

Innovation in leadership education: inquiry-based pedagogy

Innovation in
leadership
education

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Abstract

Purpose – The purpose of our research is to better understand inquiry-based pedagogy in the context of leadership education. Specifically, we sought to learn about how leadership learning is characterized in an immersive inquiry course, and how inquiry-based pedagogy is experienced by students engaged in interdisciplinary leadership learning.

Design/methodology/approach – We used a case study approach as an overarching methodology. The research methods employed to collect data were World Cafe and episodic narrative interview. Further, we used collocation analysis and systematic text condensation as analytical strategies to interpret data.

Findings – Our findings led us to four primary conclusions: (1) inquiry-based learning helps to foster an inquiry mindset amongst leadership education students; (2) the challenges and tensions associated with inquiry-based learning are worth the learning gains for leadership students; (3) the opportunity to learn in relationship is beneficial for leadership development outcomes and (4) students' experiences of inquiry-based learning in leadership education often included instances of transformation.

Research limitations/implications – Limitations of the research were: (1) it is a case study situated within a unique, particular social and educational context; (2) demographic data were not collected from participants, so results cannot be disaggregated based on particular demographic markers and (3) the small sample size involved in the study makes it impossible to generalize across a broad population.

Practical implications – This research has enabled a deep understanding of structural and relational supports that can enable effective inquiry-based learning in leadership education. It also offers evidence to support institutional shifts to inquiry-based pedagogy in leadership education.

Social implications – Our research demonstrates that use of inquiry-based pedagogy in leadership education has long-lasting positive effects on students' capacity for applied leadership practice. Consequently, participants in this type of leadership learning are better positioned to effectively lead social change that is pressing in our current global context.

Originality/value – There is scant (if any) published research that has focused on using inquiry-based pedagogies in leadership education. This research makes a significant contribution to the scholarship of leadership education.

Keywords Leadership education, Leadership pedagogy, Inquiry based learning, Inquiry pedagogy

Paper type Research paper

Introduction

Humanity is experiencing an unprecedented emergence of complex social issues and wicked problems. In parallel, recent decades have witnessed a shift in higher education, where colleges and universities are beginning to focus more intently on their civic purposes in

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addition to the mandates of disciplinary knowledge generation (Brown, 2005; Chan, 2016; Saltmarsh & Hartley, 2011). Implicit in this shift is the notion that college or university education should better prepare students, not only for productive work lives, but to engage as social changemakers and global leaders. However, wide-scale changes to the purposes and practices of higher education require what is often construed as a risky proposition: facilitating a shift of power away from institutions and toward individuals, and consequently enabling students to play a predominant role in defining the educational agenda (Ikenberry & Kuh, 2015; Saltmarsh & Hartley, 2011).

Current standards of university pedagogy, comprised primarily of didactic or lecture-based instruction, are increasingly seen as doing a disservice to students by failing to prepare them adequately for work, civic, social life, and leadership roles (Ikenberry & Kuh, 2015). Additionally, status quo modes of educational delivery prevent students from assuming agency in their own educational processes; they reinforce the power differential rather than leveling it. Despite a robust literature that demonstrates the efficacy of shifting toward learner-focused pedagogy (Doyle, 2011), wide-scale adoption of student-centered teaching and learning strategies appears to be relatively rare.

Leadership education is perhaps one of the most important disciplinary areas in which to consider a shift toward pedagogies that break away from the didactic status quo (Armstrong & McCain, 2021; Ayers, Bryant, & Missimer, 2020; Turner & Baker, 2017). However, there is currently a dearth of evidence to substantiate the effectiveness of alternative pedagogical approaches. The research presented here offers evidence to this end, and in turn supports adoption of inquiry-based pedagogies in postsecondary institutions, particularly in leadership education.

Leadership education

Leadership education has traditionally been a contested field of practice, encumbered by varying definitions of leadership, a lack of evidence-informed practice, and conflation of leadership education and professional development. However, there is widespread agreement that effective organizations, development of innovative practices, and salient social change efforts are all contingent on effective leadership (Chunoo, Beatty, & Gruver, 2019; Wallace, Torres, & Zaccaro, 2021). Scholars also recognize that leadership skills must be taught, and that individual, collective, behavioral, relational, cognitive, and affective learning outcomes are required as a part of effective leadership education (Moldoveanu & Narayandas, 2019; Wallace *et al.*, 2021; Zaccaro, Green, Dubrow, & Kolze, 2018). Although there is disagreement about how these outcomes might be best achieved, research and meta-analyses point toward the following learning outcomes as central to effective leadership education: creative thinking, problem solving, critical thinking, flexibility/adaptability, self-regulation, reflection, communication, collaboration, persistence, an ethic of responsibility, and ability to learn (Zaccaro *et al.*, 2018).

A dramatic shift in the pedagogy of leadership education is required for students to meet learning outcomes that enable them to engage in effective leadership practice regardless of personal or professional context. Although leadership education has evolved to become a mainstay in post-secondary programs of study, approaches to teaching leadership have relied on knowledge transmission and remained relatively static over the past half century (Ayers *et al.*, 2020; Collinson & Tourish, 2015). As our need for global leaders shifts and changes, so ought our leadership pedagogy: “This requires engaging students in a praxis of dialogue and action that help them deconstruct themselves and the world they live in, transgressing boundaries and creating pathways to participation and shared meaning making” (Ayers *et al.*, 2020, p. 1).

Inquiry-based learning

Inquiry-based learning is a pedagogical approach that inverts conventional, didactic teaching by fostering a learner-driven educational environment. Though it is reported to take several different forms, researchers claim that inquiry-based learning typically involves several (or all) of the following elements: (a) learner-centered design, where students are actively involved in defining and shaping the learning process; (b) a process of asking and seeking answers to questions as the core of the pedagogical approach; (c) collaborative learning amongst students that is characterized by dialogue and sharing; (d) opportunities for learners to apply knowledge and skills in concrete ways; (e) opportunities for learners to engage with “messy” problems, questions, or issues; and (f) learning that is organized around the development of a tangible outcome (Aditomo, Goodyear, Bliuc, & Ellis, 2013; Archer-Kuhn, Lee, Finnessey, & Liu, 2020; Justice, Rice, Roy, Hudspeth, & Jenkins, 2009a, Justice, Rice, & Warry, 2009b; Laursen, Hassi, & Hough, 2016; Lazonder & Harmsen, 2016; Lee, 2012; MacKinnon & Archer-Kuhn, 2022; Pedaste *et al.*, 2015; Spronken-Smith & Walker, 2010; Spronken-Smith, Walker, Batchelor, O’Steen, & Angelo, 2011). Inquiry-based learning can be pragmatically applied in multiple forms: as (a) a single activity within a lesson, (b) a sequence of instructional practices within a course, (c) the philosophical foundation for an entire course (“immersive” inquiry-based learning), or (d) the scaffolding for a broader program of study (Justice *et al.*, 2009a, b). Practitioners can also choose a variety of structural approaches to inquiry-based learning processes, building in intentional inductive, deductive, and retroductive inquiry strategies throughout iterative inquiry cycles (Pedaste *et al.*, 2015).

Inquiry-based learning is better understood in primary and secondary educational environments than it is in higher education (see, for example, Friesen & Scott, 2013). The bulk of research about inquiry-based learning in postsecondary contexts has been focused on specific approaches within discipline-specific domains. Little has been documented regarding optimal structures for inquiry-based learning, broadly applicable inquiry-focused teaching and learning strategies, the nature of learning outcomes arising from inquiry-based learning, interdisciplinary inquiry-based learning, or individual experiences of inquiry-based learning. Of particular concern is the absence of student voice in higher education inquiry-based learning research; although there is some research focusing on students’ assessment results, there is very little to indicate how students navigate or interpret inquiry-based learning experiences.

Within the context of the shifting purposes of higher education, and considering the postsecondary sector’s call for meaningful leadership learning opportunities, inquiry-based learning is a pedagogical approach with great potential. There is an emerging body of research in higher education that has worked towards demonstrating links between inquiry-based learning approaches and enhanced student learning in a variety of disciplinary areas (for example, Brown, 2005; Laursen *et al.*, 2016). Despite this effort, however, there are few consistent descriptions of how inquiry-based learning is expressed in practice (Lazonder & Harmsen, 2016). We have scant evidence about the learning that is generated as a result of inquiry-based learning experiences. While student performance has been shown to increase according to quantitative metrics, this tells us little about the composition, quality, or meaning of student learning that emerges from inquiry-based educational efforts. Finally, there has been little research conducted to examine the ways that inquiry-based learning is affectively experienced, in a way that moves beyond simple measures of satisfaction or individual testimonials.

Context

Our research was conducted at a mid-sized medical-doctoral university in Western Canada with approximately 30,000 undergraduate students. The university recently piloted an

undergraduate certificate comprised of four interdisciplinary courses focused on exploring and generating solutions to global challenge issues. These courses were structured around a flagship pedagogy of inquiry-based learning and were accessible to any undergraduate student on campus as electives in their discipline-specific programs. Learning objectives in each course were focused on leadership development goals and included outcomes such as: information literacy, reflective practice, critical thinking, perspective taking, problem solving, personal development, and resilience.

The research presented here focused on the first course in the series, which was offered during students' first term of their first undergraduate year. The course ran over a thirteen-week term and was organized roughly in two halves: (a) six weeks focused on better understanding a complex global challenge issue, and (b) seven weeks working both individually and collaboratively to design a proposal to address the global challenge issue in a small but meaningful way. The pedagogical approach was inquiry immersion, meaning that there was no formal content in the course and students directed their own learning. Instructors provided facilitative support, opportunities for skill building, and directed students to centralized resources; there was little to no traditional lecture time at any point during the course. Other active interest holders in each course included: (a) an embedded librarian, who attended classes regularly and offered information literacy supports to students in real-time (Murphy, Koltutsky, Lenart, McClurg, & Stoeckle, 2020); a peer mentor, who served as an advisor, facilitator, and point of contact with the students and instructor (Colvin & Ashman, 2010); and (c) community partners who volunteered to consult with students during their community-engaged projects.

Research design

Although the research was initiated and designed at the outset by the primary investigator, it evolved into a collaborative project (Lieberman, 1986) with several partners. The primary investigator on the project was the course developer, who had served as an instructor for three iterations of the course. A graduate researcher, an undergraduate researcher (a past student in the course), a program coordinator, a peer mentor, and librarian partners all served as collaborators on the project, with regular participation from other instructors, students, and community members. Elements of the research design, including questions, methods, and analytical strategies shifted over time due to the ongoing dialogue amongst project partners. We report here on the final status of the project, but it is important to know that many design elements were emergent.

The overarching purpose of our research was to better understand the phenomenon of inquiry-based learning as it is expressed within the context of a first-year interdisciplinary course focused on leadership development and an exploration of global-level challenges and issues. Specifically, we aimed to answer the following questions:

- (1) How is leadership learning characterized within an immersive, interdisciplinary inquiry-based learning course?
- (2) How is inquiry-based learning experienced by students within an immersive, interdisciplinary inquiry-based learning course?

Our dual aim was to generate knowledge about inquiry-based learning in leadership education and to develop a suite of practical resources for use in inquiry-based learning implementation.

Theoretical framework and methods

Our research is grounded in a critical realist ontology, or a belief that an objective reality exists, but that we all perceive and make meaning from reality differently (Mueller, 2015).

This ontological positioning allowed for multiple understandings of knowledge creation to inform our collaborative methodological and analytical choices. We used a case study approach as an overarching methodology, which is a research strategy that aims to investigate a phenomenon within its “real-life context” (Yin, 2003, p. 13). In this instance, the phenomenon of interest was inquiry-based learning, and the case was defined by the contextual conditions of the implementation of the global issues leadership course where we implemented immersive inquiry-based learning pedagogy. This case was inclusive of the face-to-face class time, instructor preparations, student group work inside and outside of class time, assessment of student learning, and all other activities associated with the enactment of the course. Our study examined two separate iterations (cases) of the course, and was inclusive of all sections, students, and instructors within each iteration. The research was approved by the institution’s Research Ethics Board.

The first research method used in the case study was World Café (Brown, 2005; Prewitt, 2011), which is a collaborative inquiry process where participants engage in collective sense-making about their experiences through their engagement in a series of roundtable conversations that are driven by a set of structured questions. The World Café processes we used during this project were intended to enable participants the opportunity to describe and debrief their experiences with and perceptions of inquiry-based learning. We hosted a total of three World Cafés that ranged in size from 3 to 17 participants each; overall, this represented an approximate participation rate of 30% of eligible students. Participants were students who had recently completed the first-year, interdisciplinary, inquiry-based learning course constituting our case study. The researcher who hosted the world cafés produced field notes and post-session analyses along with photographs of the participants’ notes.

We then used episodic narrative interview (Mueller, 2019) in a second phase of data collection. Episodic narrative interviews are face-to-face interviews where participants provide storied accounts of their experiences with a social phenomenon in the context of a bounded situation or episode. The episodic narrative interview protocols were designed to help us uncover more about how students characterized the learning that they engaged in during the immersive inquiry-based learning course. We conducted 12 interviews that ranged from 40 to 80 minutes in length; interview participants were students who had recently completed the first-year, interdisciplinary, inquiry-based learning course that created the parameters for our case study. The interviews were conducted by a researcher at arms-length from the course to ensure there was no undue influence on participant responses, and transcripts were later de-identified to protect participant confidentiality.

We embedded a reflexive inquiry cycle within the study, where the two qualitative methods were applied in the same manner during each case, or iteration, of the course delivery. Both methods were used for the purpose of generating “thick descriptions” of the inquiry-based learning phenomenon. Thick description refers to “explicit consideration of the many aspects inherent in the expression of phenomena, including context, speculation about intention and meaning, the evolution of behavior or activity, and emotion and social interaction” (Mueller, 2013, p. 131). As a result, we were better able to interpret the complex and situated realities pertaining to inquiry-based learning that were expressed during the delivery of the course (Ponterotto, 2006), and to discern the patterns that exist amongst experiences.

Results

We analyzed the data collectively and iteratively over a two-month period. We used analytical strategies including collocation analysis (Mello, 2002) and systematic text condensation (Malterud, 2012) to make sense of the interview and World Café data. Although the intent was not comparative, we sought to find points of connection and patterns amongst

the data that would help to uncover the complex, socially constructed reality of inquiry-based learning as it is situated in an interdisciplinary leadership development course.

We organized the data that emerged from interviews and world cafés into seven thematic areas: (1) tensions, (2) evidence, (3) collaboration, (4) affective responses, (5) process, (6) reflection, and (7) learning (Table 1). We sorted the data from each theme into two categories: beneficial or challenging. The sorting was not intended to ascribe positive or negative value to the data; instead, we used this approach to begin to characterize students' experiences of inquiry-based learning pedagogy according to their own narratives. Some of the elements within each theme were categorized by student participants as both beneficial and challenging. We consistently cross-checked our themes and sorting mechanisms to ensure that individual biases were expressed and discussed during analysis.

RQ1. How is leadership learning characterized within an immersive, interdisciplinary inquiry-based learning course?

Many conceptions of learning have been explored in psychological and educational literature, but scholars generally agree that learning can be broadly characterized as “a process that leads to change, which occurs as a result of experience” (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010, p. 3). The change referred to is cognitive in nature, and may influence a person's knowledge, behaviors, or attitudes. The most common learning taxonomy was introduced by Bloom and colleagues (In Anderson & Krathwohl, 2001; Bloom, Krathwohl, & Masia, 1956). Bloom (1956) suggested that there were lower levels or domains of learning, such as remembering and comprehending, that require minimal cognitive complexity but which need to be mastered by an individual in order for them to achieve more complex, higher order learning outcomes such as application, analysis, or evaluation. Given current understandings of what constitutes learning, we examined the data for patterns that would help us answer our [first research question](#): How is leadership learning characterized within an immersive, interdisciplinary inquiry-based learning course?

Tensions

First, and perhaps most strikingly, the thematic element of tension emerged most frequently when participants were conveying narratives about learning. Participant One summarized the tension succinctly during their interview: “I find [the course] to be very open ended, which sometimes is really good and sometimes makes [it] really challenging.” Similarly, Participant Four indicated that “. . .the final outcome was really impressive, because I surprised myself on what I had actually learned.” However, they also described the learning as stressful and anxiety-provoking because, “you don't really know exactly what you're supposed to be doing.” Although some participants did view the tensions they experienced during learning as problematic, most identified the tension as ultimately productive: “. . .it was difficult. . . [but] it turned out pretty well” (Participant Two).

Higher order learning and knowledge transfer

Many participants in interviews and world cafés described engaging in higher-order learning during their inquiry-based learning classes; descriptors spanned across the thematic elements of affective responses, process, and learning. Participant Four noted, “. . .it wasn't just like a normal class where you memorize something, you take an exam, and then it's gone. Like, it will stick with me forever.” Participant Seven's reflections on their learning were much the same:

The field I'm going towards, it's all about terms. You learn about terms, great. You're going to have those in your mind. Cool, whatever. But I feel like in [this course] you are actually learning things that you are going to use for the rest of your life.

	Beneficial	Challenging
Tension	<ul style="list-style-type: none"> • No right or wrong answer • Open-endedness – freedom • Could not predict learning • Non-competitive class in competitive program 	<ul style="list-style-type: none"> • Ambiguity regarding grades • “Floaters” in group work • Assumptions versus reality • Time constraints for deep exploration • Open-endedness – confusion • Could not predict learning • Course outline did not reflect reality • Non-competitive class in competitive program
Evidence	<ul style="list-style-type: none"> • Learned to identify bias • Skill to distinguish types of evidence • Multiple perspectives • Gathering/visualizing evidence • Presenting/substantiating evidence • Can support arguments • Building research habits • Asking questions • Leads to solutions 	<ul style="list-style-type: none"> • Determining what is relevant
Collaboration	<ul style="list-style-type: none"> • Close relationships • Learning reflected different ways in a group • Interconnected • Cohesive • Constructive • Interdisciplinary • Fostered teamwork skills 	<ul style="list-style-type: none"> • Dominant leaders take over • Absent group members • Inequities amongst group members • Group work difficult for introverts
Affective Responses	<ul style="list-style-type: none"> • Fun, enjoyable • Surprised myself • Pride in the work • Gratification • Accomplishment • Increased confidence • Invoked curiosity • Passion in learning 	<ul style="list-style-type: none"> • Frightening at times • Daunting • Rushed • Ambiguity was stressful • Overwhelming • Confusion • Annoyed
Process	<ul style="list-style-type: none"> • Learning to come up with ideas (brainstorming) • Strong engagement in process • Finding a variety of solutions • Immersive • Skill development • Opportunity to discover things • Guiding own learning • Innovative thinking • Learned about leadership • Inquiry mindset 	<ul style="list-style-type: none"> • “Good” seen as good grade • Procrastination • Had to back-track • Confusion in process • Inquiry mindset
Reflection	<ul style="list-style-type: none"> • Eye-opening • Learned about self • Personal development • Impacted my identity • Reflection as evidence of learning • Reflection led to better understanding 	<ul style="list-style-type: none"> • Reflection is hard • Not sure how reflection “counted” • You can take information how you want to • Too much reflection

(continued)

Table 1.
Data categories and themes

	Beneficial	Challenging
Learning	<ul style="list-style-type: none"> • Learning translated into reality/application • Control over my learning • Broadened perspectives • Transferrable skills • Different leadership styles and skills • Importance of communication adjustments • Research skills/finding evidence • Importance of context • 24/7 learning, in and out of classroom • Non-traditional, non-linear • Interactive • Learning from mistakes • Not memorization 	<ul style="list-style-type: none"> • Difficult • 24/7 learning, in and out of classroom • Non-traditional, non-linear • Interactive • Learning from mistakes • Not memorization

Table 1. Source(s): Credit by authors

Participants described their learning in the inquiry-based course as complex, interconnected, personal, skill-based, transferable, and applied. Both interview and World Café participants emphasized how their learning was carried over into their other courses, where such skills were not explicitly taught: “I’ve used. . . habits and stuff that I got from this course in every other course that I have” (Participant Six).

Relational

Leadership learning in an inquiry-based class was characterized as inherently relational. Students considered several aspects of relationality as key to their learning, including: (a) collaborative and/or social learning with peers; (b) learning from the instructor in a coaching relationship; and (c) learning alongside resource people such as peer mentors, librarians, and community members who had developed relationships with the students. Participant Two described their relational learning emphatically: “I think that was a huge benefit of the course is to have, not only relationships with your peers that formed, but relationships with your prof that formed. I think that was instrumental for a lot of us.” Participant Nine spoke to the relationships between instructor and support team:

. . . [the instructor], the librarian, and peer mentor, they didn’t all occupy the same position. So we were able to go to each of them and ask questions about what they were tailored to support us with. And I liked how it was so collaborative. . . I enjoyed having them all there.

Participant One referred to group work with their peers as a “phenomenal collaboration;” Participant Six stated, “it is nice to have a class space where you can talk to other people and work with other people and you’re not alone in your learning;” and several world café participants indicated a preference for working in relationship rather than independently.

RQ2. How is inquiry-based learning experienced by students within an immersive, interdisciplinary inquiry-based learning course?

We acknowledge that experiences of inquiry-based learning were intrinsically tied to the ways in which learning was characterized. Thus, there are many points of connection as we aim to answer our [second research question](#): How is inquiry-based learning experienced by students within an immersive, interdisciplinary inquiry-based learning course? The ways students described their experiences fell primarily within the affective, tension, and reflection data themes, but at times touched each theme we have identified.

Emotional responses

Students talked about how they felt as they engaged in the inquiry-based learning course; this routinely crossed emotional and cognitive boundaries and illustrated ongoing tensions for students throughout their experience. Participants referred to this tension in snippets throughout both interviews and world cafés: “. . .it was enjoyable. . . until about that time when I was like holy crap I still have to do so much work and then it made it stressful which made it less enjoyable” (Participant One); “It was beautifully highlighted but also pretty hard and confusing” (Participant Two); “I was really stressed out. . . [but] once I finished it, I was, like, “This is actually a really cool project. . .” (Participant Four); “It was frightening. . . [but] it was reasonable” (Participant Five); and “The course was fun and built on passion, but the ambiguity was difficult and unexpected” (World Café summary). Generally, students alluded to elevated stress, anxiety, and difficulty early in the course, but then “. . . got a lot out of the course that I would have never expected” (Participant Seven).

Conflation of learning and experience

Participants often conflated learning with how they experienced the course. This was illustrated most clearly by Participant One:

Not necessarily what you learned is what we're focusing on, just what you personally got out of it. It might not be that you learned about straight up facts about food insecurity, maybe learned how to public speak or maybe you learned really well how to collaborate in a group.

Participant Two shared a similar reflection:

It was just little moments throughout the course, which were really good actually, where I learned more about. . . my classmates, I learned more about myself and my abilities, which was really great and so just all together, [the course] itself was a moment.

The interview and world café students seemed to be engaging in sense-making related to their re-imagining of what it meant to learn and how learning was experienced. Learning was described in tandem with several other experiences, including relating, reflecting, gaining life lessons, collaborating, and investigating.

Inquiry mindset

Students summarized their experience in the course as one that fostered an inquiry mindset (MacKinnon & Archer-Kuhn, 2022). Although this may seem straightforward given the name of the inquiry-based pedagogy, it became clear that participants had undergone a significant shift with respect to the ways they viewed higher education and learning. Participant One stated, “I think the inquiry-based attitude of the course was something that was really interesting and I'm glad that I got to experience what that looks like and. . . lead my own way through the course.” Participant Ten compared traditional approaches to educational delivery with what they experienced in the inquiry classroom:

. . . just looking at the other classes in school we obviously know that it's very memorize and spit it out in regards to taking the information to an exam. Whereas in this one, you have to be able to think these things through and come up with, you know, a project that's unique and well thought out.

Further, participants tied their experiences of reflective practice directly to their descriptions of inquiry mindset:

I think it was good to reflect on everything that you did, because I don't think that you get to do that a whole lot in courses in university. . . I think that's really important to document and pick up on and reflect back on, like, “What did you learn?” (Participant Seven)

For many participants, inquiry became more than a mechanism for learning – participants' perspectives shifted as they noticed evidence in their daily settings outside the classroom: "It's interesting that now that [evidence] jumps out at me, and it never did before" (Participant Four).

Transformative

We cannot make claims about ubiquitous transformative experiences occurring in leadership classrooms based on our single case study. However, in the context of this course participants made it clear that they experienced marked changes in how they thought about themselves, how they approached their academic work, how they interacted with others, and how they perceived the world around them. For example, Participant One indicated, "I think a lot of things changed for me from the beginning to the end of [the course]." They then described the experience in greater detail:

... it wasn't so much that I was learning about the content but I was learning that there's a hundred different ways to approach something and every way that you approach it and every perspective that you take on the same issue you can come up with a hundred and one different solutions. I thought that that was really cool. It kind of made me take a step back and look at how am I approaching other things in my life? Am I too tunnel vision on some issues? What other perspectives can I look at?

Participant Four articulated a similar kind of growth: "When I was putting my information together, I thought it was really cool because I was, like, 'Oh, my gosh. This is where I started, and this is how I got to this point...' And definitely my viewpoint has changed." Some participants indicated this change happened in unassuming instances throughout the course, and others cited a critical moment where they "put two and two together" (Participant Four) in a way that helped them understand the impact of their experience. Many students used remarkably similar descriptions to indicate that their experiences in the course would stay with them for a lifetime.

Discussion

The results of our study indicate that leadership learning facilitated through inquiry-based pedagogy is deeply personal, interconnected, applied, and transferrable. In addition to our in-course assessments of student learning, we now have experiential data to confirm that leadership learning outcomes are well served by an inquiry-focused approach. Several students were able to verbalize their leadership learning explicitly and without prompting, and almost all participants spoke to their mastery of one or more leadership outcomes as a result of participating in the course. We also saw that inquiry-based learning pedagogy offers students the time, space, and capacity for personal leadership development that is not often possible in conventional modes of educational delivery. Lower structure, student-driven learning experiences enable students to conceptualize leadership development as an ongoing process rather than as an outcome for a single course that is then forgotten and left behind.

Students involved in the course we studied also experienced inquiry-based learning as transformative in terms of their mindset, capacity for learning, ability to lead change, and problem-solving competency. They emerged from the course more resilient and persistent, due in part to the necessity of having to navigate ongoing affective and instrumental tensions throughout their learning experience. Students reported having forged lasting relationships with their peers, instructors, and others who supported them, and further understanding the impact that being part of a community of learners had on their development.

Finally, at the conclusion of our study we had ample evidence to indicate that, in addition to meaningful leadership learning and transformative experiences, students were also highly satisfied with the inquiry-based learning class:

I think it was a great learning experience, I learned a lot . . . it just kept getting better and better and better, and I feel like as the weeks went on I just became more interested in what we were learning and what we were doing and all of it . . . I felt like I got a lot out of the course that I would have never expected. (Participant Seven)

World Café participants further reiterated their satisfaction, indicating that “they had an overall positive experience in [the course],” and that it was a fun, engaging, impactful approach to higher education (World Café summary). Interestingly, even if their final grades did not meet their expectations, students still indicated that they would recommend the course to others or do something similar again if the opportunity arose.

Significance

Although our research represents one case study in a localized context, it demonstrates that inquiry-based learning has potential to become an impactful pedagogy in postsecondary leadership education. The significance of this research is in part tied to the location in which it occurred; a mid-sized medical-doctoral university in Western Canada with over 30,000 undergraduate students presents a unique setting in which to implement an interdisciplinary inquiry undergraduate certificate of this nature. The course learning outcomes, reinforced through a pedagogical approach grounded within inquiry immersion, meant that student agency, authorship, and identity drove the course content in an organic way. This was an uncommon experience at our university, particularly for first year students, and the leadership learning achieved in the course enabled students to establish interdisciplinary leadership competencies early in their degree programs.

Additionally, students felt that they were gaining critical skills related to higher order learning and knowledge transfer. This research offers insight into the tricky balance between problematic struggle and productive struggle as students were often pushed toward the limits of their zones of proximal development. It suggests what kind of supports and resources are necessary to ensure that struggle in an inquiry-based learning environment is productive and results in meaningful learning with respect to information literacy, reflective practice, critical thinking, perspective taking, problem solving, personal development, and resilience.

Conclusion

The purpose of our research was to investigate how inquiry-based pedagogy is used in leadership education. Specifically, we sought to understand how leadership learning is characterized in an immersive inquiry course, and how inquiry-based pedagogy is experienced by students engaged in interdisciplinary leadership learning. We conducted this research with the goals of both generating knowledge and developing practical resources to use in inquiry-based learning implementation. While there are many takeaways from the research results, four areas stand out as particularly important: (1) the ways in which the course we investigated fostered an inquiry mindset; (2) the challenges and tensions associated with inquiry-based learning are worth the learning gains for students; (3) the opportunity to learn in relationship is beneficial for leadership development outcomes; and (4) students' experiences of inquiry-based learning in leadership education often included instances of transformation.

The shift to an inquiry mindset that resulted for many of the participants in our study is imperative in leadership education. Development of an inquiry mindset is correlated with “analytic ability, problem-solving skills, and overall intelligence” (MacKinnon & Archer-Kuhn, p. 28); an attitude of curiosity, in other words, is a key aspect of students' future success as change leaders. If a student of leadership does not embrace an inquiry mindset, they are

less equipped to apply their learning outside the classroom environment or carry it through to their day-to-day lives.

Although leadership learning in an inquiry-based classroom is sometimes fraught, students reported that the tensions and difficulty they experienced were ultimately resolved. Additionally, they recognized that their struggles were worthwhile in contrast to the higher-level outcomes they achieved. Students developed resilience in the face of academic challenge, learned how to problem solve effectively when things became difficult, and were able to apply a curiosity mindset to foster optimism in the learning environment.

The collaborative learning that is characteristic of inquiry-based pedagogies was valuable to the participants in our study because it served to level power dynamics in the classroom and situated everyone – including instructors – as learning alongside one another. Learning about leadership in relationship with others helped students to feel supported, in contrast to their experiences in other first-year classes where they reported feeling lonely and isolated. Students also recognized the benefits of being able to take relational learning beyond the classroom; as [Chunoo et al. \(2019\)](#) reported, leading to address complex issues requires “collaborative thinking and acting” (p. 91).

Finally, participants made it clear that the course offered the possibility and potential for them to engage in transformative thinking. While this did not happen for every student, many reported personal change and development in how they thought about themselves, the nature of academia, their embodied learning, and the sense-making present in the classroom around them. Their participation in the course fostered their ability to view themselves and their leadership practice from multiple perspectives, and had a multi-faceted impact on their day-to-day lives.

In summary, our research highlights how inquiry-based learning opportunities have the potential to enhance students’ leadership education substantively. We better understand the phenomenon of inquiry-based learning, as it is expressed within the context of a first-year interdisciplinary course focused on leadership development. Generally, students’ experiences point to their participation in inquiry-based learning as a formative experience that extends beyond the classroom and their disciplines of study. Based on this case study, we suggest that inquiry-based learning is a useful learning approach in postsecondary leadership education. We aim to further explore learners’ experiences to continue building a more nuanced understanding of the resonance between inquiry-based learning and leadership education.

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Further reading

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