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Strategies Used for Effective Research Supervision in the Completion of Postgraduate Studies in Selected Universities of Uganda

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Abstract

Research supervision is key, yet it has been faulted for delayed completion of postgraduate studies, particularly at Master's degree and PhD levels in Uganda. This study sought to establish the strategies for effective research supervision, especially during the COVID-19 lockdown. The study was guided by the phenomenological research design using a qualitative approach. Structured questionnaire was administered to 105 supervisors, while in-depth interviews were conducted with 3 deans/directors and 15 academic department heads. Field data was supplemented with a review of relevant documents. Data were analysed using the thematic analysis

technique. Findings revealed that the sampled universities used various supervision strategies including online research supervision, corroborative supervision, coordination, workshops to (re)tool supervisors and students; and motivation and administrative follow-ups to track students' and supervisors' progress to enhance students' completion of postgraduate research. The study recommends that universities design and incorporate online research supervision policies and guidelines in graduate training policies and ensure that they are operationalised. Furthermore, universities should provide a robust virtual infrastructure to enable online supervision. In addition to team supervision, continuous (re)tooling of students and supervisors, establishment of research coordination offices and progress tracks, the adoption of flipped supervision in which supervision approaches, spaces, and student and supervisor roles are varied should be considered. Universities could also consider developing courses on the pedagogy of postgraduate supervision in which research coordinators, supervisors and students receive training in the identified strategies and other strategies to improve postgraduate completion rates. Areas for further study have also been recommended.

Keywords: *Completion; COVID-19; Postgraduate; Research Supervision; Universities.*

Introduction

Postgraduate studies are academic programmes attended after attainment of the undergraduate degree. These include master and doctoral studies, graduate certificates and postgraduate diplomas. Master and doctoral studies are conducted in various modes including coursework and research, coursework and project work, or research alone (National Council for Higher Education Postgraduate Benchmarks, 2015). Postgraduate programmes further train students in understanding existing knowledge and practice, and in creating new knowledge, networking, problem-solving, project management, communicating complex ideas, research governance and organisation, among others (van Rooij et al., 2019; Ndayambaje, 2018; Gantogtokh & Quinlan, 2017; Motseke, 2016). Such skills are too significant for any institution of learning, academic body, organisation, and country to ignore. This justifies the need to improve postgraduate education.

Completing a postgraduate programme is assumed a great achievement to the graduate, the institution of higher learning attended, the academic profession, and the country, in form of the economy (Botha, 2016). However, the quality and throughput of postgraduates are a concern worldwide among institutions of higher learning. The length of time it takes for postgraduate students to complete their studies, the success rate of postgraduate students, and the high percentage of postgraduate students who dropout before graduation raises concerns (Rong'uno, 2016).

The duration of postgraduate studies and the time many students take to complete have become key questions that need consistent attention, not only to students but also to institutions, funders of postgraduate studies, governments and other stakeholders in higher education (Noel et al., 2021; Rong'uno, 2016). As noted in Botha (2016), several studies have been globally conducted on postgraduate studies by the World Bank, the South African Department of Education, the Association of African Universities, the United States Partnership for Higher Education in Africa, and the Centre for Higher Education and Transformation, among others. Besides, the Higher Education Research and Advocacy Network in Africa (HERANA), with its' project on higher education and development, has been involved in research on the status of postgraduate enrolment and throughput and its impact on world economies (Luescher-Mamashela, 2015, cited in Botha, 2016). These studies indicate a challenge of poor students' completion of postgraduate studies, especially in Africa where 85% fail to complete in the allocated time (Motseke, 2016).

In Kenya, for instance, three universities which were most recognised in postgraduate training (University of Nairobi, Moi University and Kenyatta University), experienced very low completion rates between 2001 and 2015. In particular, out of 984 students who were enrolled for doctoral education in these institutions between 2001 and 2015, only 252 (25%) were able to graduate during the same period (Rong'uno, 2016).

Similarly, Mukhwana et al. (2016) noted that although master's and doctoral academic programmes are meant to run for two years and three years, respectively, majority of Kenyan institutions rarely meet these timelines. Majority of the postgraduate students take at least double the minimum required years to complete their programmes, which continuously places challenges on Kenyan public universities (Waswa et al., 2020; Ndayambaje, 2018) the challenge to complete these programmes on time has remained weighty. Hence, this paper aimed to explore supervision as a contributing factor. The study adopted Narrative Research Design and targeted international PhD graduates from Kenyatta University in Kenya. In total, the study dealt with six graduates of the 2015 and 2016 classes sampled by means of Snowball technique. An interview guide was developed. E-mail, Skype, WhatsApp chats and phone calls were used in data collection. Thematic analysis was used to analyze data which were reported in narrative form using direct quotes and/or paraphrase. The overall findings revealed three supervision defects that hinder the timely completion of PhD for international students. These are (i.

The scenario in Kenya is not different from that in Uganda where the completion rate for master's degree programmes between 2001 and 2008 was low; 15.8% for academic year 2001/2002, 9.1% for 2002/2003, 11.6% for 2003/2004, 6.0% for 2004/2005, 8.9% for 2005/2006, 13.2% for 2006/2007, and 0% for 2007/2008 (Eyangu, Bagire & Kibrai, 2014). In addition, according to Kabeba and Muriisa (2015), 50% of students who enroll for doctoral programmes in African universities fail to complete their studies in the allocated time. Likewise, on 6th of March, 2020 Prof. Mukadasi, Director of Directorate of Graduate Research and Training

at Makerere University in his address during the DAAD AUGA workshop on postgraduate completion and research output, noted "... besides the significant role in generating research outputs to drive development, completion rates of postgraduates remain unsatisfactory" (Tuhereze, 2020).

Elsewhere and over the years, research supervision has been pinpointed in various studies as the key contributor in completion of postgraduate studies (Cekiso et al., 2019; Kaur & Kaur, 2013; Abiddin & Ismail, 2011). In the supervision period, which was the focus of the current study, focus is put on the thesis, dissertation or research project. According to Ngozi and Kayode (2013), the way the supervision process is handled by the students, supervisors and universities determines the time the student will take to complete the research phase. Too much control threatens the originality of the student and too little control can delay completion or even lead to failure and dropout. It is against this background that this study explored the strategies used for the effective research supervision in the completion of postgraduate studies in Uganda, particularly during the COVID-19 lockdown. The subsequent sections of this article focus on the brief review of the literature and the theory underpinning the study, methodology, discussion of the findings, conclusion and recommendations, study contribution and areas for further research.

Review of the Literature

From a complex systems approach of factors affecting timely completion of doctoral studies (Pitchforth et al., 2012), supervision encompasses several dimensions including student-supervisor relationship, and supervisor's expertise and experience in the research topic. Pitchforth et al. (2012) studied factors perceived to contribute to the timely completion of doctoral studies focusing on a single research group in Mathematical Sciences. Using the Bayesian networks, results showed that supervision largely contributes to the research project, which in turn leads to completion of doctoral programmes. Although completion challenges are common at the doctoral level, this study is among several that have ignored master's degree programmes, yet statistics indicate delay in students' completion of master's degree programmes (in Akudolu & Adeyemo, 2018; University of Dar es Salaam, 2016). Furthermore, other key variables that may affect postgraduate students' timely completion regardless the level include student support and the absolute study environment.

Since student supervision and degree completion are very closely linked (Rensburg & Mayers, 2016) the research supervision process should be the most conducive aspect of postgraduate training (Namubiru-Ssentamu & Bakibinga-Sajjabi, 2020; Bachwayo et al., 2017; Ghani et al., 2012). According to Ghani et al. (2012), supervision should be a friendly, approachable and flexible phenomenon, and the supervisor should be a resourceful expert. Similar studies place research supervision at the forefront in postgraduate training (Mbogo & Wambua, 2020; Abiddin & Ismail, 2011).

A supervisor's busy schedules, lack of supervision experience, lack of knowledge in the relevant field, poor attitude towards quality research work, allocation of many supervisees,

additional work assignments and inability to use modern tools of communication have hindered the supervision process (Sarwar et al., 2018; Rensburg & Mayers, 2016; Motseke, 2016). Yet, successful completion of the thesis has a direct bearing on a harmonious relationship between the supervisee and supervisor (Akpapere et al., 2017).

Empirical studies conducted on supervision and completion of postgraduate studies consistently show that research supervision directly and indirectly affects students' completion of postgraduate studies (Olubusoye & Olusoji, 2020; Mbogo & Wambua, 2020; Namubiru-Ssentamu & Bakibinga-Sajjabi, 2020; van Rooij et al., 2019; Sverdluk et al., 2018; Abiddin & Ismail, 2011). However, there was a research gap with regard to how research supervision can be enhanced, especially during the COVID-19 pandemic and within the Ugandan context. This gap attracted the current study.

Conceptual and Theoretical Review and Framework

The current study is grounded in Tinto's (1993) interactionist theory of student departure. Tinto emphasised that the interaction between the student and the school environment leads to student persistence or withdrawal. Tinto's theory states that in order to persist, students need integration into formal (academic performance) and informal (faculty / staff interactions), academic systems and formal (extracurricular activities), and informal (peer-group interactions) social systems.

In the theory, the three major sources that can cause a student to withdraw are: academic difficulties, inability of individuals to resolve their educational and occupational goals, and students' failure to interact in the intellectual and social life of the institution (Tinto, 1993; Berger & Braxton, 1998).

These interactions occur among the students and the academic and social systems of a college or university (Tinto, 1993). According to Tinto (1999), increase in social and academic integration enhances students' commitment to their goals and towards the institution. Students' commitment will subsequently increase the rate of retention, completion of tasks and institutional success (Tinto & Pusser, 2006). Tinto's theory is based on assumptions that student interaction with faculty members is an important component of students' integration within the social and academic systems of their institutions. More informal interaction with faculty members could increase the level of their institutional commitment and subsequently minimise the risk of withdrawal.

However, Tinto's 1993 theoretical model does not explain the behaviours between students and faculty members or peers that facilitate integration in academic and social systems. For instance, claiming that interactions between students and faculty members, it provides a plausible basis for the current study that assumes that interaction between students with faculty through supervision and academic support leads to timely study completion. Tinto's 1993 theoretical model is presented in Figure 1 to show how students' interaction in both social and academic systems affect the completion of studies.

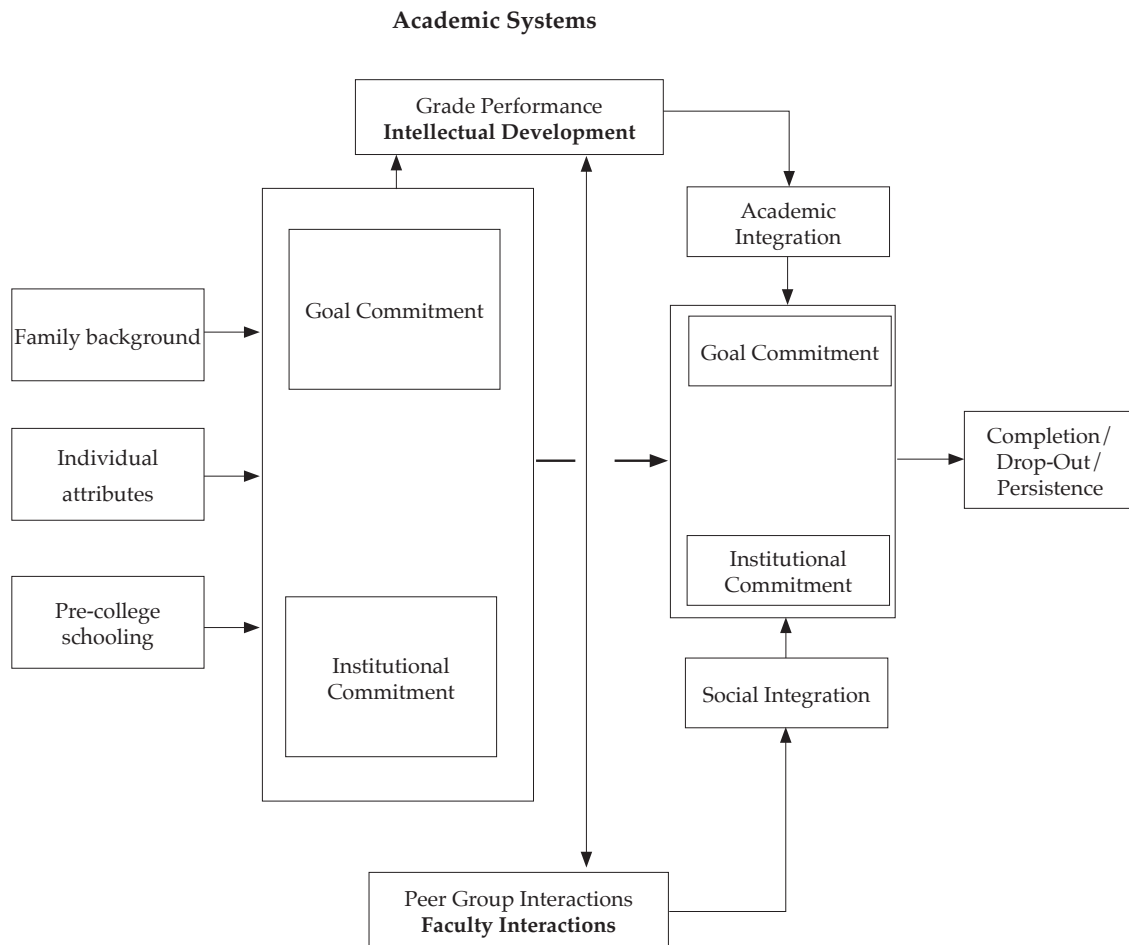


Figure 1: Tinto's (1993) Theoretical Model

Guided by van Rooij et al. (2019), in the current study, academic integration referred to involvement in professional activities and opportunities, collaborating with researchers, frequent contact with university and supervisors, integration in the department community, and academic support from peers and staff. Social integration was conceptualised as sharing mental support with peers, sharing holiday and weekend stories, and social activities such as having a drink together after work and listening to peers' progress (van Rooij et al., 2019) which are manifestations of postgraduate research experiences. Therefore, this study unveiled postgraduate students' engagements and interactions within the university environment, social and intellectual settings through supervision, research and learning to improve students' commitment towards their academic and research goals.

Methodology

Research approach

The study adopted the phenomenological research design using the qualitative approach because the study was interested in understanding, describing and interpreting the lived experiences of the research participants, which is typical in such studies (van Manen, 2014; Denscombe, 2014). In-depth interviews were used to collect data from deans/directors and academic department heads. A structured questionnaire was used to collect data from postgraduate research supervisors/lecturers. In addition, documents were analysed to supplement field data. Data was collected on the strategies for effective research supervision in the completion of postgraduate studies in the current era.

Study sample

The study sample comprised supervisors, heads of department and Faculty of Education and School of Graduate Studies deans and directors from three universities, one private and two public ones. Research supervisors, academic department heads and school directors/deans were preferred because they are key players in postgraduate studies in Uganda's higher education system. Deans/directors were purposively selected while supervisors were selected using convenient sampling. The study involved 105 supervisors, 15 heads of department and 3 directors/deans of postgraduate schools and schools of education. The recruitment of participants in each of the above categories was determined by data saturation. Table 1 summarises the constitution of participants and sampling techniques used to select them.

Table 1: Summary of the study sample

Category of participant	Sample	Field Tools	Sampling technique
Supervisors	105	Open ended Questionnaires	Convenient
Heads of Department	15	Interview Guide	Purposive
Deans/Directors	3	Interview Guide	Purposive
TOTAL	123		

Source: Authors' Construct (2021)

Research procedure

This study was part of the Master of Education in Research of Moi University thesis study titled "Determinants of Students' Completion of Postgraduate Studies: A case study of Selected Universities in Uganda". After obtaining an introductory letter from the Dean, School of Education, Moi University, ethical clearance was obtained from Uganda Christian University Ethics Review Committee. Thereafter, permission to collect data was sought from vice chancellors or deputies, or dean/directors of graduate training of the selected Universities. Due to the

COVID-19 lockdown, most of the data was collected virtually. Through emails, the selected participants were briefed about the purpose and expectations of the study, and the ethical considerations. Consent to participate was obtained from all participants during data collection.

Data analysis

According to Creswell and Poth (2016) and Braun and Clarke (2006), analysing qualitative data involves transcribing the data, working with the words, identifying codes, reducing codes to themes, counting the frequency of codes, relating categories to the literature, creating a point of view and reporting the data. Guided by this process, interview recordings were transcribed and a thorough preliminary read-through in all transcripts was done to ensure clear coding. The transcribed content was cleaned and the final content stored in a word-processing file. The transcribed content was coded, to enable data analysis using the thematic analysis technique. Categories and themes were identified, analysed and interpreted in line with the specific study objectives. Verbatim quotations were applied to interpret the emerging themes.

Findings and Discussion

The study sought to establish the strategies for effective research supervision in the completion of postgraduate studies in selected universities of Uganda. The main research question which stated: *“What are the current strategies for effective research supervision in the completion of postgraduate studies?”* was used to generate data. To answer this question, data were gathered through individual interviews with the deans, heads of department and an open-ended question item in the supervisor’s questionnaire. The themes and their categories that emerged from the data are presented in Table 2.

Table 2: Summary of themes and categories of the current strategies for effective research supervision in the completion of postgraduate studies

The current strategies for effective research supervision in the completion of Postgraduate studies		
Category of participants	Emerging themes (strategies)	Code categories
Deans/ directors	Virtual	Emails
		Zoom meetings
		WhatsApp groups
	Coordination	Coordinating office Virtual coordination (Cohort WhatsApp groups) Follow up on individual students and supervisors
Retooling	Supervisors’ workshops ICT technical support Self-training	
Progress tracking	Periodic presentations Progress reports	

Heads of Department	Expertise	Area of specialisation
		Sourcing experts in the students' area of interest
	Virtual	WhatsApp groups
		Emails
		Zoom
	Workshops	Periodic presentations
		Supervising workshops
Collaborative supervision	Joint feedback on progress	
Lecturers/ Supervisors	Virtual	Emails
		WhatsApp
		Zoom
	Collaborative supervision	Supervision teams Sharing expertise Collegial assistance Intensive teaching of Theory handling colleagues
	Motivation	Monetary and non-monetary support to students and supervisors Mentoring Workshops support for both supervisors and students.
	Operationalising rules	Enforcing guidelines Disappearance of students Regular classwork attendance
	Harmonising responsibility	Reasonable load allocation Reduced responsibilities to supervisor Wise time management to students.
		Students' work and studies balance
	Regular training	Workshops

Source: Field data (2021)

From Table 2, the emerging themes with regard to the current strategies used for the effective research supervision in the completion of postgraduate studies were: - virtual supervision, coordination, retooling, progress tracking, expertise, workshops, collaborative supervision, motivation, operationalising rules, harmonising responsibility and regular training. The deans/ directors and heads of department participated more in coordination processes, while the lecturers/ supervisors were more involved in the actual supervision processes, using various strategies.

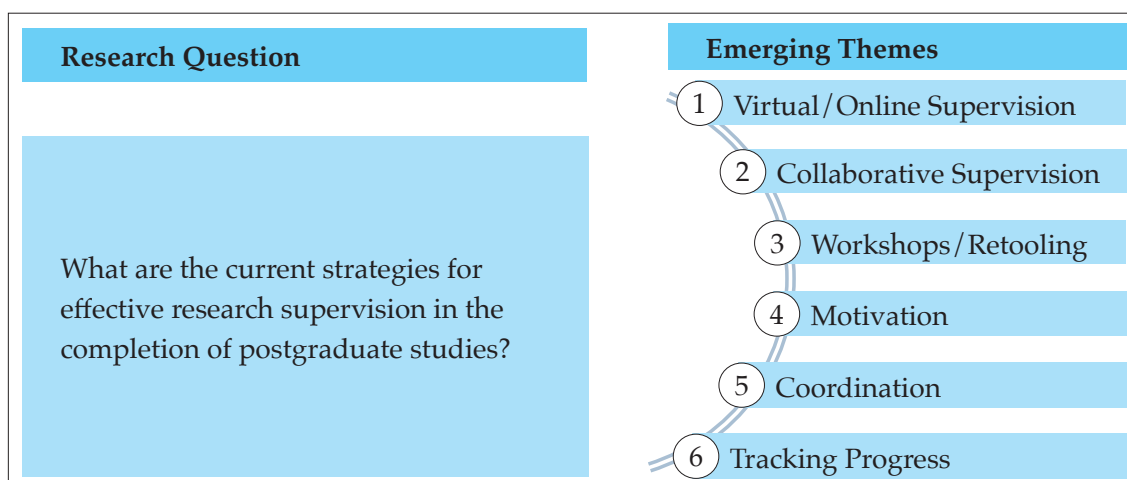


Figure 2: Current strategies for the effective research supervision in the completion of postgraduate studies in selected universities of Uganda

Source: Field data (2021)

In the ensuing sections, each theme is discussed in relation to the current study findings and the literature.

Online/virtual research supervision

Online research supervision is the utilisation of electronic or digital communication technologies to communicate, guide and give feedback to students at a distance during their research activities. According to Ghani (2020), online research supervision may significantly apply video and audio teleconferencing between students and supervisors. Similarly, the current study revealed that it is positively impactful for supervisors and students to use the opportunities in zoom conferencing technologies during the supervision process.

As summarised in Table 2, participants' views revealed that online or virtual research supervision should be incorporated in the graduate research supervision. This was frequently reported by all categories of participants. A dean reported that the School was set to graduate 15 PhD students due to adoption of online research supervision:

For this coming graduation, we are likely to graduate 15 PhDs in this school alone. That tells you the online engagements that students had with their supervisors because last year we were closed. So, students were being assisted online. (Dean1)

Another participant noted that students' progress during the pandemic period hiked because of online engagements students had with their lecturers and management:

For the current, COVID taught us a lesson; you see when COVID came we had to start working online. And this has sped up the progress of students. Many defenses have happened online. Now we should try to officialise online supervision because we have

seen its benefits. We want to design the regulations so that it can officially continue even after COVID. (Director 1)

Similarly, a head of the department reported that during the lockdown, he was able to supervise a PhD student to completion and the master's degree students the participant supervised during the same period progressed very well. The participant further revealed that other supervisors who had not embraced virtual research supervision had not even presented their students for proposal presentation:

...For example, personally, I have supervised 1 PhD student to completion within the difficult times of COVID using email communications and the other six students for master's degrees are finalising their work. If I compare, do you know that their colleagues who were not assisted online for maybe some reasons have even not presented their proposals? (Head of Department 3)

Participants revealed that WhatsApp online platforms eased the communication between the faculties, departments and among supervisors. The following quotations illustrate that participants supported the use of WhatsApp during research supervision:

Many students are joining graduate studies with obligations; we should give them options that can favour them. For example, we can allow them to keep reaching us even on WhatsApp so that they feel at ease and get motivated to learn and improve their work. (Supervisor 38)

...There is timely communication to both students and supervisors through WhatsApp groups. If there is any issue with supervision, we communicate through the graduate supervisors' forum and to students. Supervisors have agreed to use emails, WhatsApp and zoom sessions to assist students and this has been too helpful. (Head of Department 3)

To make periodic presentations successful, we created WhatsApp groups for graduate students with their supervisors in their respective cohorts. We keep posting the next presentation date; students are asked to bring their proposals; they are encouraged to finalise with their supervisors and submit their dissertations.... this has challenged both students and their supervisors. Even after presentations, we keep looking for the students. We keep posting updates like vivas are coming very soon, graduation is coming, encouraging them to finish... (Dean 1)

...You notice that all institutions were closed. At first, we thought that nothing much would be achieved. But quickly we adopted online engagements and supervision, we were prompted to create platforms and the progress was more than even before the lockdown. (Dean 2)

WhatsApp is a mobile messaging application specifically designed for mobile devices like phones and laptops to send on-spot messages to individuals and groups (Cetinkaya, 2017). Largely, WhatsApp messaging was deemed useful in following up and keeping both supervisors and students up-to-date. Similar to the current findings, Rambe and Mkono (2019) revealed that supervisees feel at ease in interacting with their supervisors via WhatsApp due to reduced formal situations. In Rambe and Mkono (2019), and Cetinkaya (2017), participants reported that students felt much relaxed to continuously ask questions in minimal formal WhatsApp settings compared to other means. The current study further agrees with the earlier

studies which revealed that WhatsApp messaging was effective in mediating teaching, learning and supervision of graduate students (Fadda et al., 2020; Oyewole et al., 2020; Sandoval-Cruz et al., 2020; Cetinkaya, 2017).

Zoom conferencing is another online supervision technological method that was consistently supported in the current study. “Zoom is a web-based collaborative video conferencing tool that provides quality audio, video, and screen sharing, which makes it great for virtual conferences, online lectures, online meetings, webinars, and more” (Serhan, 2020, p. 335). Participants in the current study reported that having zoom sessions with their students enhanced students’ research progress. Heads of department and faculty/school/college deans reported that zoom conferencing facilitated periodic presentations which assisted postgraduate students in obtaining joint feedback from all supervisors:

In this COVID-19, I have realised that online supervision is very important. I was able to clear backlogs and as I talk students who had collected data are ready to graduate. With online supervision, even if you are out of the country you can still assist your students via zoom and WhatsApp. Universities should promote online supervision and discourage the traditional ‘print and bring to the university’ system. (Supervisor participant 29)

... the shift from traditional means of research supervision is also respected here. At first, we thought we could not supervise online because of the nature of our work...after students are done with experiments, the rest of the business is done virtually. Actually, now it’s no longer easy to find me at campus during the day. It is just ‘send to me, let’s have a zoom session’ and people can choose to respond to students at any time. (Head of Department 2)

Many students come with other working responsibilities. We cannot tell them to resign their jobs but we need to support them and be available to them. Accessing a person is easy now. Let’s allow them to reach us through WhatsApp, phone and even emails. We can also keep arranging zoom sessions with them so that they are not troubled at their places of work. (Supervisor 6)

Similar to this finding, Mpungose (2021) urged that zoom sessions can help supervisors and students through interactions, reflections and connectedness to identify areas of improvement in learning and teaching. This could similarly apply in research supervision. Contrary to the findings of the current study, Reingold (2021) contends that zoom engagements hinder meaningful learning and research in education settings. Reingold reported that students expressed fears of not having the transformation education that they desired to have in a physical setting. Serhan (2020) further revealed that in a learning setting, students preferred physical classes than online engagements.

The findings of Reingold (2021) and Serhan (2020) could be contradicting the findings of the current study on contextual grounds. This is because Reingold’s study (2021) was conducted in Israel and focused on cultural and emotional transformation of candidates, which digital learning may not wholly offer. On the other hand, Serhan’s study (2020) study was carried out among secondary school students, who may not have had opportunity to explore digital engagements with their teachers.

Finally, in the current study, participants commended the use of online electronic mails in exchanging the work between students and supervisors. Supervisors, heads of department and deans/directors noted that with the current technological affordances, students and supervisors no longer need to travel or plan when and how to meet:

With the current development, all of us should run to virtual assistance. It is not fair to ask students to travel from various countries to come and meet you yet you can read the work, make comments and send back to the students through emails and they can always communicate on WhatsApp. (Supervisor 37)

Many students come with other working responsibilities. We cannot tell them to resign their jobs but we need to support them and be available to them. Accessing a person is easy now. Let's allow them to reach us through WhatsApp, phone and even emails. We can also keep arranging zoom sessions with them so that they are not troubled at their places of work. (Supervisor 6)

...The supervisors have agreed to use emails, WhatsApp and zoom sessions to assist students and this has been too helpful. (Head of Department 3)

...after students are done with experiments, the rest of the business is done virtually. Actually, now it's no longer easy to find me at compass during the day. It is just 'send to me, let's have a zoom session' and people can choose to respond to students at any time. (Head of Department 2)

Using emails to share the work between students and supervisors saves time and resources between the two parties. As reported above, using mails during supervisions is a motivation for both parties.

Collaborative research supervision

In the current study, collaborative research supervision referred to the willingness of supervisors to provide guidance to students depending on their expertise. Supervisors reported that if they put together their different talents and expertise, it would be helpful to students:

As supervisors, we need to work collectively to assist students in their research. This is because we are gifted with different talents in research. (Supervisor 9)

If, as supervisors we are able to work as a team collaboratively, we can make wonders. In most cases, this is not the case and few people think about it... I choose to collaborate with my former doctoral students and close friends and this has worked for me. In case I am unavailable, my students have where to seek guidance from and proceed. (Supervisor 28)

...In presentations, we give joint guidance to our students and this has also reduced the burden from supervisors because students are assisted right there... (Head of Department 1)

Cumming (2010 cited in Maor et al., 2016) urged that supervision of doctoral students in a collegial and collaborative way is important in that it leads to co-production of justifiable knowledge. The benefits of collaborative supervision include improved quality of the research project and cohesive exchange of expertise amongst the research teams (Trogisch et al., 2020).

This study further revealed that a collaborative approach to research supervision can be facilitated by regular presentations.

Similarly, Le (2012) found out that collaborative research supervision lays a fundamental basis for sharing and imparting of knowledge amongst students. This subsequently translates into students' timely completion of their studies.

Periodical workshops

Findings revealed periodic workshops for both supervisors and students as a supervision strategy. Supervisors, heads of department and school deans revealed that with the current trend, there is a need for continuous retooling. One dean noted that since more students are enrolling for postgraduate studies than before, there is need to change the way research supervision is conducted. He and other participants observed as follows:

... graduate training has shifted; there is a paradigm shift. More people [students] are now going for graduate training than it was in the past... currently one of the things is that we aim at giving training to supervisors so that they can learn modern methods of research supervision. (Dean 3)

...we do periodic workshops on supervision and even [on] teaching...we have had workshops on online research, mentoring... you see supervision should go beyond academic work. It goes hand in hand with mentoring. Our people are encouraged to do that, and we are really making change. (Head of Department 2)

Many supervisors are not researchers, hence offer minimal support. Supervisors should be given opportunities for retooling regularly so that they do not misguide students. (Supervisor 20)

The university should regularly support students and supervisors to attend conferences and seminars for good output. (Supervisor Participant 23)

Supervisors should also take a training role in research methods because at times students are weak in research methods. (Supervisor 2)

The above findings are in sync with the earlier findings in a similar context, which revealed that supervisors need retooling because many of them seem not to be conversant with supervisory practices (Atibuni et al., 2017). Atibuni et al., further urged that there is a need for continuous professional development, first for supervisors to enhance their supervision skills and then for students in form of sensitisation. Ekpoh (2016) also revealed that departmental workshops and seminars on core research areas improve students' progress in thesis and academic writing. These studies concur with the current study's findings that periodic workshops for both supervisors and students could enhance students' research progress.

Motivation

Motivation is the stimulation of students' willingness, creativity and strength to work towards a particular goal. In the current study, students' motivation was perceived to emanate from encouraging, guiding, counselling, mentoring, timely positive feedback and supervisors as

students' peers. On the other hand, supervisors/lecturers concurred that institutions should support them in both monetary and non-monetary terms to encourage them to support students.

Findings revealed that continuous motivation during research supervision is crosscutting to both supervisors and postgraduate students as presented below:

Supervisors are motivating agents; we should endeavour to do this because students come with a lot of problems. (Supervisor 29)

Both supervisees and supervisors should be motivated. (Supervisor 15)

We need to ensure that there is motivation both on the side of the students and supervisors. With that they will be able to move on to the next steps. (Supervisor 16)

Beyond supervision, I give mentoring because students also have so many issues. How I wish all supervisors do that. Some supervisors are also impatient with students' weaknesses and this worsens the situation. Creating rapport and coming to the level of the student is the best strategy for effectiveness in research supervision. In this case, students will pay attention to you and focus much so that they do not disappoint you, yet they are the ones benefiting. Motivating students is good. (Supervisor 35)

...monetary and non-monetary benefits need to be put in place for the research supervisors. (Supervisor Participant 36)

"We have some grants in this university which are competed for by staff. And for one to get these, he or she must be attached to a postgraduate student. This has changed the way supervisors used to do things. Then we have a strategy of students and supervisors co-publishing the research work. This was not common especially to master's degree students, but currently, supervisors are very keen and active because they want every output to count. (Head of Department 2)

...the supervisors lack motivation...they are not paid for supervision then they are asked to take on a number of students. Therefore, it is rare to expect such lecturers to pay attention to the details of the students' work. (Dean 2)

The motivation of both postgraduate students and their supervisors is important in keeping them moving during the research process. According to Ribau (2020), 46% of the difficulties supervisors get with their students are related to their motivation, and yet as Tahir et al. (2012) urged, for effective research supervision, supervisors ought to give continuous motivation to students.

These findings concur with Ribau (2020) who reported that 84.8% of the supervisors in his study noted that the extrinsic motivation given to students by their supervisors was very important. Furthermore, Singh (2020) reported that motivation and inspiration in the research project are impactful. Uniquely, the findings of the current study placed the role of motivating students on supervisors and supervisors on the university.

Coordination

In the current study, coordination emerged as another strategy geared towards effective research supervision in the completion of postgraduate studies. Coordination as a theme emerged from the sampled deans and heads of the department. Findings showed that in order to keep an eye on graduate students' and supervisors' activities, the sampled universities established the office of the coordinator at the departmental and school level.

According to the findings, coordinators were doing a tremendous job in as far as research supervision was concerned. A dean reported that the coordinators at their different levels follow up on every allocated supervisor and student. Consequently, challenges during research supervision were identified and dealt with right away. The coordinators used WhatsApp and emails to post updates that would challenge the students and supervisors to work hard. One Dean stated as follows:

But currently, the completion rate in this faculty is extremely high...we have adopted the coordination approach. We have coordinators whose responsibility is following up on individual students and supervisors. They take interest in knowing how students are progressing, where they are. (Dean 1)

Heads of Department also reported that the coordinators were assisting in ensuring smooth research supervision as follows:

Yes, aaah! When it comes to graduate training in this department, we have an office which is in charge. At first, everything was being done here but currently the college has established a coordination office. The department of foundations was tasked to do that. But I also oversee the overall processes because still they have to pass here. (Head of Department 1)

Because in the past there was a tendency of focusing on undergraduates who were many in numbers, we agreed to have a coordination officer for graduate students. This officer has a duty to conduct thorough follow-up on all students and supervisors. This is regularly done through online means. He is also the one in charge of posting updates on postgraduate activities in the department. (Head of Department 2)

The above quotations confirm that research coordinators were playing a significant role in enhancing the effectiveness of research supervision. Speicher et al. (n.d.) argued that coordinators play a pivotal role between the students, the university and supervisors. Similarly, Hammond and Tennant (2010) and Zhao (2010) noted that coordinators at graduate level assist both the students and supervisors in identifying areas that need development. This makes the entire institution strategise and offer training to both students and supervisors about knowledge of what should be focused on. Consistent with the findings of the current and other studies, it is urged that coordinators actively integrate the students into research activeness (Brew et al., 2017) by providing regular updates on students' and supervisors' milestones.

Tracking progress

According to Cardilini et al. (2021), not only does the progress of graduate students justify the completion of their studies, but it also contributes to their wellbeing. Participants in the current study reported that tracking progress and keeping the track record of students is a profitable habit in graduate studies. Periodic progress reports and regular presentations of research work ensure students' good progress. Furthermore, the participants reported that regular meetings and presentations kept students on track and made research supervision more effective:

...presenting to the department...that one is being implemented. We are ensuring progress recommendations. So, after every six months they must give us returns. This one has given us a boost. (Director 1)

Yeah, supervision is ... individual work. It is supervisor to student. It was difficult to track if the students were progressing. Previously we tracked the progress using progress reports and documents signed between students and supervisors and that gave us a picture of how supervision was progressing. (Dean1)

Students and supervisors need to be regular as per agreed timelines. With technology, both should make it regular. Sometimes supervisors are given so many university engagements which negatively affect the research supervision. If the university can look into that we can to some extent improve on the completion rate. (Supervisor Participant 32)

Tracking students' progress in research was credited for ensuring effective research supervision. However, supervisors did not express any view on how tracking progress impacted their supervision workload. Instead, they reported that regular meetings with the students using blended online and face-to-face meetings satisfactorily enhanced progress and effective research supervision:

Regular meetings and presentations are enough to facilitate the progress of a student and effective research supervision. (Supervisor Participant 10)

For example, personally I have supervised 1 PhD to completion within these difficult times of COVID using email communication and the other six students for master's degree are finalising their work. If I can compare, do you know that their colleagues who were not assisted online for maybe some reasons have not even presented their proposals? (Head of Department 3)

Supervisors' views of ensuring progress in research supervision using blended online and face-to-face meetings were inconsistent with previous findings in this study, which placed online meetings at the helm of quick progress of graduate students. This argument was justified in the COVID-19 pandemic period according to various empirical studies (Fendi et al., 2021; Cardilini et al., 2021; Suripah et al., 2021; Fadda et al., 2020; Ghani, 2020; Mpungose & Khoza, 2020; Oyewole et al., 2020; Rambe & Mkono, 2019) that reported that online research monitoring and supervision led to quick progress of postgraduate students during the COVID-19 pandemic.

Conclusion and Recommendations

As evident in the current study, effective research supervision is a supportive aspect of students' completion of postgraduate studies. Six strategies for effective research supervision in the completion of postgraduate studies emerged, namely: virtual/online, collaborative supervision, workshops/retooling, motivation, coordination and tracking progress. Although these strategies were used during the COVID-19 lockdown; they are relevant post-COVID-19 strategies since they improved graduate supervision in the sampled universities. That is justification that universities should embrace modern technologically appropriate tools of research supervision to support students, and consequently enhance timely students' completion of postgraduate studies. With the ever-increasing graduate enrollments, universities need to shift from the traditional face-to-face supervision modes to be able to embrace new ways of supervision that harness affordances from various technologies that enhance effective interaction. Similar to the flipped classroom, the current study shows that flipped supervision in which supervision approaches, supervision space, and student-supervisor roles are varied to include encouraging, guiding, counselling, mentoring, timely positive feedback, supervisors as students' peers, as well as peer-to-peer supervision, are crucial in postgraduate research supervision.

Universities could consider formal establishment of team supervision, research coordination offices, progress tracks and periodic workshops for (re)tooling students and supervisors during research supervision, where these are absent.

Universities could consider developing courses on the pedagogy of postgraduate supervision in which research coordinators, supervisors and students could receive training in the identified and other strategies to improve postgraduate completion rates.

Online research supervision emerged casually most especially during the COVID-19 pandemic period. Abrupt strategies and the need for continuity prompted the selected universities to encourage research supervisors to continue engaging students virtually. Previously, supervisors could engage students online based on student-supervisor arrangements. With the evidence of improvements in research supervision and students' completion of postgraduate studies attached to online research supervision, the study recommends that universities design and incorporate online research supervision policies and guidelines in graduate training policies and ensure that they are operationalised. Additionally, universities should provide a robust virtual infrastructure to enable online supervision. This would assist supervisors and students to understand what is expected of them and formally and appropriately use the virtual opportunities for better results.

Contribution of the Study to the Body of Knowledge and Practice

Empirical contributions

The study exposed empirical knowledge towards effective research supervision in the completion of postgraduate studies. A contribution has been made to adopting online research

supervision with the current technological trends and in pandemics such as COVID-19. The study revealed that the commonly referred to informal online means of communication such as WhatsApp, if adopted, can make wonders in as far as research supervision is concerned. In this study it was further discovered that even all other strategies for effective research supervision in the completion of postgraduate studies can be achieved through the use of digital technologies. The empirical contributions of the current study are further explained in Figure 3

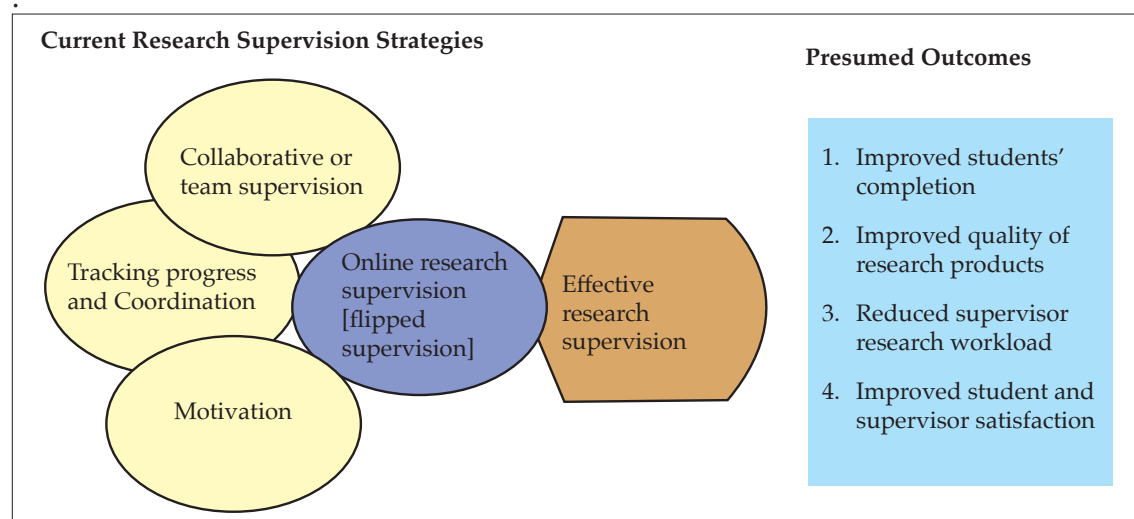


Fig. 3: The Conceptual Model of Strategies for Effective Research Supervision in the Completion of Postgraduate Studies

Source: Authors, 2021

Conceptual and theoretical contributions of the study

The current study was underpinned by Tinto's (1993) interactionist theory. The theory contends that for students' commitment to the university setting and towards the graduation goal, they should be both academically and socially integrated with the university system (Tinto, 1993). Tinto further states that social and academic integration may occur in both formal and informal settings. "Formal academic integration includes researching topics in the library, attending labs and classes and engagement in various activities related to academic success" (Chrysikos et al., 2017, p. 99). Social integration includes participation in university social activities, joining clubs, interacting with peers and involvement in university extra-curricular activities (Berger & Braxton, 1998). This study confirmed that social and academic interactions supported students' research journeys in the selected universities. There were various forms of interaction including collaboration and workshops enhanced by digital technologies.

However, Tinto's aspects of social and academic integration/interaction were based on the physical presence of students within the university. The theory did not cater for future trends

like the COVID-19 pandemic. The current study has contributed to the theory by advancing the means of formal and informal integration to enhance the commitment of students towards achieving the goal even in difficult times.

Furthermore, this study has conceptually contributed that multiple engagements through online platforms like WhatsApp, Zoom and Emails are vital in instilling commitment amongst the students. Flipped supervision is recommended since it affords student-supervisors interaction anytime and anywhere.

Supervisors noted that after classwork, majority of the students disappear and this continuously affects their progress. It is difficult to maintain students' institutional commitment when off-campus. Hence, the study revealed that through online means, students can still be integrated within the social and academic systems of the university, and this could subsequently enhance their commitment towards their graduation goal.

Therefore, the study proposes new concepts to be added to Tinto's theory of interactions as shown in Figure 4.

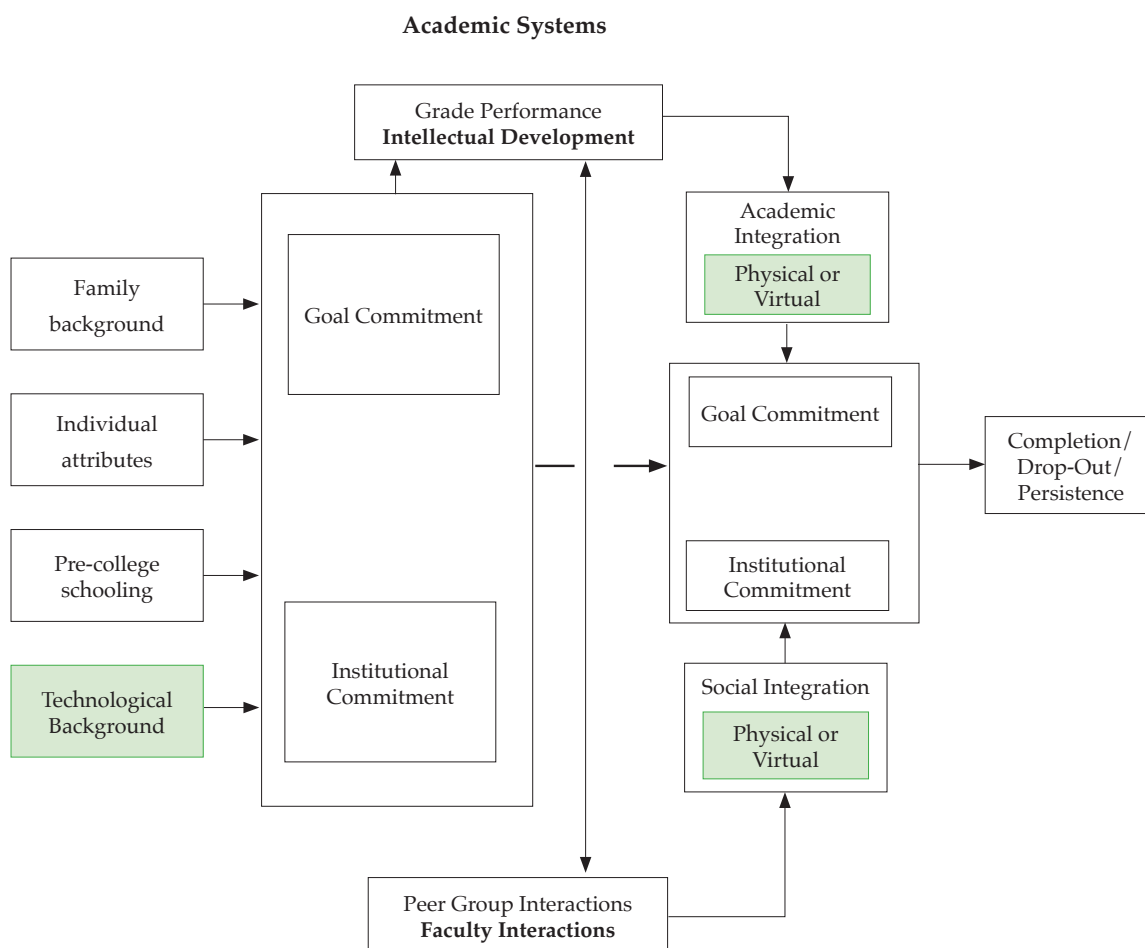


Figure 4: Tinto's theoretical model and modified by Authors with concepts from the current study, 2021

Areas for Further Research

The study was carried out in only three universities, one private and two public ones. Three universities could not speak out for all over 40 public and private universities in Uganda. Therefore, a similar study should be conducted with a representative sample for both public and private universities in the country. Furthermore, a comparative study could be undertaken with universities beyond Uganda.

Findings revealed that online research supervision was preferred for postgraduate training. However, the study did not delve into the pedagogy and challenges of online supervision. A study could be conducted on the effectiveness of the pedagogy and challenges to online research supervision.

Furthermore, the infrastructure for virtual research supervision was not considered. Given that virtual research supervision turned out to be key in the current study, a separate study could consider the infrastructure and efficacy of online in research supervision.

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