Directive, collaborative, or non-directive? Thesis supervision approaches in the United Arab Emirates

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This study investigated graduate students' perceptions of and satisfaction with the approaches used by their thesis or dissertation supervisors, and contrasted student perceptions with those of their supervisors. Students reported that their supervisors used collaborative supervision more often, and a statistically significant relationship was found between this approach and their satisfaction. In contrast, faculty believed that they used directive supervision more frequently and were convinced that students preferred this approach. Qualitative findings connected this to supervisors' initial low perceptions of students' developmental levels. Over time, however, they became less directive, aiming to encourage students to develop as independent scholars. Students did not seem to fully comprehend the meaning of collaborative supervision and perceived their supervisors as being more directive during writing the problem and methodology sections than during writing other sections of the thesis or dissertation. The study recommends that supervisors be ready to use different approaches to adapt to the different needs and abilities of students.

Introduction

Graduate students consider the relationship with a faculty supervisor as one of the most important factors affecting their academic identity and satisfaction with their graduate program (De Kleijn, Meijer, Pilot & Brekelmans, 2014; Halse & Malfroy, 2010), and it is a critical factor for graduate student success (Bargar & Mayo-Chamberlain, 1983; Peterson, 2007). Maintaining good relationships between supervisors and graduate students minimises students' dissatisfaction and decreases attrition (Parker-Jenkins, 2016). Several studies have described the challenging task for supervisors in creating a delicate balance between the need to guide and structure student work on the one hand, and preserve student autonomy on the other (Delamont, Parry & Atkinson, 1998; Li & Seale, 2007). As Anderson, Day and McLaughlin (2006) stated, it is not easy for supervisors to shape the academic behaviours of students, as two types of power come into play. The first of these is the power of control in terms of giving clear directions, which according to de Kleijn et al. (2014) is more positively related to student achievement and learning. The second is the power of positive human relationships or psychological support (Forehand, 2008), which leads to higher student satisfaction.

Many studies describe the relationship between faculty supervisors and graduate students on a power continuum, ranging from unquestionable faculty directives and micro-management at one end, to total student self-determination at the other (Lee, 2007; Brew, 2001; Pearson & Brew, 2002). Although this line of research has been given significant attention in Western publications, it has not received the same focus in the Arab region. This could be because the student-supervisor relationship is viewed more formally, with interaction being governed by more rigid social norms. In this more formal relationship, it

is expected that students receive and follow more directive supervision. In such a context, it is possible that, student satisfaction may be viewed as less important. Therefore, this study investigated supervision approaches at one university in the United Arab Emirates. The aims were to determine whether a relationship exists between supervisory approaches and student satisfaction, to understand why supervisors and students might prefer certain approaches, and to explore whether faculty and students share similar or different perceptions of the supervision process.

Literature review

A number of frameworks have been used to examine the relationship between supervisors and graduate students. The French and Raven power taxonomy (1959) described supervisors' power using five types: (1) referent power, when students aspire to associate with certain supervisors because of their reputation; (2) coercive power, when students believe in the supervisor's ability to penalise them; (3) expert power, when students trust that supervisors can provide them with special knowledge to follow; (4) legitimate power, when students perceive that supervisors can obligate them to comply; and (5) reward power, when students believe that supervisors can provide them with benefits. Raven (2008) added the informational power base to the taxonomy, which means supervisors explain different ways of doing things and students think and behave accordingly in a process that could lead to "cognitive change" (p. 2). He noted that supervisors who are knowledgeable about the influences of these power bases were more successful in the supervision process. Furthermore, according to Aguinis, Nesler, Quigley, Lee and Tedeschi (1996), the use of expert power positively affects students' perception of supervisors' trustworthiness and credibility, their perception of the overall quality of the relationship, and their desire to collaborate with their supervisors in future research. Coercive power produces opposite effects. In another line of research, Armstrong (2004) examined the effect of supervisors' cognitive styles (the analytic, logical or structured style and the intuitive feelings-based style) on the quality of supervision in one university in the UK. The findings indicated that the more analytic the supervisor was, the greater the students esteemed the quality of supervision and success of their dissertation — a result that could be supporting the influence of supervisors' expert power.

Acker, Hill and Black (1994) noted that graduate studies can be viewed as a training exercise or an original contribution to scholarship. The student can be either an apprentice to the supervisor or an independent scholar, the goal either speedy completion or scholarly creativity. They argued that when the emphasis is on the "how" of procedure or technique, there is a "technical rationality" (p. 484) mode of supervision, where the supervisor becomes a manager or director, keeping the student on track and providing guidelines while the student is relatively passive. This mode provides structure to the process and gets results. In contrast, when the focus is on the "why," and when the supervisor and student participate fully in the negotiation and interpretation of different issues, the result is a "negotiated order" model (p. 485). This model fosters students' creativity, as the role of the supervisor shifts to that of a facilitator of the thinking process rather than that of a director of the writing process.

Building on Brew (2001) and Pearson and Brew (2002), Lee (2007) proposed a framework for supervision that consists of five approaches: functional, enculturation, critical thinking, emancipation, and developing a quality relationship. Accordingly, the supervisor's roles can be to manage the project, to acculturate the student to the discipline and the research community, to encourage the student to question and analyse different work, to encourage the student to question and develop themselves, or to have a relationship of trust and care for the student. In a subsequent study, Lee (2008) concluded that two key factors most influence supervisors' approaches: their concept of research supervision and their own experiences as doctoral students. She added that the supervisors who understand the pros and cons of each approach were more likely to enjoy and benefit from the supervision experience.

Bartlett and Mercer (2000) described the relationship between supervisors and graduate students using three metaphors: "creating in the kitchen", where the supervisor and student are in a cook/candidate relationship; "digging in the garden", where a supervisor/gardener provides friendly wisdom to a newly relocated student/neighbour when asked; and "bushwalking", where the supervisor and student are companions and have equal power. They found that hierarchical models and often combative dynamics based on unequal power relations prevail. Franke and Arvidsson (2011) analysed different ways of supervising doctoral students in a Swedish university using two main supervision structures: practice-oriented and relation-oriented supervision, and recommended a combination of these two approaches for maximum effect. In the same vein, Ylijoki (2010) and Parker-Jenkins (2016) concluded that there is no "best practice model" that can be used in all situations and that the style or approach used should depend on the faculty, student, and program.

The relationship between supervisors' styles and students' satisfaction and self-efficacy was investigated by Fernando and Hulse-Killacky (2005). To carry out their study, they identified three main types of supervision: attractive (i.e., friendly, trusting, and supportive), interpersonally sensitive (i.e., intuitive, invested, and reflective) and task-oriented (i.e., structured, goal-oriented, and evaluative). The interpersonally sensitive style was the main style found to be statistically significant in predicting student satisfaction. On the other hand, the task-oriented style was the only style found to be statistically significant in predicting students' self-efficacy. No relationship between students' satisfaction and their self-efficacy was found. They recommended that even though supervisors may prefer a particular style, it would be beneficial to draw on more than one style to shape a successful supervision experience.

To conclude, the literature provides several frameworks for conceptualising and investigating the relationship between supervisors and graduate students. One commonality among them is that when a supervisor holds most of the decision making power, the supervision process becomes technical and the relationship is task-oriented. While tightly controlling the supervisory relationship might lead to speedy completion of the degree, it might not lead to student satisfaction and is not conducive to developing graduate students' research skills. Another conclusion is that supervisors should not restrict themselves to using one model at all times. They should tailor their supervision to

fit the needs of their students and the contingencies of the situation. Therefore, some degree of technical direction and negotiation are needed to have a successful outcome of the supervision process.

Theoretical framework

In this study, Glickman, Gordon and Ross-Gordon's (2013) framework is adopted to explore the supervision process because it is built on the idea of the supervisor-student power continuum, but at the same time, it incorporates ten interpersonal communication skills (such as presenting ideas, negotiating, problem-solving, standardising, etc.), that enable easy identification of the supervisor's approach. It is also built on three educational philosophies that explain faculty perceptions of knowledge. Originally used to explain the supervision of school teachers, the framework is based on the philosophies of essentialism, experimentalism, and existentialism. Essentialists advocate that there is essential knowledge students should learn and that the teacher is the main source of learning (Kessinger, 2011). Experimentalists believe that the traditional teacher-student relationship, where the teacher is the only source of knowledge, is insufficient (Elias & Merriam, 1995), as students should reconstruct their experiences through interaction with their environment. Existentialists perceive students as having complete freedom to create their own meanings and engage in self-discovery (Koirala, 2011). Glickman et al.'s framework is an application of these philosophies to the work of supervisors. Table 1 summarises the main points and adapts these philosophies to the work of faculty supervisors.

Table 1: Educational philosophies and faculty supervision approaches

	Essentialism	Experimentalism	Existentialism
View of knowledge	Exists outside humans, absolute, and unchanging	What works, tentative, and constantly changing	The individual is the source of all knowledge
How to learn	Train the mind to think rationally	Interact with the environment, experiment	Engage in self-discovery, create own meaning
Application to faculty supervisors	The supervisor is the expert, transmits skills of academic writing to graduate student	The supervisor interacts democratically with the graduate student, testing ideas	The supervisor facilitates students' autonomous writing
Supervision approach	Directive supervision	Collaborative supervision	Non-directive supervision

Based on these three philosophies, Glickman et al. (2013) developed three approaches to supervision: directive, collaborative, and non-directive. They divided the directive approach into control and informational. In directive control supervision, the faculty holds all power, and his or her directives are to be carried out by the graduate student. In directive informational supervision, the faculty provides the graduate student with alternatives, and the graduate student evaluates and selects what he/she can do. In this situation, the supervisor is seen as the expert, and the graduate student is still restricted by the options made available by the faculty supervisor.

In collaborative supervision, the faculty and student have equal power and responsibility and they make shared decisions (Elias & Merriam, 1995). In this approach, supervisors do not present their ideas until students present theirs, to avoid influencing students. Furthermore, no party imposes ideas, and negotiation is evident (Glickman et al, 2013). The non-directive approach means that the student has the power to make independent decisions (Koirala, 2011). The supervisor's role is to facilitate a student's self-directed learning by asking non-leading questions. The role of the supervisor is to clarify ideas and keep the discussion going (Glickman et al., 2013).

To use any of these approaches in a supervisory situation, the faculty needs to assess the graduate students' developmental level in terms of their abstraction, motivation, and expertise and then select an approach that creates the best supervisory match. As a student develops, the faculty member modifies his or her behaviours in the direction of more student control, thus moving across the continuum from directive control behaviours to non-directive behaviours.

The study

After a graduate student has passed required courses, writing a thesis or dissertation is typically the final stage in completing the graduate degree. In the context of the current study, the PhD dissertation counts for around half of the required credits, while a Master's thesis or sometimes a research paper/project counts for around one-fifth of the required credits for the degree. The writing experience should enhance the graduate student's reasoning and research skills (Drennan & Clarke, 2009), but it sometimes incurs a degree of student anxiety or even withdrawal (Ylijoki, 2010). Research confirms that graduate students' satisfaction with the thesis experience depends largely on their satisfaction with the faculty supervisor (Johnson 2016, p. 147). Many studies emphasise the importance of the supervisor-student relationship and its impact on students' educational outcomes and satisfaction (e.g., Aguinis et al., 1996; de Kleijn et al., 2014; Erichsen, Bolliger & Halupa, 2014; Ismail, Jui, Sham, Faqih & Abdullah, 2015; McCallin & Nayar, 2012). In the context of the UAE, there were no previous studies located on this topic. Therefore, this study ventures to add to knowledge about this topic within the UAE and provide an international audience with a new angle from which to ponder the topic. The study focuses on the perceptions of both graduate students and faculty supervisors regarding the supervision approaches used, whether a correlation exists between supervisory approaches and student satisfaction, and whether faculty and students share similar or different perceptions, and why. As such, the study was guided by the following research questions:

1. What are the most and least frequently used supervision approaches by faculty supervisors with graduate students as they write their thesis or dissertation?
2. How satisfied are students with these approaches?
3. Is there a statistically significant relationship between the supervisory approaches used and student satisfaction?
4. How do faculty supervisors and graduate students perceive supervision during writing of the thesis or dissertation?

Method

This study used a sequential explanatory mixed research method (Creswell, 2003), where quantitative data were collected and analysed first. Then, qualitative data were collected, analysed, and both were used in interpreting the results. Through quantitative data, the opinions of graduate students were described in terms of the most and least frequently used approaches of supervision and their respective satisfaction levels. Quantitative data from faculty supervisors were used to identify the approaches they used most and to describe what they perceived students preferred. Then, qualitative data from one-to-one interviews with students yielded a deeper understanding and elicited more details about their experience. Finally, supervisors' perceptions of the supervision process were obtained by answering a survey with open questions.

Instruments

Three data collection tools were used in this study. The first was a researcher-developed questionnaire that encompassed two dimensions. The first dimension consisted of six stages in writing the thesis or dissertation, including topic selection, writing the problem section, literature review, methodology, discussion chapter, and providing feedback. The second dimension was based on the four approaches to supervision by Glickman et al. (2013). Respondents were asked to select one choice from the four approaches to assess each stage and rate their level of satisfaction on a six-point Likert scale. Next, students were given four sentences summarising the four approaches to supervision and were asked to select the overall approach they believed their supervisors used. Finally, students were asked to choose their preferred approach to supervision. The demographic part of the questionnaire collected data on gender, degree sought (Masters or PhD), and college (see Appendix A). The questionnaire addressed questions 1-3 of the study. An electronic copy of the questionnaire was created using *Google Forms*, and the link was sent to the whole student population in this study. Before completing the questionnaire, students had an opportunity to agree or disagree to complete the questionnaire.

In the second phase of the study, semi-structured interviews were conducted with sixteen students. This addressed the fourth question of the study. The interview questions had a similar outline to the questionnaire, where students made choices regarding the approaches their supervisors used, explained their answers, and commented regarding their levels of satisfaction (see Appendix B). Most interviews were face-to-face, and some were conducted over the phone. The interview time ranged between 15 and 30 minutes each. All interviews were audio recorded after permission was obtained.

Concurrently, a brief survey was created for faculty supervisors who were provided with definitions of the four approaches to supervision and were then asked to select which approach they most often used, what approach they perceived was most often used by their peers, and what approach they thought students preferred. Then, they were asked to answer two open-ended questions: Why do you think the approach you used is suitable for your advisees? If they believed students preferred a different approach, they were

asked, Why was that? (see Appendix C). Consent was obtained before faculty completed the surveys.

Validity and reliability

The content validity of the questionnaire was checked by a jury of five faculty members in education and social sciences who reviewed and approved the questionnaire content. To measure reliability, pre-and post-tests were used where the questionnaire was completed twice with a time lapse of two weeks by a pilot group of 15 graduate students who were excluded from the sample of the study. During the second administration of the test, the pilot group was advised not to consider their previous responses and to answer the questionnaire as they currently felt. Then, Pearson's *r* was used to test the correlation between their answers in the pre- and post-test. The Pearson correlation coefficients ranged from 0.83 to 0.96, indicating a high correlation. For the satisfaction scale, Cronbach's alpha was used to test internal consistency, finding alpha coefficient 0.95 for the pre-test and 0.96 for the post-test, indicating very high reliability.

Participants

The student population for this study was made up of graduate students who defended their thesis during the 2015-2017 academic years (N=213). This number included Masters (n=175) and PhD students (n=38). The sample of this study was 124 graduate students, with a response rate of 58.2%. This included 45 male (36.3%) and 79 female students (63.7%), 105 Masters and 19 PhD students, and 91 students from science-related colleges and 33 from humanities. The questionnaire allowed students to indicate interest in being contacted for an interview. Twenty-five provided their phone numbers, of whom sixteen were selected for the interviews based on their availability at the time of the interviews. Of these, eleven were masters students and five were PhD candidates, with two male and 14 female students.

In addition to the student sample, faculty members (N=40) who supervised graduate students completed a survey. Faculty supervisors were drawn from various colleges: Science (n=12), Education (n=8), Social Sciences (n=7), Food and Agriculture (n=8), Business (n=3), and Engineering (n=2). Thirty-five of the faculty supervisors were male and five were female.

Data analysis

Quantitative data were divided into categorical data — the different supervisory approaches used by faculty members and interval data. The satisfaction level of students was measured with a six-point Likert-type scale ranging from "not satisfied at all =1" to "totally satisfied = 6". For categorical data, percentages were used to identify the most and least frequently used approaches. For interval data, the means, medians, modes and standard deviations were calculated to determine the overall student satisfaction level. Then, to assess the relationship between supervision approaches and student satisfaction, the Kruskal Wallis H test was used to analyse the relationship for each question, where the

supervisor approach was the independent variable and student satisfaction was the dependent variable. For post hoc analysis, pairwise comparisons using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons were used.

For the qualitative data from students, the audio recorded interviews were transcribed and uploaded to *Nvivo 11 Pro*, where the data were organised into nodes. These were printed and analysed with the aim of describing students' perceptions of working with faculty supervisors. The answers to the open-ended questions from faculty supervisors were compiled from different surveys in an *MS Word* file and organised into themes, after which excerpts were selected to support the themes.

Results

Quantitative results

The first and second questions investigated the most and least frequently used approach by supervisors with graduate students, during different stages of writing their thesis or dissertation, and how satisfied students were with the approaches. To answer the first question, descriptive statistics in the form of frequencies were used. Table 2 presents the results.

Table 2: Student perceptions of supervisors' approaches (%) (N=124)

Stage	Directive control approach %	Directive information approach %	Collaborative approach %	Non directive approach %
1. Selecting the research topic	21.8	16.9	32.3	29.0
2. Formulating the research problem	20.2	11.3	51.6	16.9
3. Writing the literature review	13.7	10.5	37.9	37.9
4. Writing the research methodology	21.0	14.5	46.0	18.5
5. Providing feedback	11.3	21.8	52.4	14.5
6. Writing the discussion chapter	9.7	12.9	54.8	22.6
7. Overall approach	13.7	11.3	57.3	17.7

According to students, the most frequently used approach was the collaborative approach (57.3%), and the least frequently used was the directive informational approach (11.3%). However, students believed that their supervisors used the non-directive approach to a large degree in selecting the research topic (29%) and writing the literature review (37.9%). When summing percentages of the two directive approaches, supervisors were found to use directive supervision more often in selecting the research topic (38.7%), writing the research methodology (35.5%), and formulating the research problem (31.5%) and less often when writing the literature review (24.2%) and writing the discussion chapter (22.6%). The results indicate that supervisors might be investing more in essentialism and experimentalism and less in existentialism as their driving philosophies, and that they shifted from one approach to the other depending on the stage at which a student was working.

To assess the level of student satisfaction (research question 2), descriptive statistics were used. Table 3 presents the means, medians, modes and standard deviations.

Table 3: Student satisfaction with supervisors' approaches (N=124)

	Mean	Median	Mode	Std. dev.
1. Selecting the research topic	5.31	6.00	6.00	.95
2. Formulating the research problem	5.10	5.00	5.00	1.07
3. Writing the literature review	5.11	5.00	6.00	1.05
4. Writing the research methodology	5.18	5.00	6.00	1.03
5. Providing feedback	5.01	5.00	6.00	1.25
6. Writing the discussion chapter	5.12	5.00	6.00	1.16
7. Overall satisfaction	5.13	5.00	6.00	1.19

Graduate students were satisfied or highly satisfied with supervisors' approaches used during the various stages of writing their thesis, and the overall rating was satisfied (M = 5.13). Selection of the research topic (M = 5.31) and writing the research methodology (M = 5.18) ranked the highest, while feedback by the supervisors received the least satisfactory rating (M = 5.01). Table 4 presents data from the forty faculty supervisors who completed the survey.

Table 4: Results of faculty supervisors (N=40)

	Directive control %	Directive informational %	Collaborative %	Non-directive %
What faculty used	26	27	42	5
What peers used	34	26	32	8
What faculty perceived students prefer	50	18	24	8
What students perceived faculty use	14	11.5	56	18.5
What students preferred	13	16	67	4

Supervisors believed that they themselves most often used collaborative supervision (42%) and then directive informational supervision (27%), while perceiving their colleagues to be using directive control supervision (34%). Interestingly, while supervisors believed that students mostly preferred directive control (50%), in reality, students preferred collaborative supervision (67%). When summing percentages of the two directive approaches, the results indicate that supervisors believed that they most frequently used directive supervision (53%), that their peers used directive supervision (60%), and that students preferred directive supervision (68%).

The third question investigated whether a relationship exists between particular supervision approaches and student satisfaction. To test this relation, a Kruskal Wallis H test was conducted. The results indicated a statistically significant difference in the level of student satisfaction (H (3) = 35.73, p = .000). Then, pairwise comparisons were performed and the post hoc analysis revealed statistically significant differences in median

scores between collaborative (77.37) and directive control supervision (43.91) ($p = .001$), collaborative and directive informational supervision (51.64) ($p = .046$), and collaborative and non-directive supervision (35.80) ($p = .000$). In other words, collaborative supervision is related to higher graduate student satisfaction than the other three approaches.

Qualitative results

The fourth research question explored supervisors' and students' perceptions of supervision approaches during writing the thesis. To answer this question, results from student interviews and the faculty surveys are presented.

Students' perceptions

Interview data from students revealed five recurrent themes: students did not fully comprehend the meaning of collaborative supervision; they believed that supervisors paid more attention to the problem and methodology sections of their research; the supervisors used more than one approach and became less directive over time; students had negative views about their own abilities; and they found positive aspects in all supervision approaches used.

Collaborative supervision misinterpreted
Most students had an unclear understanding of the correct meaning of collaborative supervision and how it is practised. They believed that when supervisors listened to them and gave them time to talk, they were acting as collaborative supervisors.

> He gave me steps and I wrote and shared with him every page and asked him, is this correct? He gave me comments, 'add more here, remove this…' this is how we collaborated (female, MA, Science 2).

> I would have loved to have a collaborative approach where I would have had more-specific guidelines from the professor (female, PhD, Education).

More attention to problem and methodology than literature and discussion
Students believed that supervisors gave more directions when they were writing the problem and methodology sections, but they expressed that they felt freer when writing the literature review and the discussion chapters.

> We spent a whole semester where every week we met in her office, and wrote and rewrote the problem section… In the methodology too, because it is technical writing, so she used to say this is how to write it and I had to follow (female, MA, Science 1).

> I felt that writing the literature was a little hard for me… I was seeing what other students did and tried to imitate them… It was more of self-learning (female, MA, Engineering).

> The methodology was mainly his guidance (female, PhD, IT).

> I did the discussion on my own and then I was given feedback from my examination committee that it was not thorough and it needed more elaboration (female, PhD, IT).

Movement from directive to non-directive

Students believed that supervisors did not use one approach to supervise them. Some supervisors started with directions, and as the students grew in research, they moved away from being directive.

> He gave me many directions in the beginning because I did not know much about research. After I started to understand, I brought in my points and he accepted them (female, MA, Engineering).

> In the beginning, I had tons of feedback. I was just starting and it was new to me. But in the end, he did not give much feedback (female, MA, Science 2).

> Yes, directive at the beginning and then accepting some of my ideas, rejecting, etc., and at the end, he provided me full freedom to write what I want in the discussion chapter (female, MA, Education 2).

Students' negative views about their abilities

Many students believed that they did not have enough research background, which led them to ask for directions from their supervisors.

> I wish he gave me directions. I am still a new student. At least, to give me a good example and to explain it (female, MA, Education 1).

> She gave me tips in every part. At first, I did not understand her and I asked for examples… I had no background whatsoever in conducting research. She used to sit with me for long hours and explain (female, MA, Political Science).

> I felt my writing was not convincing, so I accepted his comments and did the modifications… Many times I felt I did not have the experience, so I asked for his insights (male, PhD, Education).

Satisfaction is almost inevitable

Regardless of the supervision approach used, most students felt satisfied. If supervisors gave directions, students were happy to be clear about everything; if supervisors used collaboration and engaged students in discussion, students expressed satisfaction with the time and communication with their supervisors; if supervisors used non-directive supervision, students worked hard and were confused but valued their learning and achievement.

> I wasn't satisfied completely because I felt too burdened in choosing my topic… I wrote and rewrote the problem many times until he was satisfied. But his behaviour was of help because it made me see the problem very clearly, and I was able to defend it (female, MA, Education 2).

> I spent a whole summer trying to work on a simulator… and although he knew I was wrong… he was flexible until I figured that it's useless and I can't use it, and then he directed me to something else; so he gave me the option of trial and error, and that was very helpful (female, PhD, IT).

> The supervisor did not have a role in formulating my research argument. But I am satisfied that she gave me the freedom to write it as I want (female, PhD, Humanities and Social Sciences).

Faculty supervisors' perceptions

The majority of supervisors believed that students prefer the directive control approach for a variety of reasons. Directive supervision "saves them trouble and responsibility for making decisions." Students, one faculty member suggested, "believe that the supervisor knows everything, and everything he or she says is correct, so they prefer following directions literally." In addition, directive supervision "places intellectual responsibility on the supervisor, which makes graduate studies less demanding and [is] more suitable to student capabilities." Finally, students prefer the directive approach, according to one supervisor, "simply because they have little knowledge of research… as their undergraduate experience is limited in scope and depth."

While supervisors used the directive approach, they expressed awareness that this approach may not help students become independent scholars. One faculty argued, "I do accept that most students prefer the directive approach because this makes their academic life easier. However, this approach takes away their need to work independently and think for themselves." Graduate writing requires hard work and thinking, and, according to one faculty supervisor, "if too much thinking is done by the supervisor, then what is the ultimate worth of the certificate given to the candidate?" Therefore, while students may prefer to be told what to do, the faculty consensus was that, "at the PhD level, students should be able to think for themselves and make informed decisions."

Supervisors who used collaborative supervision had their reasons as well, which included helping students become autonomous learners, preparing them for the future, and building their self-confidence. One faculty argued, "If you keep directing students, they will not become autonomous, they will rely on you all the time… and they will not be able to make decisions." Another faculty believed that "Collaboration prepares them for the real world… you are not throwing them in the deep end and expecting them to swim, but you are working with them to learn the steps and the process." Furthermore, collaboration creates a friendly environment where "students feel good about themselves and are more motivated to do the work."

Supervisors agreed that leaning on the directive approach would not be conducive, ultimately, to optimal learning and that they should move to more student-focused approaches as soon as the students' abilities permitted. During the early stages, they believed it was fine to be directive, "but as they progress, it is important to collaborate with them and give them the lead to make decisions." Some faculty reflected on students' previous experience and the importance of helping them move from traditional learning: "The way they used to learn in school makes them prefer the feeding approach, but we need to move them forward."

Reading and thinking are two important skills that are seen by supervisors as critical to writing in academia. Unfortunately, many supervisors believed that students were not investing sufficient effort in this regard: "The problem is that the majority of them do not read, and therefore, they face some difficulties during this period," and they believed students' previous experience was to blame for this weakness. As one faculty illustrated,

> They need time, effort, and experience to be able to lead themselves as researchers. They need to read and search to benefit from those before them… Many of them do not want to spend time developing themselves.

It seems that supervisors do not believe that students come to the programs with high levels of abstract thinking ability, willingness, and motivation. They were critical of their research backgrounds, as the following excerpts show:

> Students are not ready to work by themselves. All my advisees always asked for directions, even in later stages when they should be able to make decisions, because they do not want to exert effort or lead their own study.

> They don't have enough experience to determine their line of research.

> They lack experience, and they do not want to exert effort in developing themselves.

Given supervisors' low perceptions of incoming graduate students' abilities in abstract thinking, reading, research, and decision-making, collaborative and non-directive supervision styles would not be well employed in their supervisory roles. Instead, their students would be better guided through either directive control or directive informational supervision. The following quotations confirm this idea:

> The directive informational approach in my opinion provides a reasonable balance… the student is not forced to follow a single path; he/she is given freedom to choose the best option that fits his/her needs from a set of possible ones (a kind of guided autonomy).

> It is better to allow students to give their opinions and express themselves, but at the same time, they lack experience, and therefore, I use the two directive approaches, as they need guidance.

Discussion and implications

This study has two main limitations. First, it was conducted at one university, so generalisation of the results should be approached with caution. Second, the use of self-administered tools for students and faculty has its downside. Generally, students' responses to the questionnaire were mostly positive because they might have preferred to give high credit to their professors, but in the interviews, they were more open and critical. Also, students might have responded to the questionnaire based on general impressions or single incidents in their relationships with the supervisors. However, qualitative interview data provided triangulation and increased credibility of the results.

One contribution this study makes is that it considers the perceptions of both supervisors and graduate students. Frequently, studies focus solely on perceptions of students and their satisfaction. Another noteworthy feature of this study is that it adopts a modified framework that not only helps identify supervision approaches but also illustrates how faculty supervisors conceptualise the nature of learning during different stages of thesis writing. Follow-up studies are needed to explore this research topic for greater depth and clarity.

This study revealed that students perceived that the most frequently used approach was the collaborative approach, but when selecting research topics, supervisors used the non-directive approach to give students the opportunity to study topics of interest to them. When the two directive approaches were summated, the results showed that supervisors were more directive when students were writing their research problem and methodology sections or chapters and became less directive when they wrote the literature review and the discussion chapters. This result indicates that faculty supervisors might not be adhering to one philosophy of knowledge and that they shift their approach of supervision based on the importance they ascribe to different parts of the thesis or dissertation. However, a question should be raised about the possibility that the same supervisor might work according to different and sometimes conflicting philosophies such as essentialism (when a student writes the methodology section) and existentialism (when a student writes the discussion section). Ideally, it is suggested that, for best results, a supervisor should subscribe to one philosophy of learning and allow this to guide his/her supervisory style. One explanation is that supervisors might subscribe to one philosophy of learning but cannot apply the tenets of this philosophy to every student. Therefore, they have to adapt to their students (Parker-Jenkins, 2016) and move from one philosophy to another depending on the situation. In fact, Glickman et al.'s framework postulates that the supervisor should be trained to use all approaches and move from one approach to the other to adapt to students' developmental levels. Although this principle was meant to be applied with supervising teachers, previous research also suggests that faculty supervisors should be ready to change their approaches to accommodate the different needs and capabilities of their advisees.

Students were satisfied or highly satisfied even when the faculty supervisors used the non-directive approach in selecting the research topic or the directive approach in writing the research methodology. This result is confirmed by the qualitative finding that students were satisfied in most cases. However, the quantitative results appeared to tell a different story, suggesting that the different approaches would lead to different levels of student satisfaction. For instance, it was found that collaboration would significantly affect student satisfaction. How can these seemingly contradictory results be justified? In assessing these results, the qualitative data were examined to discover how students understood the meaning of collaboration and how they believed it was practised. It was discovered that students believed that when supervisors listened to them and gave them time to talk, they perceived them as collaborative supervisors. In theory, collaborative supervision means that the supervisor treats the graduate student as an equal, and no decision is made without their mutual agreement, as in the bushwalking model (Bartlett & Mercer, 2000) or the negotiated order model (Acker et al., 1994). Negotiation or compromise is used, and

in case of obvious disagreement, a third party can be consulted (Glickman et al., 2013). The data gathered did not suggest that this was how supervision was practised in this context. Therefore, students might have different definitions of collaboration than what is suggested by the supervision framework.

Another result was that supervisors initially viewed themselves as using collaborative supervision more often than other approaches, at a time when they believed their colleagues used and students preferred the directive approach to supervision. When the directive control and directive informational approaches were summated, the results changed, however, and showed that supervisors did use directive supervision, matching what they thought students preferred and colleagues used. The qualitative results from the supervisors indicated that they believed students preferred directive supervision, adding additional evidence to the results of the questionnaire data. Furthermore, supervisors believed that students were not at a developmental level that would allow them to be independent learners, especially at the beginning of the thesis writing process. They mentioned that students' levels of abstraction, willingness, and motivation were not yet up to a standard from which they could read and think as researchers do. These two findings support supervisors' perceptions that students preferred the directive approach, which is also supported by the students' own reports about their low self-confidence in writing research.

Although supervisors used directive supervision, they were aware that this approach ultimately would not foster the development of independent learners if used alone throughout the period of writing the thesis. Therefore, they also used collaborative supervision to help students be independent and increase their self-confidence. These modifications of supervisory style reflect the essence of developmental supervision, which is to pitch the supervision approach to the level of the student. One approach cannot be used all the time (Fernando & Hulse-Killacky, 2005) with every student, or at every stage of the thesis writing. Dissonance would occur, however, if the supervisor jumped too abruptly from directive control to collaborative. In principle, the shift should be gradual. Therefore, directive control should be followed by directive informational supervision, as it allows students some freedom, but does not cancel directives from supervisors, and can lead to cognitive development (Raven, 2008). Results from the students' interviews indicated that supervisors granted them more freedom and sometimes full freedom to write their literature reviews and discussion chapters, raising the possibility that supervisors were making large leaps in their approaches, from directive to non-directive, even when students were uncertain about their writing abilities. Students should show enormous growth before supervisors become totally non-directive as Glickman et al.'s framework suggested.

Another finding suggests that faculty supervisors might be using different supervision approaches based on the relative importance they assign to different components of the thesis. It is well known that the problem statement and the methodology are critical elements in the process, and therefore, supervisors were more directive with these parts than others. This approach corresponds with the "technical rationality" model (Acker et al., 1994) or "practice-oriented" model (Franke & Arvidsson, 2011). While these sections

might need to be well-written technically, the aim of preparing independent scholars might not have been effectively met if students have not themselves been the primary authors of each section.

Finally, the focus of graduate education should not be on completing degrees but on producing the next line of researchers and scholars. In the context of the present study, the relative underuse of the collaborative and non-directive approaches throughout this critical process needs some attention in research. Supervisors should be aware that while using the directive approach can lead to speedy completion of a degree (Wright & Lodwick, 1989), it might negatively affect a student's development and the contribution they are able or unable to make toward advancing the field as they progress in their career. Students should be engaged in a process of enculturation, critical thinking, and emancipation, as Lee (2007) argued, if we are keen to effectively prepare them for the future.

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Appendix A: Graduate students survey

Section 1: Demographic data
Directions: Please check one choice for each of the following:

Gender:	Level of education:	I worked with:
☐ Male	☐ Master	☐ One supervisor
☐ Female	☐ DBA	☐ More than one
	☐ PhD	

College:		
☐ Food and Agriculture	☐ Business and Economics	☐ Law
☐ Engineering	☐ Humanities and Social Sciences	☐ Science
☐ Medicine and Health	☐ Information Technology	☐ Education

Section 2: Supervisory practices
Directions: Below are sets of four statements. Check which statement best describes the behavior of your thesis/ dissertation supervisor. If you worked with more than one supervisor, consider your latest supervisor only. You may choose only one of the four statements.

1: Selecting the research topic:

☐ My supervisor directed me to a certain topic to study.

☐ My supervisor provided me with some ideas for topics and asked me to select one to study.

☐ My supervisor and I discussed different topics and together we made a decision to study one.

☐ My supervisor gave me complete freedom to select the topic I want to pursue.

How satisfied are you with the supervisor's behavior of "selecting the research topic"?

Totally satisfied	Satisfied	Somewhat satisfied	Somewhat unsatisfied	Not satisfied	Not satisfied at all
☐ 6	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

2: Formulating the research problem:

☐ My supervisor understood the problem in a certain way and I had to follow his/her understanding.

☐ My supervisor presented different ways to frame the problem and I selected one.

☐ My supervisor and I reached an agreement on how to formulate the problem.

☐ My supervisor gave me complete freedom to frame the problem as I see it.

How satisfied are you with the supervisor's behavior of "formulating the research problem"?

Totally satisfied	Satisfied	Somewhat satisfied	Somewhat unsatisfied	Not satisfied	Not satisfied at all
☐ 6	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

3: Framing the literature review:

☐ My supervisor had a viewpoint on framing the literature and I had to cope with it.

☐ My supervisor suggested different ways to frame the literature and I made my selection.

☐ My supervisor and I discussed different ways to frame the literature and we made a decision together to adopt one.

☐ My supervisor gave me complete freedom to frame the literature as I understand it.

How satisfied are you with the supervisor's behavior of 'framing the literature'?

Totally satisfied	Satisfied	Somewhat satisfied	Somewhat unsatisfied	Not satisfied	Not satisfied at all
☐ 6	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

4: Deciding on the research methodology:

☐ My supervisor preferred a certain research methodology and I had to use it.

☐ My supervisor told me about the different research methodologies and asked me to select one to use.

☐ My supervisor and I reached an agreement on the research methodology after each of us presented ideas.

☐ My supervisor gave me the freedom to select the methodology of my study.

How satisfied are you with the supervisor's behavior of "deciding on the research methodology"?

Totally satisfied	Satisfied	Somewhat satisfied	Somewhat unsatisfied	Not satisfied	Not satisfied at all
☐ 6	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

5: Providing feedback:

☐ My supervisor gave me direct feedback and I had to do as he/she directed.

☐ My supervisor gave me comments and I was allowed to select the ones I see suitable.

☐ My supervisor and I discussed his/her feedback and we agreed on the things I should change.

☐ My supervisor did not give me direct feedback. I felt that I was the one who led the feedback process and s/he was supportive of this attitude.

How satisfied are you with the supervisor's behavior of "providing feedback"?

Totally satisfied	Satisfied	Somewhat satisfied	Somewhat unsatisfied	Not satisfied	Not satisfied at all
☐ 6	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

6: Writing the discussion chapter:

☐ My supervisor directed me to write the discussion chapter in a specific way and I had no choice but to agree with his/her requirement.

☐ My supervisor gave me some alternatives for writing the discussion chapter and I selected one to follow.

☐ My supervisor and I reached an agreement on the way of writing the discussion chapter and s/he accepted some of my ideas.

☐ My supervisor gave me complete freedom to write the discussion chapter as I like.

How satisfied are you with the supervisor's behavior of "writing the discussion chapter"?

Totally satisfied	Satisfied	Somewhat satisfied	Somewhat unsatisfied	Not satisfied	Not satisfied at all
☐ 6	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

7: Overall, during the writing of my thesis/dissertation, I believe:

☐ My supervisor used the <u>directive</u> approach: giving me specific ideas and steps to follow.

☐ My supervisor used the <u>directive informational</u> approach: giving me options and asking me to select from them.

☐ My supervisor used the <u>collaborative</u> approach: giving me complete chance to share my ideas and together we agree on what to be done.

☐ My supervisor used the <u>non-directive</u> approach: giving me complete freedom to write as I like.

8: I would have preferred my advisor to use:

☐ The <u>directive</u> approach.

☐ The <u>directive informational</u> approach.

☐ The <u>collaborative</u> approach.

☐ The <u>non-directive</u> approach.

Please clarify any points from the above or comment on the way your supervisor worked with you.

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Appendix B: Graduate students' interview questions

Demographic data

Gender:	Degree:	Status:	Worked with
☐ Male	☐ Master	☐ Graduated (finished the thesis)	☐ One supervisor
☐ Female	☐ DBA	☐ About to finish the thesis	☐ More than one
	☐ PhD		

College:		
☐ Food and Agriculture	☐ Business and Economics	☐ Law
☐ Engineering	☐ Humanities and Social Sciences	☐ Science
☐ Medicine and Health	☐ Information Technology	☐ Education

Supervisory practices

1. How did you select your thesis/dissertation topic?
    - How satisfied are you with the supervisor's behavior of "selecting the research topic"?
2. How did you formulate the research problem?
    - How satisfied are you with the supervisor's behavior of "formulating the research problem"?
3. How did you frame the literature review?
    - How satisfied are you with the supervisor's behavior of "framing the literature"?
4. How did you decide on the research methodology?
    - How satisfied are you with the supervisor's behavior of "deciding on the research methodology"?
5. How did your supervisor provide you with feedback?
    - How satisfied are you with the supervisor's behavior of "providing feedback"?
6. How did you write the discussion chapter?
    - How satisfied are you with the supervisor's behavior of "writing the discussion chapter"?
7. Overall, during the writing of your thesis/dissertation, which approach did your supervisor use?
    - In general, how satisfied are you with your supervisor's approach?
8. Which approach you would have preferred your supervisor to use? Why?

Appendix C: Supervisors' approaches survey

Gender	☐ Male	☐ Female	
College	. . . .	Department	. . . .
I supervised	☐ Master	☐ PhD	☐ Both
No. students supervised	☐ 1-10	☐ 11-20	☐ Over 20

A number of supervision approaches can be deployed with graduate students. These include: (1) the **directive control approach** in which the supervisor gives clear directions and steps to the student to follow; (2) the **directive informational approach** in which the supervisor gives alternatives or options for the student to choose from; (3) the **collaborative approach** in which the supervisor and the student have equal power and should agree on what to be done; and (4) the **non-directive approach** in which the supervisor gives the student complete freedom to decide on what needs to be done.

1. Based on these four types, tick which approach was used:

The style	What I use with students	What is mostly used by other faculty, I guess	What students prefer
Directive or giving clear specific directions/demands			
Informational or giving alternatives or options			
Collaborative or allowing the student equal power to the supervisor on decisions			
Non-directive or giving the student complete freedom			

2. Why do you think that the style you use is suitable with students when writing their thesis/dissertation?

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3. If the student prefers another style, why is that?

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