

Scaffolding Graduate Research Supervision in a Higher Education Caribbean Context

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Abstract

Many graduate students experience lags in completing their final research projects/theses for reasons that include insufficient support or scaffolding in graduate research supervision. Thus, the use of scaffolding in the graduate research supervisor-supervisee relationship is critical for guiding the research project or thesis to a successful and timely completion. Such scaffolding or guided support has a Vygotskian orientation in which the expert (more knowledgeable on topic) like a research supervisor provides guided support to a novice (less knowledgeable on topic) such as a research supervisee. An opportunity for providing this guided support is found in graduate research seminars, which are mandatory for supervisees completing their research projects/theses at a Caribbean University's School of Education. Research supervisors and supervisees can provide face-to-face or online feedback on students' graduate research seminar presentations for improving their research proposals before proceeding with conducting their research in the field. Although much research has been done on scaffolding in higher education, the scholarly Caribbean literature is limited on the use of scaffolding in graduate research supervision. This paper describes the guided support or scaffolding provided to both research supervisors and their supervisees in graduate research seminars in a Caribbean context. The study is guided by the following overarching question: "How has scaffolding been used in graduate research supervision to provide guidance and support in Master's level research seminars for both supervisors and supervisees in a Caribbean context?" and two sub-questions: (1) "What does the use of scaffolding in graduate research

supervision reveal to research supervisors and their supervisees in Master’s level research seminars in a Caribbean context?” and (2) “What are graduate supervisors’ reactions to the use of scaffolding in providing written feedback for Master’s level research seminars in a Caribbean context?”

The researchers used a convergent parallel mixed-methods approach in quantitising the qualitative feedback given in emails to graduate students’ research supervisors on their supervisees’ research proposal presentations and a qualitative thematic analysis for supervisors’ reactions to this feedback in integrating these findings. The results of this study showed that the guided support or scaffolding provided on graduate students’ research proposals presented at their research seminars was helpful for orienting their research theses/projects to a successful completion. The implications of the study results for practitioners, researchers, and policy makers as key stakeholders in graduate research supervision are discussed.

Keywords: scaffolding, graduate research supervision, convergent parallel mixed methods

Background

Access to graduate degree programmes is *widening* as institutions worldwide embrace the digital transformation characterising higher education’s trajectory (Pelletier et al. 2021). By extension, this anticipated growth in diverse graduate student populations on campuses (seated and/or virtual) warrants attention to adequate support systems towards achieving positive and successful educational outcomes for these prized stakeholders (Akareem and Hossain 2016; The University of the West Indies 2019). The culmination of the graduate degree programme is usually the undertaking of a thesis, dissertation, or research project with support and guidance from an assigned lead supervisor of an advisory committee for scaffolding the supervisee towards a successful completion of this undertaking (Remenyi and Money 2012). This needed scaffolding provided to graduate supervisees, who are considered novice researchers, is in keeping with expected mentoring roles of research supervisors during graduate research supervision (Rackham Graduate School 2020; Stoeger and Ziegler 2021; The University of the West Indies 2019). The University of the West Indies (The UWI) is a premier regional five-campus

university ranked among the top 1.5% in the world, and its “. . . 2017–2022 strategic plan, themed the *Triple A Strategy*, focuses on widening **Access** to quality tertiary education, **Alignment** of the University with academic-industry partnerships relevant to the region’s needs and improved **Agility** through global connections and initiatives” (THE World University Rankings 2022, The UWI section). In its 2019–2020 annual report, the southern-most campus of The UWI (in Trinidad and Tobago) noted increases in higher degree and advanced certificate/diploma programme enrolments from 1,851 in 2002 to 4,704 in 2020 or a 154% increase (The UWI, St. Augustine Campus 2020). This evidence shows the continued and resilient efforts of The UWI’s management, faculty, and staff to realise the goal of widening access to quality tertiary education that also requires “. . . improving the quality, quantity, and impact of research, innovation, and publication” (The UWI, St. Augustine Campus 2020, 22). Increasingly, research and innovation are typifying higher education’s shift to Education 4.0. as a result of Industrial Revolution 4.0. and the COVID-19 pandemic, prompting a digital transformation across campuses worldwide (UNESCO Educational Sector 2020; World Economic Forum 2020).

As a research supervisor, the first author previously piloted a “Research e-Clinics” innovation in 2015 at The UWI’s, St. Augustine campus, which won a merit award as a competition finalist and published as the second chapter in the anthology of case histories for the *Innovation in Teaching of Research Methodology Excellence Awards* competition in the UK (Remenyi 2016). Key findings from this pilot test with 19 students in a graduate health promotion programme revealed some of their expressed challenges that included stating the research topic, finding and summarising key issues for the study’s literature review, and structuring the methods section (Remenyi 2016). Subsequently, these “Research e-Clinics” were offered at the study site prior to the month of May in providing on-demand research support to Master’s students for meeting their end-of-May research deadline (Ferdinand-James 2016). Hosting these subsequent e-clinics provided insight into graduate students’ research strengths and weaknesses that enabled the host to contribute more meaningful feedback in face-to-face graduate research seminars. Due to time constraints in these seminars, this written feedback was sent via email afterwards to graduate students’ research supervisors with resource links for improving their research proposals. Such computer mediated communication via email mirrors guidance and support provided in e-mentoring, more commonly used

in the digital transformation sweeping higher education institutions, fuelled by Industry 4.0 and its resulting shift to Education 4.0. (Pelletier et al. 2021; Stoeger and Ziegler 2021; UNESCO Educational Sector 2020; World Economic Forum 2020). However, no further probing was done into how the first author's feedback contributed to improving graduate students' research proposals or was viewed by their research supervisors, which the current study addresses. Research on graduate supervision in the Global South developing context is growing – previously overshadowed in the literature by a dominant developed-world context, which was seen as almost a universal standard, instead of there being probing into the diversity in both contexts (Blair, Watson, and Raturi 2020). The purpose of this study is to describe the guided support or scaffolding provided to both research supervisors and their supervisees in graduate research seminars in a Caribbean higher education context. The study results are significant for informing improvements in the quality of graduate research supervision practice in the local context as well as helping to inform policy on graduate research supervision. These results also contribute to narrowing the gap in the scholarly literature on a Caribbean perspective on scaffolding in graduate research supervision.

Literature Review and Theoretical Framework

Graduate research supervision has gained the attention of researchers with the widening of access to graduate programmes at universities worldwide (Pelletier et al. 2021). Researchers have proffered that the final research project, thesis, or dissertation is the most challenging for graduate students during their graduate education (Marshall, Klocko, and Davidson 2017; Wenwen, Watson Todd and Darasawang 2012). While studies show many students successfully complete their graduate course work on time and with A's and B's, the same was not always the case for their final research project, thesis, or dissertation (Azure 2016; Remenyi and Money 2012). Many experience lengthy lags towards this completion and a notable 50 per cent drop out and never complete their PhD dissertation in higher education in the USA, for reasons that include inadequate preparation, resources, time management, supervisory support as well as personal challenges (Azure 2016; Burkard et al. 2014). Previous research in a Caribbean context revealed that annually, 80 per cent of Master's students ask for extensions on their end-of-May submission deadline, which gave rise to the successful piloting of research e-clinics for reducing lags in meeting this research deadline. Results from the latter pilot

study showed that students were able to complete research chapters that were causing them some difficulty; move forward in their research with confidence knowing that they were doing what was expected; and corrected misconceptions about conducting their research (Remenyi 2016). These study results endorse the need for academic guidance and support for graduate students towards positive and successful outcomes of their final research project, thesis, or dissertation. In addition, researchers unanimously agree that the work of the graduate research supervisor(s) and/or advisory committee in providing research guidance/support is paramount to their supervisees' successful completion of the final research theses, dissertations, or research projects (Azure 2016; Burkard et al. 2014; Remenyi and Money 2012). Nevertheless, empirical studies revealed that the following constraints frequently impact on the quality of graduate supervision: mismatch in supervisee-supervisor interests and personalities; inadequate supervisory training, especially in providing affective support; unclear and inconsistent feedback; work overload limiting supervisory time; and unclear guidelines for governing the graduate supervision process (Burkard et al. 2014; Chireshe 2012; Gohar and Qouta 2021; Roach, Christensen, and Rieger 2019). These constraints can further manifest into a "sink or swim" experience for graduate research students as purported by Kennedy (2016). The current study helps to address such constraints by scaffolding graduate research supervision in providing written feedback on students' graduate research seminars for improving their research proposals.

Researchers in the Global South (Blair, Watson, and Raturi 2020) found similar trends in lags toward completion of graduate students' research projects/theses, characterising it in one instance as a womb-to-tomb journey or a lifelong experience for the research supervisee. They intentionally situated their narrative of graduate supervision underpinnings in local practice to include the beliefs, culture, content, and other contextual factors bounding the supervisee-supervisor relationship. Understandably, graduate students in the Global South possess a range of diversity to include their experiences, academic backgrounds, and cultural contexts but are underrepresented in the scholarly literature on graduate supervision (Blair, Watson, and Raturi 2020; Marshall, Klocko, and Davidson 2017). In bringing balance to this topic, the current study responds to this call in the literature for a Caribbean perspective on graduate supervision underpinnings.

Contemporary theories in the literature informing scaffolding in the research supervisor-supervisee relationship show "Lavian" and "Vygotskian" orientations. Jean Lave's situated learning theory centres on learning in a community of practice

where participants engage in a social process through regular interactions on mutual concerns and passions, and learn from the collective wisdom, knowledge, and experiences of the group (Illeris and Ryan 2020). For example, in the local study context, graduate students must successfully complete their graduate seminar presentations and gain approval from the University's Ethics committee in order to conduct their research (The University of the West Indies 2019). As such, it is critical that they receive constructive collective feedback during graduate research seminars from both faculty and their fellow students for improving the quality of their research proposals before moving on with conducting the research. The collective feedback given in these research seminars is done against the common understanding of the marking guidelines for satisfying criteria outlined in the research project rubric given to graduate students and their supervisors (The UWI 2018). In this research community exchange, supervisees and supervisors respond to questions and comments and vice versa in sharing their comments and concerns on research proposals presented. Therefore, the Situated Learning Theory tenet of guidance and support provided in a community of practice is firmly rooted in and informs the scaffolding done in research seminars as part of graduate supervision in the current study. In contrast to the "Lavian"-situated learning theory's community of practice, Lev Vygotsky's sociocultural theory centres on the social interaction occurring in the teacher-learner space with emphasis on their dialoguing and communication for co-constructing knowledge (Tian, Watson Todd, and Darasawang 2012). In their case study on using scaffolding as a learning opportunity to help PhD students think critically about their research questions for emerging problems, Tian, Watson Todd, and Darasawang (2012) found two frequently used forms of scaffolding: conceptualising and cluing for focusing student's research. The concept of scaffolding arose from Vygotsky's sociocultural theory; he "... views learning as a profoundly social process ..." (Vygotsky 1978, 131). Scaffolding is associated with Vygotsky's Zone of Proximal Development (ZPD) and defined as the "distance between the actual developmental level as determined by independent problem-solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers" (Eun 2019, 19-20). Similarly, the social interaction between research supervisor and supervisee in jointly solving the research problem exemplifies scaffolding: the supervisor as an expert, or more knowledgeable other, provides guided support or scaffolding to the novice researcher or less knowledgeable

other (Nassaji and Swain 2000). This knowledge collaboration is aimed at shaping the novice into a critical thinker, problem solver, and independent thinker, which are attributes the distinctive UWI graduate should possess (The UWI, St. Augustine Campus 2020). As the research supervisee grows in critical thinking and problem solving, the actual development level of the supervisee increases within the ZPD, gradually resulting in less guidance and collaboration for such problem-solving from the research supervisor.

Methodology

The purpose of this research study is to describe the guided support or scaffolding provided to both research supervisors and their supervisees in graduate research seminars in a Caribbean context. This study employed a Convergent Parallel Mixed Methods design (*see* figure 1) in answering the following: Overarching question: “How has scaffolding been used in graduate research supervision to provide guidance and support in Master’s level research seminars for both supervisors and supervisees in a Caribbean context?” and the sub-questions: (1) “What does the use of scaffolding in graduate research supervision reveal to research supervisors and their supervisees in Master’s level research seminars in a Caribbean context?”; (2) “What are graduate supervisors’ reactions to the use of scaffolding in providing written feedback for Master’s level research seminars in a Caribbean context?” Both quantitative and quality data were collected, analyzed, and integrated for gaining a deeper understanding of the central phenomenon – scaffolding in graduate supervision. This integration accommodated for any weaknesses in using only qualitative or quantitative data (DeCuir-Gunby and Schutz 2017). A pragmatic worldview guided the study design as it includes both problem- and practice-centred tenets among other foci (Creswell and Creswell 2017) that resonate with the graduate research supervision of novice supervisees. The first author attended a total of twenty-seven graduate research seminars over the period 2017–2020 with follow-up email feedback on all twenty-seven seminars (the number was too small to sample), which were collected and analyzed using content analysis. Stokes’ (2003) advice on using content analysis was heeded; he purported, “Whenever you need quantitative values relating to the occurrence of particular phenomena in texts, content analysis is the best method to adopt” (23).

A chronological review of the data was done to identify key phrases relating to the three chapters of the research proposal – Introduction, Literature Review, and

Methodology – in keeping with the grading rubric used for graduate students’ final research projects (The UWI 2018). These selections were coded in an iterative process to avoid overlapping, and the resulting in vivo codes were verified by the second author for accuracy, dependability, and credibility in establishing trustworthiness (Patton 2014). Emerging categories, themes, and patterns from the coded data were quantitised by frequency counts and presented in summary tables. Quantitising is commonly used in mixed methods designs and referred to as the conversion or translation of qualitative data into numerical codes for use in statistical analysis (Green 2007; Teddlie and Tashakkori 2006). The supervisors’ reactions in email responses to email feedback on their supervisees’ research proposals were simultaneously captured but analyzed separately in keeping with the Convergent Parallel Mixed Methods design. This raw email data was reviewed and key phrases relating to supervisors’ reactions to this feedback were identified and coded using in vivo codes (Arshad, Ahlan, Ibrahim, and Norhafiza 2013). The second author further verified this coding for validity, trustworthiness, and anonymity. The resulting categories, themes, and patterns from the coded anonymised data were captured along with related quotes and integrated with the quantitised “scaffolding” data in triangulation for confirming and disconfirming the study findings in relation to its research questions. The latter enhances the validity and reliability of the data (Golafshani 2003). Combining both the quantitised and qualitative findings helped to give a deeper interpretation and understanding of the study’s phenomenon in keeping with the Convergent Parallel Mixed Methods study design as illustrated in figure 1.

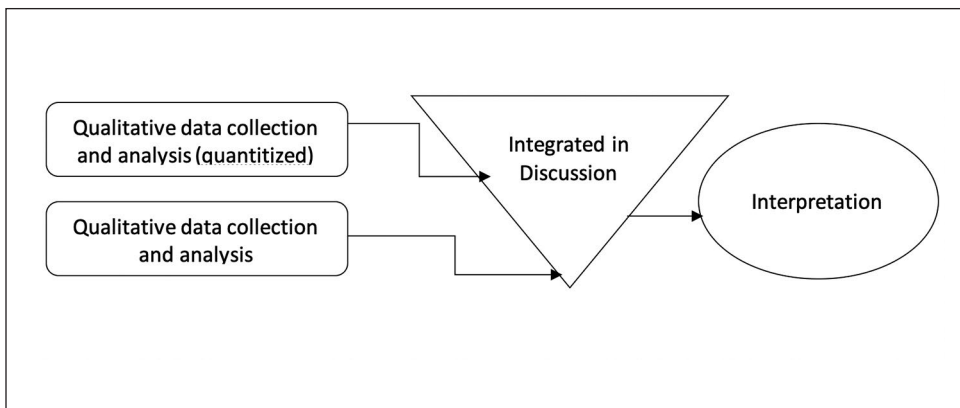


Figure 1. Convergent Parallel Mixed Methods Design

Results

The study results are presented by research sub-questions for the overarching study question: “How has scaffolding been used in graduate research supervision to provide guidance and support in Master’s level research seminars for both supervisors and supervisees in a Caribbean context?” Summary tables are represented in relation to the first sub-question: (1) “What does the use of scaffolding in graduate research supervision reveal to research supervisors and their supervisees in Master’s level research seminars in a Caribbean context?” These tables represent frequency counts for the emerging themes from the content analysis of the “scaffolding” data. Short summaries are given for each table, highlighting its key findings. Next, the qualitative thematic data from the supervisors’ reactions to the first author’s “scaffolding” feedback is presented in a narrative discussion in answering the second sub-question: (2) “What are graduate supervisors’ reactions to the use of scaffolding in providing written feedback for Master’s level research seminars in a Caribbean context?”

Both the quantitative and qualitative data are then integrated for gaining a deeper interpretation of the study findings (illustrated in figure 1) in the Discussion, Conclusion, and Implications sections.

Research Sub-Question (1): *What does the use of scaffolding in graduate research supervision reveal to research supervisors and their supervisees in Master’s level research seminars in a Caribbean context?*

Table 1. Themes and Frequencies for Feedback Over the Period 2017–2020 for “Titles” in Master’s Students’ Research Seminar Presentations (N=27)

Emerging Themes in Feedback on Research Proposal Presentations	Frequency Counts
Modify title slightly for conciseness and clarity (sample link)	11
Reword title to avoid labelling/identity of study setting	9
Tweak title to closely align with research questions (sample link)	7
Very clear title	5
Mismatch between title and presentation content	5
Align title more with terms for qualitative paradigm	4

Note that the majority of research proposal titles in graduate students’ presentations drew attention to revisions for clarity, avoiding labelling and identity, as well as alignment with research questions (table 1). This needed tweaking is not

Table 2. Themes and Frequencies for Feedback Over the Period 2017-2020 in the “Background” for Master’s Students’ Research Seminar Presentations (N=27)

Emerging Themes in Feedback on Research Proposal Presentations	Frequency Counts
More relevant local literature summary needed (sample link)	22
More relevant international literature summary needed (sample link)	20
More relevant regional literature summary needed (sample link)	19
More visibility needed of researcher’s own observations (sample link)	13
Strengthen SOP by stating literature gap and its emergence from Background	9
Show possible gap of stakeholders’ views in Literature (sample link)	7
Really good context to include researcher’s observations	7
More elaboration needed on teacher involvement in curriculum	5
More elaboration needed on challenges/barriers found to enhance study understanding	5
Good international and regional insight on topic	5
Match/revise Background with suggested title for qualitative study (sample link)	4
Avoid no research has been done, allowing for undiscovered research	1

uncommon as students are considered novice researchers at the Master’s level, who depend on the guidance and support of their assigned research supervisors.

Overall, the vast majority of feedback to research supervisors indicated a need for more local, regional, and international research to support the literature review in graduate students’ research proposal presentations (table 2). This need usually impacts the study’s problem statement, which most times requires strengthening by stating the gap in the literature and how it emerged from the Background as shown in table 2 for at least nine research proposals.

Table 3. Themes and Frequencies for Feedback Over the Period 2017–2020 on the “Statement of the Problem” (SOP) in Master’s Students’ Research Seminar Presentations (N=27)

Emerging Themes in Feedback on Research Proposal Presentations	Frequency Counts
Revise SOP for emergence from Background to include researcher’s observations (sample link)	27
Clear and concise Background with researcher’s observations of problem	2
Include related literature summary to support topic (sample link)	1
Highlight nominally heard voices in summary literature review	1
Feedback includes what is working, not working, and suggestions for improvements	1

Table 4. Themes and Frequencies for Feedback Over the Period 2017–2020 for “Purpose Statement” in Master’s Students’ Research Seminar Presentations (N=27)

Emerging Themes in Feedback on Research Proposal Presentations	Frequency Counts
Align Purpose Statement with revised SOP (sample link)	22
Use appropriate qualitative/quantitative verb for study type	13
Separate Purpose from study Significance and/or Expected Outcome (sample link)	7
Include clear Purpose Statement based on SOP	1
Use appropriate mixed methods format for Purpose Statement	1
Mixed Methods not recommended at this time	1

Notably, all the research proposals presented indicated needed revisions to show how the Statement of the Problem emerged from the study’s Background to include the researchers’ observations on the same problem (table 3). This majority oversight suggests that the guidance from the research supervisor may need more clarification for the Statement of the Problem.

Understandably, the vast majority of proposals presented (22 out of 27) showed feedback on revisions for aligning the Purpose Statement (PS) with the revised Statement of the Problem (SOP) (table 4). In the previous table 3, feedback on all the SOP’s indicated a need for revision from which the Purpose Statement emerges, suggesting a need for more guidance in graduate supervision for these areas.

Inevitably, the majority of proposals presented (20 out of 27) indicated a need for more alignment between the Statement of the Problem, Purpose Statement,

Table 5. Themes and Frequencies for Feedback Over the Period 2017–2020 on “Research Questions” in Master’s Students’ Research Seminar Presentations (N=27)

Emerging Themes in Feedback on Research Proposal Presentations	Frequency Counts
See best practice example for alignment in SOP, PS, and RQ’s (sample link)	20
Revise overarching and sub-questions for more alignment (sample link)	17
Clearly rephrase questions to better reflect qualitative paradigm (sample link)	6
Clearly stated	4
State questions to be operationalised in study	3
Revise overarching question to avoid “Yes” or “No” response (sample link)	2
Conform to mixed methods format for research questions	1

Table 6. Themes and Frequencies for Feedback Over the Period 2017-2020 for the “Literature Review” in Master’s Students’ Research Seminar Presentations (N=27)

Emerging Themes in Feedback on Research Proposal Presentations	Frequency Counts
Identify gap(s) in literature (sample link)	17
Show how Lit Review informs Methodology and/or Theoretical Framework for study	12
Include more literature on related factors, especially in developing country context (sample link)	6
Remember to present balanced view in literature	3
Good theoretical and empirical connections presented	3
Include socio-economic issues negatively impacting learning	1
Learning style literature inconclusive, so focus on ICT’s in Language Arts	1
Include assistive technology in inclusive classroom for currency with literature	1
Highlight studies that use chosen study instrument	1
More critical analyses needed for studies reviewed in related literature	1
Use Fullan’s from the two models in keeping with seminar discussions	1

and Research Questions (table 5). Previously, most of these sections indicated a need for individual revision, hence the need for alignment after revisions.

The majority of students’ research proposals (17 and 12 respectively) exhibited oversights in identifying gap(s) in the Literature Review and how it informs the study Methodology and/or Theoretical Framework (table 6). This result strongly suggests that more scaffolding is needed on the latter for the graduate students.

The majority (22 out of 27) of proposals presented overlooked the need for including insider researcher bias that is not uncommon with novice researchers like Master’s students (table 7). Of note, mixed methods designs showed gaps in knowledge for graduate students, which is not unusual as the MM is the new third paradigm in research. This result suggest that supervisors need to carefully consider students’ readiness for using this paradigm.

Research Sub-Question (2): *What are graduate supervisors’ reactions to the use of scaffolding in providing written feedback for Master’s level research seminars in a Caribbean context?*

In sending feedback to research supervisors, the first author acknowledged the work already done as evident by the student’s research proposal presentation and hoped that feedback sent would be helpful for orienting the graduate

Table 7. Themes and Frequencies for Feedback Over the Period 2017-2020 for the “Methodology” in Master’s Students’ Research Seminar Presentations (N=27)

Emerging Themes in Feedback on Research Proposal Presentations	Frequency Counts
Insider researcher bias needed for adding rigor	22
Triangulation needed for adding rigor	13
Relatability needed for adding rigor	22
Include type of case study used for enhancing this section	11
Good choice of thematic/comparative analysis for type of qualitative analysis used	8
Consider changing from full qualitative to mixed methods (MM) design to accommodate qualitative and quantitative data collected	6
Consider thematic analysis for type of qualitative analysis used	4
Modify sampling to stratified purposive to enhance methodology	3
Good use of different sources to triangulate data	4
Provide framework for analysing different data (interviews, observation, and journals) collected	3
Provide clear rationale for using action research	3
Provide clear rationale for using sampling procedure	2
More in-depth understanding of MM needed for application here	2
Suitable case study design would be more manageable	2
Modify sampling to census instead of convenient to enhance methodology	1
More critical analyses needed for studies reviewed in related literature	1
Use Fullan’s from the two models in keeping with seminar discussions	1
Follow up interviews with students to account for any intervening variables	1
Tables and graphs should be in APA style	1
Strengthen validity by using expert panel to review modified instrument	1
Sample different to population	1
Consider increasing purposive sample for giving broader perspective	1
Consider using observations for answering first question	1
Reduce number of interviewees to maximise time remaining	1
Consider foregoing focus groups and do only interviews to save time transcribing data	1
Quantitative data analysis was overlooked	1

student’s research to a successful completion. In responding, supervisors’ overall reaction to this feedback was one of thanks and appreciation. Several indicated that they would pass on the feedback to their students, while others stated that it

was helpful, useful, and valuable. One supervisor gave very detailed comments, probably in an effort to show appreciation as shown in this abridged email quote:

Thanks much for your comments. They are both fair and useful, even a bit generous. I will address these issues . . . These comments are particularly iseful [useful] to me since I have been involved in this study for a very long time and could well be getting soft on some issues.

Discussion, Conclusion, and Implications

The purpose of this study was to describe the guided support or scaffolding provided to both research supervisors and their supervisees in graduate research seminars in a Caribbean context. Email feedback on graduate students' research proposal presentations, when analyzed, revealed grey areas needing strengthening and, by extension, more scaffolding from research supervisors in answering the first sub-question. The study findings show that the Background and Statement of the Problem sections of graduate students' research proposals needed the greatest attention for more alignment and increased international, regional, and local literature for better contextualising the research problem. Such attention would help the supervisee to better justify the need for the study and identify the gap in the literature on the study topic as well as better inform the study's title in keeping with the research proposal guidelines (The UWI 2018). This study finding also resonates with the current literature as previous research in the local study context for piloting a "Research e-Clinics" innovation revealed that Master's students had challenges stating, finding, and summarising literature on their research topics but were able to overcome these with the support of these e-Clinics (Remenyi 2016). Other areas needing high attention in students' research proposals for satisfying the research rubric requirements (The UWI 2018) included the Purpose Statement, Research Questions, and Literature Review. These sections needed more alignment in addition to showing how the Literature Review informs the study's Theoretical Framework and/or Methodology. These "gaps" in graduate students' research proposals are not unique to the local study context but can be closed with the guidance and support provided in the research seminar feedback. Previous literature shows research supervisors using conceptualising and cluing as key forms of scaffolding to help PhD students to better conceptualise research questions for their emerging study problem (Wenwen, Watson Todd

and Darasawang 2012). Further, researchers proffered that the culmination of a student's graduate programme in a final research thesis, project, or dissertation can be the most challenging aspect of their graduate education, confirming the need for the guidance and support as done in the current study in responding to this challenge (Marshall, Klocko, and Davidson 2017; Rackham Graduate School 2020; Remenyi and Money 2012; Stoeger and Ziegler 2021; The University of the West Indies 2019; Wenwen, Watson Todd, and Darasawang 2012). The qualitative data analysis of the research supervisors' reactions to the use of scaffolding in providing written feedback afterwards for Master's level research seminars in a Caribbean context help to complement the quantitative study results. Overall, research supervisors appreciated the feedback sent via email on their graduate students' research proposals, and several indicated that they would pass the feedback on to their supervisees. One supervisor even admitted involvement in the supervisee's research for a long time and would address the issues highlighted in the feedback (*see* examples in tables 1–7). This acceptance by supervisors shows that the feedback sent was helpful for orienting graduate students' research projects to a successful completion and confirms the need for and use of such scaffolding as noted in the literature (Marshall, Klocko, and Davidson 2017; Rackham Graduate School 2020; Stoeger and Ziegler 2021; Tian, Watson Todd, and Darasawang 2012). In valuing and passing on of the feedback from graduate research seminars sent via email to their research supervisees, the research supervisors in a Caribbean higher education context demonstrate the “Lavian” situated learning theory's community of practice in such shared knowledge collaboration (Illeris and Ryan 2020). Vygotsky's sociocultural theory associated with the concept of scaffolding and the Zone of Proximal Development (ZPD) also holds true in the study findings. The research supervisees are learning from more capable peers (e.g., those in the research seminars) during their development from novice researcher to becoming independent problem solvers (Eun 2019). In a Caribbean context, the research supervisors' endorsement and relaying of the graduate seminar feedback sent via email show an improvement to the sometimes unclear feedback and “sink-or-swim” approach some graduate students experience in graduate research supervision as highlighted in the literature (Chireshe 2012; Kennedy 2016). The use of scaffolding in graduate research supervision and its favourable findings in the current study also help to inform goals and objectives of The UWI's strategic plan that include improving the quality of tertiary education for students (The UWI, St. Augustine Campus 2020).

Conclusion

In conclusion, the study findings are not unexpected. Graduate students are considered novices and may not get the required alignment right for the various parts of their research proposals the first time around. This shortcoming confirms the need for guided support in graduate supervision as advocated in the literature (Akareem and Hossain 2016). Further, the guided support or scaffolding provided on graduate students' research proposal presentations, to include linked resources, would help to correct these inadequacies and reduce the difficulty graduate students have of undertaking their final research project in a Caribbean context. These modifications would help to improve the quality of supervisees' research proposals for meeting set requirements and, by extension, their research output quality in keeping with The UWI's Triple A Strategy (The UWI 2017; The UWI 2018).

Implications

The implications of the study for practitioners, researchers, and policy-makers involved in graduate research supervision in a Caribbean context are encouraging. In widening its access to graduate degree programmes, universities can invest more resources into providing adequate support for graduate students. In particular, this support can consider running "Research e-Clinics", which have worked for graduate research supervision at a premier Caribbean university. Also, lecturers for research courses can place emphasis on the grey areas highlighted in the study's research findings (e.g. insufficient literature review and more rigorous methodology) to better enable the graduate students to apply what is learnt during preparation inside the classroom to their final research projects outside of the classroom. Research supervisors can establish themselves as a community of practice in providing feedback on their supervisees' research proposals to include emails with linked resources for enhancing guided support or scaffolding of their supervisees. Researchers can probe deeper into the feedback given to graduate research supervisees during graduate research seminars in documenting the challenges and solutions found as a digital repository for the graduate supervision community, especially for narrowing the gap in the current literature for a Caribbean perspective on the use of scaffolding in graduate research supervision.

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