Students were taken through Mixed Methods, PhD Publication Requirements-Article framework, Achieving coherence between the objectives/research questions, theoretical/conceptual frameworks, data collection procedures and analysis, then results and conclusion.

Critiques, questions and were provided for each student's presentation

## Conclusion

- **Suggestions on improvement of the workshop were:** *Audios should be given quickly and there is need for presenters to be visible if possible."*
- *"in future infuse the library component into the workshop"*
- *"Each student presentation to have feedback and points to improve on"*

Findings revealed that the presentations done in the workshop were informative and were relevant to shape the students' research studies as they maintain coherence between the components of their proposals and thesis. The study recommends that:

- (i) It is important to create a sustainable learning environment that empowers and guides masters and doctoral students on writing abstracts, proposals and thesis.
- (ii) Those could be done through cohort workshops that give students to present their work, be critiqued, supported and given reference to readings relevant to their studies.
- (iii) Sourcing of expertise on supervision from other institutions
- (iv) Novice supervisors can also be empowered during the discussions held in the cohort workshop
- (v) Clarity on the research journey is provided through the cohort workshops

## Results and discussions

**Expectations about the workshop**

*To share research experiences from senior researcher"*

*"Academic writing and analysis"*

*"To get more insight on what to put in my academic writing"*

(i) Findings have been reduced to three themes, (i) **Students' understanding of a proposal,**

*"It is the work plan of the research "*

*"Road map to a research study"*

*"Proposal writing opens the way for me to understand what am to build on my research"*

(ii) **Concepts learnt about research at Honours and or Master's level**

*Ordinary Generating Functions"*

*"read, read and read"*

*"Challenges students experience in understanding concepts of circle geometry"*

(iii) Concerns that students had about supervision

*"I will like to complete this program on time but am facing lots of financial difficulties due to unemployment since 2020 till to date, Time limits to complete my PhD qualification given by my institution is already completed. Please push in your side to complete the study"*

Mathematics is not about numbers, equations, computations, or algorithms: it is about understanding.

— William Paul Thurston, American mathematician

Thank  
you

