

Journal of
Higher Education Policy
And
Leadership Studies

JHEPALS (E-ISSN: 2717-1426)

<https://johepal.com>

Leadership Self-Efficacy
(LSE) in Doctoral
Programs: Examining the
Supervisors' Lived
Experiences in Canadian
Universities

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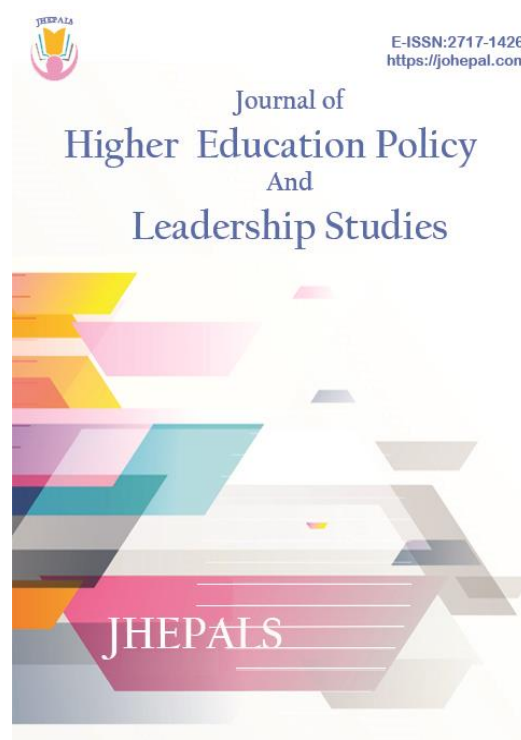
Article Received
2020/09/03

Article Accepted
2020/10/02

Published Online
2020/10/13

Cite article as:

Al Makhamreh, M., & Kutsyuruba, B. (2020). Leadership self-efficacy (LSE) in doctoral programs: Examining the supervisors' lived experiences in Canadian universities. *Journal of Higher Education Policy and Leadership Studies*, 1(2), 7-23. DOI: <https://dx.doi.org/10.29252/johepal.1.2.7>



E-ISSN:2717-1426
<https://johepal.com>

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E-ISSN: 2717-1426
Volume: 1 Issue: 2
pp. 7-23
DOI:
10.29252/johepal.1.2.7

Abstract

In this article, we describe Leadership Self-Efficacy (LSE) in doctoral programs by examining the lived experiences and perspectives of doctoral supervisors. A phenomenological research design was used to interview 16 supervisors from Canadian universities across all disciplines, social sciences and humanities, the natural sciences and engineering, and health sciences. The findings revealed the interplay of five types of efficacy in this context: research-self-efficacy (RSE) that is related to supervisors; research-self-efficacy (RSE) that is related to students; leadership self-efficacy (LSE) that is related to supervisors' roles; student self-efficacy (SSE) that is related to students' role; and, collective efficacy (CE). The main type of efficacy that made the difference in the doctoral studies context and allowed supervisors to help their students achieve their milestones, while maintaining their mental health, was the supervisors' Leadership Self-Efficacy (LSE). Effective supervisors found techniques to enhance the level of their LSE, and to support their students and enhance their students' sense of efficacy. However, the findings also suggest that supervisors experienced challenges in their roles and were not sufficiently supported, which may adversely influence their LSE and, in turn, affect doctoral students' performance and wellbeing. Implications include addressing the LSE in the doctoral supervision context at the individual level, group level, and departmental/institutional level.

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Keywords: Leadership Self-Efficacy (LSE); Doctoral supervision; Well-being; Canada

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Leadership Self-Efficacy in Doctoral Programs

Introduction

It is evident that leading doctoral students throughout four years or more to complete all the milestones successfully, while benefiting from what the program has to offer, is a big responsibility on supervisors' shoulders. These leadership responsibilities make it reasonable to look at leadership self-efficacy (LSE) as a critical piece in their roles. In the context of doctoral supervision, LSE encompasses the supervisor's belief about their own capabilities to lead, guide, mentor, coach and support a student to complete the program successfully. LSE has attracted scholars' attention as a component that determines overall leadership effectiveness (Paglis & Green, 2002; Prussia, Anderson, & Manz, 1998). Paglis (2010) reviewed the literature on leadership self-efficacy (LSE) and concluded that "those with high LSE achieve superior results, both in terms of their individual performance and in their ability to inspire followers to higher levels of collective efficacy and performance" (p. 779). LSE is defined as:

a person's judgment that he or she can successfully exert leadership by setting a direction for the work group, building a relationship with followers in order to gain their commitment to change goals, and working with them to overcome obstacles to change. (Paglis & Green, 2002, p. 217)

In this article, we draw upon the research study that explored the nature of relational leadership and the leadership competencies that influence the doctoral supervisor–student relationship within the Canadian university context. Based on the different types of efficacy examined in the supervisory experience, we report the perceptions of doctoral supervisors (N=16), in response to two research questions:

1. What is the nature of Leadership Self-Efficacy (LSE) that doctoral supervisors exhibit in their roles to help their students hit their milestones and complete their programs successfully?
2. To what extent does the supervisor's LSE influence the doctoral student's well-being and performance?

Upon reviewing the extant literature and describing research methodology, we present the findings from the participants' responses, across all disciplines. We conclude this article by presenting our discussions and implications for doctoral supervisors and universities.

Literature Review

Scholars have suggested that the relationship between a supervisor and their doctoral student is an essential element in graduate programs (James & Baldwin, 1999; Lee, 2008; Wisker, 2007). Both the supervisor and student should be aware of the way their relationship is developing because this relationship "cannot be made predictable" (Leonard, Metcalfe, Becker, & Evans, 2006, p. 32). The lack of predictability can result in a negative relationship if it is combined with a lack of awareness from one or both individuals. Effective supervision is a multifaceted process, and this social interaction is influenced by different variables (e.g., students' needs, skills, attitude, supervisors' roles, and institutional conditions) in addition to supervisory styles (Orellana, Darder, Pérez, & Salinas, 2016). These findings are consistent with Elgar's (2003) views, who noted that students and supervisors might have opposing work styles and personalities. In conjunction with the unequal balance of power, this may rapidly turn problematic relationships unpredictable and volatile. Positive working relationships between supervisors and their doctoral students are linked to students' progress in

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their programs as well as their satisfaction (Ives & Rowley, 2005). Further, a poor or negative supervisor relationship can damage a good doctoral project “regardless of any or all of the other elements which may support it” (Jones, 2013, p. 12).

The literature we reviewed defined efficacy as an important factor that can influence the supervisor–student relationship. There are different types of efficacy exhibited in the doctoral supervision context. Self-efficacy is a main one and defined as “people’s beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives” (Bandura, 1994, p. 71). The four principal sources of self-efficacy are past performance, vicarious experience, verbal persuasion, and emotional cues. Self-efficacy is an essential determinant of motivation and performance (Paglis, Green, & Bauer, 2006), which are two key elements in doctoral students’ lives. Conversely, literature has shown that the lack of a sense of efficacy is associated with “depression and an inability to cope with the demands of the job, and it can be exacerbated by a lack of social support and of opportunities to develop professionally” (Maslach & Goldberg, 1998, p. 64). It is evident that depression and incapacity to cope are real issues in doctoral programs. For example, one-third of PhD students have developed or are at risk of developing psychological distress, with an especially high risk of depression (Levecque, Anseel, De Beuckelaer, Van der Heyden, & Gisle, 2017). Depression and struggling to cope are costly expenses for individuals (e.g., students) both emotionally and intellectually, and they are costly for organizations and societies (e.g., Chiaburu & Harrison, 2008; Schermuly & Meyer, 2016). Therefore, we see efficacy as a crucial element in doctoral supervision.

On average, supervisors have greater research self-efficacy than their students do because of their past experiences and knowledge (Bandura, 1997). Forester, Kahn, and Hesson-McInnis (2004) identified research self-efficacy (RSE) as the students’ beliefs about their capabilities to conduct research from research integration to data collection to data analysis to writing the paper. The higher the sense of RSE the students develop, the more engaged they are in conducting research (Bishop & Bieschke, 1998; Kahn, 2001; Kahn & Scott, 1997). Furthermore, the more the students value the doctoral program’s mechanisms such as the mentorship they get and the dissertation preparation they experience, the higher dissertation self-efficacy (their beliefs about their capabilities to write their dissertations) they develop and the more progress they achieve (Varney, 2010). These findings speak to the importance of the leadership role that their supervisors play in enhancing their RSE.

A highly confident leader “would also likely report a high level of self-efficacy for the leadership task” (McCormick, Tanguma, & López-Forment, 2002, p. 36). Nonetheless, because leadership involves influence (Northouse, 2013), it is part of the leader’s (supervisor’s) role to motivate followers (students) and increase their self-efficacy to achieve their goals. This aspect of influence is supported by what Gelso (1993) underlined: teaching graduate students how to conduct research is not enough because they should be encouraged, excited, and motivated by their work. The author proposed six important factors that contribute to the graduate students’ research interest and productivity: (a) faculty modeling appropriate scientific behavior and attitudes; (b) formal and informal positive reinforcement of scientific activity in the environment; (c) early involvement of students in research in a minimally threatening way; (d) emphasis during training that all research studies are limited and flawed in some way; (e) teaching and valuing varied research approaches; and (f) showing students how science and practice can be wedded (Gelso, 2006, p. 6).

The supervisor can increase the level of the student’s sense of self-efficacy by (a) guiding the student and encouraging them to enroll in different courses, workshops, training, conferences, seminars, and research opportunities that universities usually offer to doctoral students, and

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coaching them to succeed and acquire the required skills to conduct research effectively (past performance); (b) acting as a role model for academic work from whom the student observes and learns (vicarious experience); (c) reminding the student that they have the required skills to succeed and using a positive language to convince them (verbal persuasion); and (d) sending positive messages to the student that make them feel like their potential is valued, such as assigning the student a challenging task (emotional cues).

Role modeling is a principal source of self-efficacy, especially in the supervision context. Graduate supervisors are often prominent role models in their students' academic lives (Baird, 1995; Bloom, Propst Cuevas, Hall, & Evans, 2007; Carroll, 2008; Delamont, Atkinson, & Parry, 1997; Donald, Saroyan, & Denison, 1995; Phillips & Pugh, 2000). For example, when the supervisor models the behaviors associated with seeking the highest levels of professional performance, they can motivate students to pursue the highest levels of performance as well (Baird, 1995). Students also learn from observing their supervisors dealing with numerous situations, problems, frustrations, and work–life balance issues (Bloom et al., 2007). Therefore, when confronted with challenges, the leader (supervisor) is expected to model his or her positivity and demonstrate efficacy, resilience, hope, and optimism (Youssef-Morgan & Luthans, 2013). Other studies disclosed that students who observed their supervisors experiencing stress from their work and lacking work–life balance preferred not to pursue faculty careers (Golde & Dore, 2001; Golde, 2005), and this indicates the powerful role modeling the supervisor can have on the students' career choices.

Students need to adapt effectively to their role as graduate students—both academically and socially—because when they are incapable of doing so, they consider dropping out (Golde, 1998, 2005). This demonstrates the importance of the supervisor as a role model who can reflect on their own experiences as former doctoral students to motivate and inspire students to adapt to their roles quickly. Supervisors understand that overcoming those “personal and academic obstacles” to succeed is attainable (Delamont et al., 1997, p. 98) and thus can share their stories with their students to teach them how to be resilient, and they can build a collective efficacy (CE) in their working relationship together.

CE is defined as “the group’s shared beliefs in its conjoint capabilities to organize and execute courses of actions required to produce given levels of attainment” (Bandura, 1997, p. 477). In this instance, it refers to the shared beliefs between the supervisor and student. Efficacious beliefs are vital for individual and group motivation, and both leader (supervisor) and follower (student) must rely on each other to accomplish certain tasks (Bandura, 1997). For example, students depend on their supervisors' feedback to enhance their research work, and supervisors count on their students to complete their work on time so that they can provide this feedback. A dynamic feedback relationship that evolves over time determines the quality of work connections (Quinn, 2007). Students need continuous feedback from their supervisors on their work (Heath, 2002), and the supervisor is expected to create a positive environment for discussing feedback. This allows followers (students) to feel motivated to work with “brain, heart and soul” (Larsen & Rasmussen, 2015, p. 50), which means more engagement, better performance, and higher satisfaction.

Researchers have found that students were satisfied when they had shared understanding with their supervisors about the *resources* (the most important factors that the doctoral students and the supervisors perceived as assisting and facilitating doctoral studies and the dissertation process), and *challenges* (meaning the most important factors that the doctoral students and supervisors perceived as hindering doctoral studies and the dissertation process) they faced (Pyhältö & Keskinen, 2012, p. 400). Additionally, students start their program with a strong desire to conduct

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research, but it is their supervisor who affirms, supports, and sustains this desire (James & Baldwin, 1999). Anticipated emotions (e.g., satisfaction, happiness) influence people's desire, and their desire ultimately influences their intentions and behaviors (Esposito, van Bavel, Baranowski, & Duch-Brown, 2016). What this means is that when supervisors impact (positively or negatively) the student's desire to conduct research, the student's intentions and behaviors are eventually influenced too. Therefore, it is important for a positive working relationship which includes LSE to develop adequately.

Research Methodology

Our research study explored the nature of relational leadership and the leadership competencies that influence the doctoral supervisor–student relationship within the Canadian university context. The phenomenological research design was chosen as the most fitting methodology to answer our research questions. van Manen (1990) suggested that the phenomenological research design aims to explore the lived experiences of people in order to “better be able to come to an understanding of the deeper meaning or significance of an aspect of human experience” (p. 62).

Data Collection and Analysis

The interviews were conducted in the summer and fall of 2018 and included doctoral supervisors ($N = 16$). They were from different career stages: full professors ($n = 8$), associate professors ($n = 5$), and professor emeriti ($n = 3$) (see Table 1). The participants provided rich data on their lived experiences regarding the phenomenon under investigation—doctoral supervision—and saturation was reached after 16 interviews with supervisors.

Table 1.
Participants' Program/Demographics–Supervisors

Name	Disciplines	Age at time of interview	Years of experience	Number of doctoral students supervised /supervising
Noel	Social sciences & humanities	52	18	1
Randal	Social sciences & humanities	42	5	3
Rachel	Social sciences & humanities	62	5	7
Norman	Social sciences & humanities	60	7	12
Nigel	Social sciences & humanities	58	11	11
Lawrence	Social sciences & humanities	65	28	71
Henry	Natural sciences & engineering	49	12	2
Robert	Natural sciences & engineering	49	11	10
Dana	Natural sciences & engineering	66	25	7
Thomas	Natural sciences & engineering	70	28	12
Reina	Natural sciences & engineering	74	36	15
Nathan	Natural sciences & engineering	80	45	30
Samuel	Health sciences	50	11	3
Lance	Health sciences	63	35	11
Richard	Health sciences	74	44	26
Turner	Health sciences	71	41	30

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Data Collection

We recorded and transcribed all interviews verbatim, with all proper names and identifiers removed and changed to pseudonyms. We aimed to be attentive and tentative—“attentive to the data, and tentative in our conceptualizations of them” (Dey, 2003, p. 108). This meant that we needed to employ a close reading strategy in which we focused on the contents before generalizing our findings. We used the interpretation analysis method to explore the themes of the lived experiences of our participants (Reiners, 2012; van Manen, 1997). We verified our themes through constant revision of transcripts and memos and by comparing, reflecting, reading, rereading, coding, and recoding (Boeije, 2002).

Findings

The findings revealed that self-efficacy is a crucial element in the supervisory relationship for both students and supervisors because (a) the supervisors rely on their sense of efficacy—including research self-efficacy (RSE) and leadership self-efficacy (LSE)—to direct their students to achieve their goals and to build collective efficacy (CE); and (b) supervisors play a major role in developing, enhancing, or even decreasing their students’ sense of self-efficacy (SE).

Supervisors’ Lived Experiences and Perspectives

The data analysis revealed that supervisors developed their LSE as doctoral supervisors throughout the years. The findings also demonstrated how they helped their students develop or enhance their sense of SE and their RSE as well, and how they worked with them, which reflected the collective efficacy (CE). The findings in this section are organized under two main themes: (a) the supervisors’ sense of self-efficacy; and (b) the supervisors’ views on the students’ sense of self-efficacy (SE).

a) The supervisors’ sense of self-efficacy. The data indicated that supervisors have a high sense of RSE in their fields. As one noted: “I’m hired as a professor to be a public intellectual that will bring some dimension of . . . knowledge and expertise to a given area” (Randal). However, it was evident that their LSE was fundamental to their roles as doctoral supervisors in guiding their students to timely progress, hit their milestones, and complete their programs.

When people start new jobs, it is absolutely normal to have some kind of self-doubt or uncertainty, and the supervisors were no different. As one of them explained, “All of us starting out with the first few students are maybe a little bit concerned about how this is going to go” (Turner). Supervisors were mindful of the importance of continuous learning; one said, “I learn from every student and from all the students in the department and all my colleagues” (Dana). This openness to learn from all sources helped them learn a great deal about themselves, their strengths and weaknesses, and their students. In addition, because the supervisors were once doctoral students who made it all the way through their programs, their own doctoral supervisors were either good role models who helped them learn what to do in a supervisory relationship or bad role ones who showed them what not to do.

Samuel, for example, accredited that his PhD supervisor was a “very strong and effective mentor” and added, “there were a lot of—a number of aspects of that experience that were positive that I brought forward and I try [to] model . . . now as a supervisor dealing with students.” Samuel shared that he still counts on his past supervisor “as a close friend.” Moreover, he said, “She still

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continues to be a mentor for me, as, you know, in my—in my research and academic career. . . . That’s been very positive.”

Richard, who viewed “inclusivity” to be vital in mentorship, noted that his previous experience when he was a PhD student influenced the way he interacts with his students, and he added that it is *“the supervisor’s job to make it work. It’s not the student’s job to make it work.”* He elaborated on this point:

To make the relationship work, they have to put themselves out for it. . . . This is a—this is just a power scene, right? . . . We’ve both heard so many stories about supervisors taking advantage . . . of their students. . . . And if you’re the supervisor, you’re the one [who] has the power—is perceived to have the power—and it’s your job to behave responsibly. So, you know, that this is just a variation on that theme.

Dana had a negative experience when she was a PhD student. She had a selfish supervisor, and she explained that *“he wasn’t looking out for me. He was looking out for him.”* She spoke about how some supervisors could become *“kind of a bad role model”* and said *“he did not express his own weaknesses well,”* adding, *“I’m aware of my limitations, maybe from my own experience.”* Failing to express weaknesses—admit fault or ignorance, are key aspects in this toxic mentorship, which left Dana and other participants full of doubts, stressed out and impacted their trust in their supervisors when they were doctoral students. Thomas reflected on his PhD experience when he was a student. His *“supervisors totally ignored”* him, he believed this had “sharpened” him and taught him what to do and what not to do with his students.

These examples that the supervisors shared suggest how their deep reflections on their previous experiences contributed to their sense of LSE. Supervisors’ sense of LSE improved over the years with practice; one said, *“I know [and] . . . I’m fairly confident that I’m doing well,”* and consequently, *“I would say that I’m a different supervisor now than I was when I started”* (Dana). The experience they gained from supervising graduate students year after year strengthened their beliefs about their abilities as doctoral supervisors (their LSE). One explained that *“having . . . a positive experience . . . helps you to feel confident that you are providing good supervision and a good environment, in which [students] can work”* (Turner).

Over time, supervisors notably learned how to assist students with *“figuring out what their identity is in the profession”* (Lawrence) to aid them in uncovering their potentials which helped their students enhance their performance and maintain their well-being. They were aware that students’ projects were designed for the students themselves and their personalities, which means the students had a significant say in deciding their paths (Reina), and the supervisors’ job was to facilitate this progression rather than complicate it. As supervisors explained, their students were satisfied and motivated. These supervisors recognized very early on that students were different; when *“students run into trouble with supervisors,”* it is often because their supervisors do not acknowledge their differences (Samuel). Therefore, effective leadership behaviors and practices that helped supervisors guide their students and consequently contributed to their sense of LSE positively included the following: acknowledging and respecting the students’ individual differences; planning to *“guide them or show them things or lead them or somehow uncover their own talents so that they could do it”* (Reina); making themselves available to students; getting engaged with their ideas and work; listening to them; providing suggestions without belittling their ideas, empowering rather than micromanaging them; sharing their passion about *“advancing the field”* with their students (Richard); and encouraging dedication, momentum, and resilience.

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Unfortunately, it was quite obvious that most supervisors were not supported enough in their leadership roles as doctoral supervisors by their departments or universities. Randal highlighted the importance of supporting new professors before they take on doctoral students. He reflected that he is *“still developing as a doctoral supervisor,”* and that his university does not allow *“incoming professors to automatically supervise doctoral students.”* He reported that this is not the case in all universities because some allow *“tenure track assistant professors to supervise doctoral students.”* Randal elaborated that there needs *“to be a time where someone is mentored into that role”* because even his *“capabilities are still developing.”* This is understandable because newly hired professors need time to get to know themselves in their new roles. They need to psychologically adapt to comprehend that they are no longer students anymore, they need to get used to be sitting on the professor’s side of the table. They need to be assisted in their new roles by senior professors, encouraged, mentored, and granted time by their departments to reflect on their experiences as former doctoral students and start crafting their supervision philosophies in meaningful ways.

Norman agreed with what Randal suggested about the importance of having a system and culture that support supervisors in their leadership roles. Norman believed that what is missing in doctoral programs is *“that the supervisor is considered by some to be the expert on everything and they don’t seek help from others.”* This culture is problematic: no one knows everything and having a supervisor who is hesitant to ask for help when needed not only disadvantages the supervisor’s professional growth but also might lead some supervisors to misguide their students or offer them misinformation.

Thomas, who has been involved with hiring new professors, also criticized the process that only asks candidates to provide a *“teaching philosophy or teaching statements,”* which are *“just . . . statements on a piece of paper”* that do not provide evidence that the candidate can teach. This perspective sheds light on the importance of the supervision philosophy as well, which should clearly explain how candidates view their jobs as leaders who will work four or more years with heavily invested parties—the students—to help them develop into independent researchers. More importantly, these newly hired professors were not asked in the hiring process what they learned from their supervision experiences as former doctoral students, which could have given them the chance to be mindful of the impact of their own experiences when they started supervising students themselves. This is not to suggest that they would not independently do this kind of reflection if they were not asked during the hiring process. Nor to weed out people who learned nothing; but rather the opposite. Assuming that they learned something, asking them during the hiring process encourages them to remain mindful of how their previous experiences would impact their supervision styles. Thomas went further and elaborated on another key issue in the hiring process, which is the financial skills that supervisors need to run their research projects successfully:

There’s no evidence that people know how to balance a budget and spend [grant] money without running out, and that’s a big issue with professors at some point. So, it’s interesting; the university process doesn’t really examine some of the more important aspects of being a professor.

Nathan provided a comparable perception about the importance of spending grants without running out of money. He added that getting grants is key to his chemistry students (though it is not the case for all disciplines). His perspective shows how getting grants helped his doctoral students and contributed to his sense of LSE: *“What you seem to call ‘efficacy’ is basically what I call the ability to attract grants. . . . It’s chemistry. You can’t—you cannot have a PhD student without having funding.”* He had a record of success over the 45 years he supervised doctoral students, which made

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them feel like they were in safe hands and made him feel good about his efforts while enhancing his sense of LSE.

Lance shared a related viewpoint, which shows how getting grants added to his sense of LSE. He reported that his students “*really never had to worry about how much it costs to do something. They’ve always been told if it’s worth doing, we do it. . . . I can get research money.*” Lance’s confidence in getting grants and his sense of LSE allowed his students to focus on their work and thrive rather than worry about how to survive.

Nathan offered his wisdom by underlining how current supervisors are under pressure and compared the present situation to the 1960s and 1970s, when it was much easier to get funds, and this was “*a tremendous positive in the sense that it gave us confidence that we knew we had money, . . . and somebody thought we had a good idea.*” In contrast, “*currently, NSERC [Natural Sciences and Engineering Research Council of Canada] only funds about 50 percent of the new. . . . people who start as assistant professors*”; for those who do not get funded in their first year, it can be “*psychologically very difficult.*” Funding options in the doctoral world in Canada is outside the scope of our research, but the important point here is that it is one of the elements that can influence supervisors’ LSE.

Generally speaking, the data have shown that there are some obstacles that could prevent doctoral supervisors in general from developing their sense of LSE and helping their students’ progress; these include not being mentored when they are first hired or even not receiving leadership training, being considered people who should not ask for help, and getting grants and spending money on research projects without running out, which are all serious sources of pressure. These poor departmental systems and cultural issues show how the supervisors’ sense of LSE—and thus the whole doctoral supervisory relationship—are influenced by contextual factors.

b) The supervisors’ views on doctoral students’ SE. Supervisors emphasized the importance of self-efficacy for doctoral students to develop, produce novel and innovative ideas and be independent researchers, which includes both SE and RSE. The supervisors reported how some students started the program with a low sense of efficacy: “*[The] first time, everybody’s nervous, [and] there’s a lot of self-doubts*” (Thomas), and how the supervisor’s role as a “*positive force*” is essential to build their sense of SE and RSE (Richard). The following interview script illustrates how supervisors were attentive of their active roles to enhance their students’ sense of SE and RSE:

“My aim is to get them from the point of not really knowing what it’s all about when they first come into the testing: to the point where they can confidently do their own work without me having to have much input at all.” (Thomas)

To do so, supervisors made sure to make themselves accessible, approachable and psychologically present. They were keen to build mutual trust with their students, and they applied hands-on and hands-off approaches based on their students’ individual needs. They mentored and trained their students to acquire research and inquiry skills as well as self-evaluation. They got them to experience achievements quickly because “*once they have some early success, they will start to feel comfortable that they themselves are capable of producing research*” (Nathan). They also provided their students with learning opportunities and different responsibilities.

Additionally, they created a positive culture that allowed them to work with their students to set mutual objectives, plans, and strategies to execute these plans, while fueling their joint beliefs with positive language concerning their ability to hit milestones and thrive. In this positive culture, their students were satisfied and they clearly exhibited high performance and maintained their well-

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being. These supervisors offered their students assurance and encouragement, and they used optimistic language that uplifted and motivated their students. Their feedback was constructive, clear, and honest, and it allowed students to learn from their mistakes and improve their work. The supervisors showed their enthusiasm, and they mentored their students to be successful not only in their doctoral programs but beyond them.

Supervisors noted that they were not the only source of information or knowledge for their students, who were surrounded with valuable knowledge and expertise both within and outside their departments. Accordingly, supervisors encouraged their students to “*get assistance and help not only from the supervisor, but from elsewhere*” (Norman), and they reported the importance of having “*the ability to connect people . . . with their experiences and connect with colleagues*” (Nigel) to build connections that expanded their horizons. Some reported that “*one of the most interesting things about training students is that they learn as much more from each other [as] they do from [us]*” (Thomas), which is viewed as “*part of the success of operating a lab*” (Turner), and they all demonstrated to their students how learning is a lifelong journey. The supervisors’ beliefs about their roles as “*positive forces*” and their practices of offering genuine support and building a positive culture as well as learning from all sources and networking were effective at creating CE and enhanced their own sense of LSE.

Our findings have pointed to five types of efficacy in the doctoral supervisor context. Two of them were related to students: SE, which was associated with students’ general beliefs about their abilities to complete the different requirements of the programs, and RSE, which was related to students’ beliefs about their abilities to conduct research. Another two were related to supervisors: RSE, which they had already developed in their fields, and LSE, which was associated with their beliefs about their abilities to lead their students to achieve their goals and timely graduate. The last one was CE, which concerned how supervisors and students shared mutual beliefs about their abilities to work together and accomplish their desired outcomes.

It is apparent that the central type of efficacy in the doctoral supervision context is LSE. When students had supervisors who demonstrated positive behaviors that indicated their sense of LSE, CE emerged, and students were satisfied with their performance and well-being. When supervisors exhibited negative behaviors (as supervisors explained when they were doctoral students) and failed to demonstrate a sense of LSE, their students were confused and experienced ambiguity, a lack of trust, and anxiety.

As the participants’ results exhibited, their sense of LSE was mainly developed through experience, active learning, and deep reflections on how they had been supervised when they were doctoral students themselves. A few mentioned receiving some kind of mentoring before they started accepting doctoral students, but there did not appear to be any kind of supervision training or leadership programs provided by their universities when they started. This means that the process was more of a “sink or swim” exercise, and the first few students were experimental ones. Moreover, it seems that getting grants (in some disciplines) and spending the money without running out were sources of pressure on supervisors that might impact their sense of LSE.

In spite of all of the departmental challenges highlighted above—which some are outside of the scope of this research—ethical, committed, and optimistic supervisors showed a high sense of LSE. They were always accessible, approachable and psychologically present. They managed to master the knowledge, skill, and wisdom of guiding students to achieve their milestones and goals while maintaining their resilience and well-being. These supervisors—who were people-oriented, mindful of their experiences (whether positive or negative), passionate about their disciplines, and

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enjoyed a growth mindset—found different ways to enhance their students’ sense of SE and RSE. Their effective techniques included appreciating, accepting and understanding their students’ differences; offering hands-on and hands-off approaches; providing them with constructive feedback, assurance, learning opportunities, responsibilities, and connections; and allowing them to enjoy “some early success” (supervisor Nathan), while learning from mistakes. These supervisors also exhibited positive beliefs, behaviors, and attitudes while using positive language.

Discussion and Conclusion

Examining how supervisors think and feel about themselves and their abilities (self-efficacy) is a major area in this research because their beliefs about themselves in terms of whether they can or cannot succeed were found to be a big influential factor in the supervisory relationship.

Supervisors reported enjoying a high sense of LSE in the three main areas of setting directions, gaining students’ commitments, and overcoming obstacles to change (Paglis & Green, 2002). The supervisors’ beliefs about their abilities as leaders and the impact of their beliefs on their performances are consistent with a growing body of literature that examined LSE as an antecedent of leadership effectiveness, leadership behaviors, change leadership, and motivation to lead (Chemers, Watson, & May, 2000; Hannah, Avolio, Luthans, & Harms, 2008; Hoyt, 2005; Kane, Zaccaro, Tremble, & Masuda, 2002; Lester, Hannah, Harms, Vogelgesang, & Avolio, 2011; Murphy, 1992; Ng, Ang, & Chan, 2008; Paglis & Green, 2002).

The supervisors’ LSE was translated into effective leadership behaviors and practices as well as positive language, which allowed CE to emerge naturally and helped both parties (supervisors and students) put in sincere effort and earnest commitment to achieve goals and complete the programs successfully while maintaining their well-being.

Their LSE included their beliefs in their abilities: (a) to make themselves accessible (regardless of their workloads), approachable (in spite of their different personalities), and psychologically present (irrespective of their other responsibilities); (b) to create trustworthy supervisory relationships; (c) to mentor, coach, sponsor, and enable their students rather than disable them, and to be facilitators rather than complicators.

Research suggested that “managers who had less belief in their ability to engage and involve others [low Involve LSE], tended to invest more physical and mental energy on the job.” (Anderson, Krajewski, Goffin, & Jackson, 2008, p. 605). This means that observing a supervisor investing in engaging activities does not necessarily mean they have high *involve* LSE unless they express their high *involve* LSE explicitly. However, their sincere efforts in trying to invest time and energy in engaging activities indicates their willingness and openness to learn and make it work.

Anderson et al. (2008) built on Paglis and Green’s (2002) work and their definition of LSE and conducted the first empirical research that examined the relationship between LSE and leadership effectiveness. They found that leaders’ self-efficacy (managers’ self-evaluations of perceived competence) were

highly related to raters’ descriptions of their effectiveness in a variety of areas—providing support to the hypothesis that one’s beliefs about leadership ability is related to one’s leadership effectiveness, as judged by others. (p. 604)

Moreover, research has suggested that leaders with a high sense of LSE could be specifically identified when confronted with challenges, or when their followers face complex situations. These

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leaders are effective, remain calm under pressure, and manage to solve problems (Bandura & Jourden, 1991; Bandura & Wood, 1989).

Consistent with other studies, Anderson and colleagues (2008) concluded that leaders with higher LSE are more effective than those lower with self-efficacy (Bandura & Jourden, 1991; Paglis & Green, 2002). Bringing what they learned as former doctoral students—their past experience (Bandura, 1995)—into practice was valuable to the supervisors' LSE. Whether their supervisor was “kind of a bad role model” (supervisor Dana) or an effective leader (supervisor Samuel), it is apparent that being mindful about those experiences made a difference to their behaviors and LSE. This confirms what other studies proposed on how supervisors' styles are influenced by the way they themselves were supervised.

Generally, these findings suggest the importance of the leaders' beliefs about their abilities to reflect on, and be mindful of their past workplace experiences before they were promoted into their leadership roles (*reflect/mindful* LSE). More specifically, in effective doctoral supervision, several studies proposed that supervisors can develop themselves through reflection (Emilsson & Johnsson, 2007; Guerin, Kerr, & Green, 2015; Pearson & Brew, 2002; Turner, 2015). Therefore, examining the *reflect/mindful* LSE dimension empirically is necessary, especially in the doctoral supervision context.

The fact that LSE can influence the students' performance and well-being is a serious matter; it can put them on the right track, drift them away and waste their precious and costly time, or leave them working hard to deal with it on their own. As a result, the students' challenge to perform to their full potential, coupled with their frustration from being misguided, can impact their well-being. Not all students know how to cope or be resilient, so it is dangerous to have a system or culture that considers supervisors' leadership role to be a “sink or swim” approach.

We may need to bear in mind that many newly hired supervisors are effective, while some experienced ones are not. Therefore, the quality of supervision cannot be measured by the number of years professors spent in supervising doctoral students. Having said that, we still argue that in Canadian universities (and in other countries that may have the same issues) professors need to be mentored and gradually move into their doctoral supervision roles (as supervisor Randal suggested), and they need to be equipped with leadership programs or trainings to build their LSE—especially the newly hired ones. It is imperative to include psychological topics in these programs so supervisors can support their students better—especially since doctoral supervisor job is an intense human service that needs to be approached from a psychological background. This is not only for the students' benefit but also the supervisors for supervisors.

We also argue that preparing supervisors in Canadian universities (and in similar contexts) does not start when professors are hired; rather, it should start while they are still doctoral students. Therefore, offering mandatory supervision courses to all doctoral students—even those who do not plan on pursuing academic career—would help doctoral students while still in the program, as well as those of them who would eventually enter professorship.

Wright, Murray, and Geale (2007) reported how some universities conduct “supervisor training and accreditation courses” to improve their competencies (p. 459). Moreover, Halse and Malfroy (2010) shared that “one of the five themes for doctoral training in Europe was identified as ‘improving the supervision of PhD candidates, particularly through better training and monitoring of supervisors (p. 80).’” In fact, some countries offer courses in supervision and make supervision training mandatory in universities. For example, according to Emilsson and Johnsson (2007):

courses in research supervision for supervisors have been given at more and more universities in Sweden and the government has proposed that ‘institutions of higher

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education with postgraduate programmes must offer training in supervision'. . . , A newly published report, A new doctoral education . . . also states that at least one of a doctoral student's supervisors must have attended the special course required. (p. 106)

Our findings suggest that only a few supervisors received some kind of mentorship to support them before they started their jobs. We do not assert that this is common across Canada; however, the lived experiences of our participants may suggest that following the Swedish approach could be a valuable option to consider.

It is clear that the sense of LSE in Canadian universities (and potentially in other countries) is influenced by several obstacles that could prevent doctoral supervisors from developing their sense of LSE and helping their students' development. From a lack of mentorship opportunities and leadership trainings to getting grants and/or spending money on research projects without running out, there are many serious sources of pressure. Another barrier is a cultural one when supervisors are considered experts who should not ask for help. These limiting departmental systems and cultural issues which contribute to the supervisors' LSE and thus the whole doctoral supervisory relationship suggest that supervisors need more help, understanding, and support in their roles.

Finally, we note the limitations of this study. The findings in this article are limited in their generalizability due to the qualitative study design, a small sample size, and contextual parameters. In addition, this article did not include students' perspectives; we suggest that in-depth study of students' perspectives or comparative analysis of supervisor and student perspectives will further enrich our study's findings.

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