

Active Learning for Real-World Inquiry



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Foreword

Mary Bernard, PhD

I had the great privilege of joining Royal Roads University (RRU) early in its establishment by leading the development of the university's research mandate as its first Associate Vice-President, Research. In those early years the university put forth a bold model for the times – an entirely interdisciplinary university with an applied and professional focus in the social sciences. The blended model of delivery, with short intensive residencies and internet learning between in-person residencies, was unique. Both the educational model and its mode of delivery was intended to attract career-oriented professionals who would continue in their communities and organizations while pursuing a higher education degree.

Indeed, those who have been attracted to RRU over this past quarter century have been exactly the type of learner that the university hoped for. They are those who seek to make the world a better place, to transform existing systems, and in the process often transform themselves.

Not only does RRU appeal to a diverse group of innovative learners, but the university attracted, and continues to attract, a broad range of creative scholar-practitioner professors, instructors, and supervisors of theses, dissertations, and other capstone pieces. They have embraced and expanded the university model with vigour and imagination.

The editors of this book, RRU professors Dr. Doug Hamilton, Dr. Richard Kool, and Dr. Elizabeth Childs, had the foresight to bring together a remarkable group of social science colleagues to explore teaching of real-world research, both conceptually and practically. They have decades of teaching and research experience and I have witnessed how each has contributed substantially to the

development of key academic programs that capture the need for societal and organizational change. Doug Hamilton's deep commitment to active learning and research is manifested in so many different ways including leading the Master of Arts (M.A.) in Educational Leadership and Management – International, as well as the advancement of the scholarship of teaching and learning. Rick Kool's passion and drive is matched by only his sense of adventure and innovation in research. Rick founded the M.A. in Environmental Education and Communication program at RRU in the early 2000s. Elizabeth Childs leads the M.A. in Learning and Technology at RRU. Her technological approach and experience in teaching how to do research in both on-line and in-person contexts has become even more critical during the pandemic and its resulting world-wide changes.

The author contributors, the majority of which I have been involved with in some capacity over my academic administration career, bring their individual innovations and experience from a wide range of societal, community, and organizational settings as well as their insight from the classroom or supervision. Collectively they provide a wealth of scholar-practitioner reflection. Individually, each article brings nuggets of wisdom and guidance.

Through a compilation of thirty-three articles, this book embodies the nature and range of teaching and facilitating research to learners who wish to engage in real-world research across organizations, communities, and society. From a socially engaged applied research perspective the articles capture the primary components of teaching research, beginning with how to engage the learner in research to the application of research paradigms and methodologies and to data gathering and analysis. The roles of supervision and mentoring as well as teaching research courses complete the compilation. All components are explored specifically in relation to real-world research.

In a time of unprecedented change and significant questions, real-world inquiry that encompasses the complexity of our times is essential. This in no way negates the importance of pure research;

both are necessary and can be complementary. My mentor through the 1980s, Eric Trist, was one of the grandfathers of action research and action learning. Trist always emphasized “Not all research must be socially engaged, but some of it must be.” Toward the end of his life, Trist, together with several of his colleagues, edited a three-volume set on the *Social Engagement of the Social Science*. The contributors to each volume (the socio-psychological perspective, the organizational perspective, and the social ecological perspective) were each grounded in forms of real-world inquiry including action research, community-based research, and participatory inquiry. I am reminded of Trist and his colleagues’ seminal work as I read *Active Learning for Real-World Inquiry*. The book further advances the importance of socially engaged research for our times by bringing to the forefront the importance of teaching how to do such inquiry.

There is something for all university community members in this book. Instructors and supervisors of student research will find a treasure trove of both practical and theoretical information on teaching and learning real-world inquiry. Students will find a good sense of the nature and range of such inquiry and how to actually engage in it. I hope the book inspires you like it has for me.

Sincerely,
Mary Bernard

Acknowledgements

Royal Roads University acknowledges that the campus is on the Lands of the Xwsepsum (Esquimalt) and Lekwungen (Songhees) ancestors and families. With gratitude, we live, work and learn here where the past, present, and future of Indigenous and non-Indigenous students, faculty and staff come together.

We would like to thank all contributing authors for their generous sharing of their work, expertise, and wisdom. This work would not have been possible without the exemplary efforts of Ken Jeffery and Victoria Klassen Jeffery to bring the vision of this book to life. Devina Dander was an instrumental member of the project as it began and developed and her insights into the overall vision of this book were invaluable. Chloe Yan provided timely administrative support during the article submission process. Also, the editors would like to thank Mary Bernard for graciously agreeing to write the Foreword for the book. Finally, the development and production of this book would not have been possible without funding assistance provided through Royal Roads University's Internal Research Grant program.

Credits

Editing: Doug Hamilton, Richard Kool, Elizabeth Childs

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Introduction

DOUG HAMILTON; RICHARD KOOL; AND ELIZABETH CHILDS

Going into a master's thesis process is akin to walking through a dark forest looking for a mountain you want to climb. You know the right mountain is out there, but it takes a bit of solitary exploring, along with occasionally running into others also stumbling around in the low valleys and dark forests, before you get a glimpse of the mountain range. There are many mountains in the range, and they are all attractive, yet you can only climb one at a time. You hike out of the forest towards the mountains and find some of them are more attractive than others, and towards those you walk. As you get closer, you realize that some attractive peaks are only accessible by scaling sheer granite walls, while others have extremely long walks through muddy bogs, and others would oblige you to cross glaciers. Which one to choose? In which methods are you willing to become proficient at to reach your desired peak? While you ponder these questions, potential guides show up, telling you they have been to the top of that mountain themselves and are willing to help you learn the necessary methods to get there, be they rock climbing or efficient hiking. The guides promise to ensure your safety and keep you on belay if needed, but you are going to have to learn the methods appropriate to scaling the mountain of your choice. There's no guarantee of success but you will have all the support you need to summit and get down safely to base camp.

The anecdote above illustrates the various roles faculty members play in preparing our graduate and advanced undergraduate students to become applied researchers. In our commitment to this goal, we seek ways to help guide students successfully through these “dark forests” of mindsets and methods while at the same time giving them enough freedom to take risks, make mistakes,

and learn from their own experiences of engagement. With this focus in mind, *Active Learning for Real-World Inquiry* serves as a compendium of active learning approaches to teaching research concepts, methods, and applications in both face-to-face and online learning environments. We invited faculty members from a range of disciplines and areas of practice in the social sciences to contribute activities they have used to help students envision or directly experience the process of conducting research in applied organizational settings or other social settings. As a result, this book brings together a collection of instructor-generated and time-tested active learning and teaching strategies to use in research methods courses in the social sciences. The concepts and activities presented by the chapter authors should be useful for instructors of research methods courses as they continue to hone their own instructional approaches. Also, the activities should be helpful to both undergraduate and graduate students who are preparing to do research in applied organizational settings or other social settings, whether it is research associated with a course assignment, a component of research course, or a capstone project, thesis, or dissertation. In addition, some of the submissions offer ideas about the organization and delivery of entire research methods courses, which may be of use to instructors and those who are thinking about how to design entire courses.

One of the most challenging aspects of teaching research is helping students unfamiliar with processes and protocols of rigorous and systematic inquiry to acknowledge, confront, manage, and overcome sources of anxiety and confusion about becoming a researcher (Earley, 2014; Harder 2010). When students begin the process of learning about research, they can lack self-confidence based on having limited knowledge, understanding, and experience (Nind, et al., 2020; Cooper et al., 2012). Finding adequate and helpful ways to assist students to gain confidence and overcome thoughts of being imposters is one of our most important tasks as “methods teachers” (Nind et al., 2020, p. 808).

Although there is limited research on the methodology of

teaching research concepts and methods, some scholars have emphasized the importance of actively engaging students while they are learning how to do research (Cooper et al., 2012; James & Pollard, 2011; Lundahl, 2008). Brame (2020) notes that instructional activities that support active learning “focus more on developing students’ skills than on transmitting information and require that students do something—read, discuss, write—that requires higher-order thinking. These kinds of activities also tend to place some emphasis on students’ explorations of their own attitudes and values” (p. 1) and align very well with the learning outcomes and objectives of most research courses in the social sciences, especially those courses aimed at preparing students for research in applied settings. Teaching using an active learning approach usually means helping students to carry out research-related tasks and protocols rather than telling them how to do them or having them learn primarily through texts or videos (Allen & Baughman, 2016). These active learning activities may include role plays, games, journaling, teamwork, problem-based learning, simulations, collaborative projects, skills training, the use of real data sets, or even more service-learning-oriented approaches such as integrating research into a community project (see Harder, 2010; Lundahl, 2008).

According to Meyers and Jones (1993), the foundation for active learning is built upon two key assumptions about learning: “(1) learning is by its very nature an active process and (2) different people learn in different ways” (p. 20). Based on this foundation, students may be less-intimidated by research processes and better prepared to carry out their own studies when they actively engage in the learning process (Barraket, 2005). This may be especially true for students engaged in applied research in actual organizational settings where the stakes can be high and the impact of the research immediate and significant. Conducting research in applied organizational settings such as businesses, schools, community agencies, and healthcare settings can have significant real-life implications for the participants as well as the researcher, thus we believe it is important for researchers-in-training to have

preparatory experiences that closely reflect the kinds of organizational dynamics, situations, and complexities that they would experience in conducting their research activities in the field.

Teaching research concepts and methods using active and experiential approaches has been related to improvements in students' critical thinking (Barraket, 2005); satisfaction and enthusiasm in engaging in research (Freeman et al., 2014; Barraket, 2005); and increased confidence about their ability to apply research knowledge in the future (Allen & Baughman, 2016). Other studies have concluded that students value involvement in an actual research project as a means of deepening their learning about research (Lundahl, 2008; Marek et al., 2004). Furthermore, the narrative analysis from Nind et al. (2020) involving graduate students taking research methods courses underscored the importance of "doing things" (p. 804) during the learning process. In that study, participants reflected on the importance of applying actual research methods in practice as being pivotal to their growth and development as researchers when they were involved in generating their own data, taking on projects that are personally meaningful to them as well as writing, presenting, and teaching.

Authentic learning—a specific subset of active learning—is designed to connect what students are taught in class to real-world issues, problems, and applications (Pearce, 2016). According to Pearce (2016), "authentic learning is multi-disciplinary, skills-based learning in a real-life context, demonstrating to students that their learning is connected, relevant, and can have an impact upon the world around them, as well as their future selves" (p. 2). Authentic learning activities such as simulations, using real data sets, engaging in role playing, completing problem-based learning assignments, creating portfolios, or carrying out mini-research projects help to socialize and enculturate researchers-in-training into the role of a professional or academic researcher. By helping students stand in the shoes of a researcher, these learning experiences permit learners to practice skills in environments similar to those in which the skills will be used (Lebow, 1993; Newman and Wehlage, 1993).

As well, authentic learning activities often involve complex tasks that are used to investigate ill-defined or messy problems over a sustained period (Reeves et al., 2002). According to Lombardi (2007), these kinds of activities help learners achieve four major objectives in learning: (1) to make connections between personal interests and those in the discipline; (2) to be more motivated to engage and persevere due to relevance of activity; (3) to facilitate absorption, retention, and transfer of skills and knowledge; and (4) to provide a sense of enculturation into the profession or discipline.

Despite the ubiquity of research courses in the social sciences, however, there are surprisingly very few books and articles dedicated to actively engaging students in learning about and doing research (Nind et al. 2020). Nevertheless, there is an excellent resource on teaching research using active learning approaches that has been published relatively recently, which nicely complements our book. Dawson's (2016) book, *100 Activities for Teaching Research Methods*, is a very helpful sourcebook of pre-designed activities, games, scenarios, and role plays that faculty members can use with their students to teach research methods in an interactive and stimulating way. *Active Learning for Real-World Inquiry* builds on Dawson's (2016) sourcebook by focusing on the contributions of a diverse community of scholars who have tested out the activities shared within this volume in their own teaching and professional context.

The authentic and hands-on activities in this book feature a blend of whole class, small group, and individual learning strategies that are appropriate for both face-to-face and online learning environments. Questioning strategies, scaffolding techniques, self-assessment exercises, work sheets, visualization techniques, project exhibitions, peer critiques, display posters and other approaches are offered to help students actively reflect on the process of research, to carry out research activities, and to provide them with feedback they can apply to the development and revision of their research proposals and plans.

Roadmap to the book

The main foci of the chapters are outlined below in order to provide the reader with a sense of where they might want to begin exploring the contents of the book. We have included submissions that help students actively think about their own engagement in the research process and help them plan their research studies from the start. The various activities presented here take students through the stages of developing and carrying out an applied research study: from deciding on a topic, developing a researchable question, carrying out the research plan, analyzing data, finding impactful ways to share research findings, and developing a feasible plan to act on the results. These activities address the key decision points in the research process and provide some illustrative ways to engage students in clearly thinking about these stages from the beginning and how to prepare themselves for engaging in real-world research. Some of the submissions also offer provocations about the design of entire courses or major components of a research course.

We invited our submitters to follow a similar format to achieve consistency between the chapters. Each author was asked to introduce their activity and provide a rationale for its role in supporting students in learning how to do research. Then, we asked the authors to provide an overview of the steps they took to implement the activity in practice so that a reader could potentially adapt it for their own purposes. Finally, we invited the submitters to offer some reflections on the lessons learned in conducting the activity and the potential impact of it on students' learning.

The first collection of chapters in Section One focuses on **engaging students in becoming applied researchers**. These articles provide strategies and approaches for building capacity for self-directed learning as a researcher and examine the process of forming a researcher identity. Authors share ways in which visual exploration can be used to identify research areas of interest, how they have used social media to build research literacy and offer

concrete strategies for kicking off a literature review. Throughout this section, there is a common theme of supporting students as they develop their own identity as a researcher and offering an associated toolkit to draw upon.

Section Two focuses on engaging students in **developing research questions and problems**, which is a key stage in the formulation of an incisive, relevant, and significant research study. Through activities that employ aspects of systems thinking, design thinking, and even adopting a mathematician's mindset, the process of constructing a research question and identifying the research opportunity are examined.

Section Three focuses on strategies for engaging students in **exploring research paradigms and methodologies**. The authors of articles in this section discuss and provide hands-on tools for facilitating active learning through arts-based inquiry and using role play and interactive inquiry methods to explore qualitative and quantitative approaches to research, all aiming at helping students expand their frame of reference and include another point of view.

The chapters in Section Four showcase multiple ways of actively involving students in **data gathering** with an aim of providing multiple and diverse perspectives and strategies for engaging participants in a research project. Strategies for using photovoice, an interview matrix, social media, and other digital methods to gather data are shared. In addition, a mini-field research pilot study, as well as a journalistic field study approach, are outlined and explained.

Engaging students in **data analysis** is the focus of Section Five, which contains chapters that offer diverse perspectives on the topic. From how to develop a statistician's mindset, getting into the mess of qualitative data analysis and adopting more of a business analytics approach to applied research, the chapters in this section provide the reader with a range of approaches to use as they teach the importance of data analysis.

Section Six focuses on a variety of methods and diverse perspectives on ways to engage students through **supervision and**

mentoring. From ways in which using listening techniques can be used to strengthen the supervisory relationship, to a chronicling of how an online conference can be used as a tool to foster connection, these chapters offer multiple methods and approaches to supervision and mentoring. In addition, creative ways for supporting students in decolonizing research through an Indigenous scholar-in-residence and a reciprocal mentorship approach are shared.

The chapters in Section Seven, our final collection of contributions, focus on engaging students in **research methods courses**, offering models of research methods courses, providing tools for mapping an action-inquiry capstone and discussing ways in which an entrepreneurial approach and facets of trans-disciplinarity can be embedded as part of teaching research methods.

In summary, *Active Learning for Real-World Inquiry*, has the following aims:

1. To assist faculty members in helping their students: (a) overcome the fear of doing research; (b) systematically and thoughtfully plan their studies; (c) develop a viable support system for their research; and (d) think about how to maximize the impact of their research findings;
2. To contribute to the scholarly body of work related to the application of active learning principles and practice to the development of applied research expertise; and
3. To serve as a teaching resource and handy reference in relevant research courses in colleges and universities.

We hope this book will launch a continued conversation about this work, and that as an Open Educational Resource (OER), it will be reused, remixed, and repurposed to fit various contexts. We encourage folks to share those remixes and use cases.

Many thanks to all who contributed and shared their experiences, good teachings, and wisdom as part of this work. Not only did the

contributors take the time to write their chapters, but most also acted as peer reviewers, offering insight and critique in examining other authors' submissions.

This work would not have been possible without the grant support from Royal Roads University which is situated on the lands of the Coast Salish peoples, and in particular the Xwsepsum and Lekwungen ancestors and families. We are very grateful to be able to be a part of this community.

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Doug Hamilton

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Doug Hamilton is Professor and Head of the MA in Educational Leadership and Management (International) program at Royal Roads University. He is a scholar, program developer, international speaker, and workshop facilitator. His scholarly interests include research into various kinds of learning innovations that bridge the gap between academic study and the professional workplace. He is particularly interested in the role that technology, collaborative forms of engagement, action research, and reflective practice can play to enhance and support professional learning.

Richard Kool

ROYAL ROADS UNIVERSITY

Dr. Richard Kool is a professor in the School of Environment and Sustainability at RRU and founded RRU's transdisciplinary MA program in Environmental Education and Communication in 2003. His current research interests include climate change communications, problems of environmental and scientific communication to science-resistant religious communities, the history and development of heritage interpretation in Canada, and microscopic animals of BC.

Elizabeth Childs

Dr. Elizabeth Childs is a professor in the School of Education and Technology at Royal Roads University, Canada. She is interested in the design, creation and implementation of flexible learning environments that incorporate the affordances of technologies and provide learners with increased choice, flexibility, and opportunities. Dr. Childs' research interests include online and blended learning; openness and open pedagogy; online learning communities and digital habitats; design thinking and participatory design approaches.

SECTION I
ENGAGING STUDENTS IN
BECOMING APPLIED
RESEARCHERS

I. Becoming: Using Self-directed Learning to Develop Learners' Research and Leadership Capabilities and Confidence

JUDY WALTERS

Judy Walters is an associate faculty member in the School of Leadership Studies at Royal Roads University, Victoria BC Canada (j.walters@shaw.ca).

Rationale

In a complex and fast-changing world, the need to learn how to learn (meta-gogy¹), to lead one's own learning, and to become a self-directed lifelong learner are imperative (²Bransford, Brown & Cocking, 2000; Brockett & Hiemstra, 2018; Brookfield, 1986, 1993;

1. Meta-gogy is a process through which learners learn how they learn. It can be sparked by and/or spark self-directed learning. It can involve guided instruction, reflection, and other processes.
2. References here and throughout are purposely numerous and intentionally both current and older to illustrate the breadth, depth, and long duration of researchers' interest in and insights on SDL.

Field, et al., 2014; Garrison, 1997, 2003; Knowles, 1968, 1970; Kranzow & Bledsoe, 2017; Leong, 2020; Merriam, 2001; Meyer, 2008, Meyer et al, 2010; Morris, 2019a; Silén & Uhlin, 2008; Taylor & Burgess, 1995). Self-directed learning (SDL) has a millennia-long history in the ‘real world’ (Houle, 1961; Tough, 1967, 1971), yet it is rarely taught or encouraged in schools. Yet, learning how to take responsibility for one’s own learning and future is essential for success in both academia and life. Acquiring the mindset and meta-gogical skills such as: personal initiative and project management skills; curiosity and commitment; blend of analytical, critical, reflective and creative thinking; problem-solving and leadership skills are especially important for graduate learners aspiring to conduct their own research projects.

Within Royal Road University’s (RRU) Master of Arts in Leadership (MAL) program, the course Self-Directed Studies (SDS) enables learners develop the knowledge, skills, and attitudes (KSA) needed to conduct their own applied, action-oriented research projects and address complex, real-world challenges in new ways. This chapter explores how SDL works in theory and then discusses how it is employed in practice in SDS to foster active, self-directed, real-world learning and build learners’ research and leadership capabilities and confidence.

Overview: How SDL Works in Theory

Definitions and descriptions of SDL vary, but most affirm and expand Knowles’ (1968, 1970, 1973, 1975, 1980, 1996) andragogical explanation. Many adults are: intrinsically motivated; able to draw from their life experience; want their learning to be active and interactive, relevant, and applicable; and want their learning to enable them to solve problems and achieve specific goals. Therefore, they take the initiative, often outside the classroom, to: articulate their learning goals; diagnose their learning gaps and

needs; find useful, relevant resources; craft their own learning strategies; implement and adjust them; and evaluate their success³. Researchers found that freedom to pursue their own interests and goals, explore real world concerns, use diverse (non-traditional, non-academic) resources, think and learn in their own way at their own pace, collaborate with whomever they chose, make meaning as they wish, and contribute to their own and others future well-being are important SDL motivators (Boyer et al, 2014; Brockett, & Hiemstra, 1985; Gibbons, 2003; Kranzow & Bledsoe, 2017; Loeng, 2020; Merriam 2001; Morris, 2019a).

Unlearning and re-agenting

Research (Candy, 1991; Grow, 1991; Lunyk-Child et al, 2001; Meyer et al, 2010; Owen, 2002) also showed that expecting students – who have spent 12 or more years in the education system being told what, when, where, why, how and with whom to learn – to enthusiastically embrace SDL and successfully initiate and complete SDL projects is unreasonable and possibly unethical (Field, Duffy & Huggins, 2014; Silén & Uhlin, 2008; Taylor, 1986; Taylor & Burgess, 1995). While so much freedom sounds, and ultimately is, liberating and exhilarating, having so many choices, decisions and responsibilities can initially be disorienting or even debilitating (Leong, 2020). Both SDL in theory and SDS in practice can cause learners to feel overwhelmed, adrift, anxious, incompetent, imposter-ish, disengaged, paralyzed, or even angry (Lunyk-Child et al 2001; Taylor, 1986; Taylor & Burgess, 1995). To regain their sense of agency and successfully initiate and complete SDL projects, learners

3. Some children and youths are equally motivated to pursue their own interests and learning goals (Gibbons, 1990; MacKeracher, 2004).

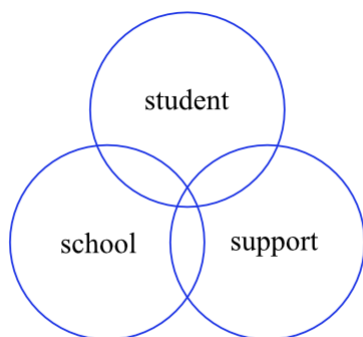
need some structure, guidance, and support (Brockett & Hiemstra, 1985, 1991; Lunyk-Child et al, 2001; Silén & Uhlin, 2008).

Three key contributing factors

Success and satisfaction with SDL depend on three intertwined factors: the institutional and pedagogical context and culture; personal psychological and emotional traits; and supportive but ‘stretch-y’ collegial relationships (Boyer et al, 2014; Brockett & Hiemstra, 2018; Graham & Misanchuk, 2004; Garrison 1997, 2003; Hammond & Collins, 2013; Leong, 2020; MacKeracher, 2004; Morris, 2019a; Owen, 2002; Song & Hill, 2007).

Figure 1

The 3S's of successful SDL



Institutions, course designers, and instructors need to create an “enabling environment” (Meyer et al, 2010) in which it is safe to take risks, experiment, get messy, fail forward, and learn. They need to provide a framework, some scaffolding, and a ‘sandbox’ or ‘learning lab’ in which learners can initiate, refine, and complete their SDL projects. Instructors need to guide learners through the transition from passive teacher-centred dependency to active learner-

centered independence (auto-didaxy) and, hopefully, interdependent communitarian lifelong learning (Candy, 1991; Grow, 1991; MacKeracher, 2004; Morris, 2019b; Taylor, 1986). They need to move learners away from the comfort and predictability of traditional pre-scripted courses and reassure them their own often messier self-directed inquiries will yield deeper, richer, more engaging, relevant, applicable, valuable learning.

Learners need to possess the desire and drive to take charge of and manage their own learning (Boyer et al, 2013; Field, Duffy & Huggins, 2014; Gibbons, 1990, 2003; Leong, 2020; Song & Hill, 2007). Persistence and a love of learning are important, in addition to project, time and self-management, ambition, vision, and passion (Garrison, 1997; Merriam, et al., 2012). So are meta-cognitive skills like being able to critically reflect on and evaluate one's own knowledge; beliefs; values; and ways of thinking, learning and living (Field, et al., 2014; Meyer et al, 2010; Owen, 2002; Silén & Uhlin, 2008). Being open to new paradigms, perspectives, and possibilities, being willing to change one's views and habits, wanting to realize one's full potential, shape the future, and improve one's own and others' quality of life are valuable attributes (Field, Duffy & Huggins, 2014; Freire, 1970; Garrison, 1997; Morris, 2019a; Owen 2002).

Despite its name, SDL is best pursued, not in isolation, but 'in community' (Brookfield, 1986; Johnson & Johnson, 1999, 2002, 2008; Johnson, Johnson, Holubec & Holubec, 1994; Johnson, et al., 2000; Leong 2020). Learners need others to serve as and suggest resources, to analyze challenging situations and ask hard questions, to brainstorm, kick around and test out ideas, to explain, defend and refine their ideas, to reflect, make meaning and consolidate, internalize, apply and effectively share their learnings (Akyol & Garrison, 2010; Garrison, 1997; Graham & Misanchuk, 2004; Kranzow & Bledsoe, 2017; MacKeracher, 2004; Morris, 2019b; Silén & Uhlin, 2008). Learners benefit not only from facilitators and colleagues who support them, but from co-learners on their own SDL journeys (Vella, 2002). Watching others manage the uncertainties, ambiguities and frustrations of SDL normalizes them,

produces ‘steal-able’ ideas, and enriches everyone’s learning. Because knowledge and meaning are socially and collaboratively constructed (Garrison, 1997, 2003; Merriam et al, 2012), working in a community of practice (Lave & Wenger, 2002), community of inquiry (Garrison, Anderson & Archer, 2010), or community of co-learners (Bransford, Brown & Cocking, 2000) fosters deeper learning. Co-learning encourages robust conversations⁴ in which learners present their perspectives and questions, and stretch each other’s thinking; learners can consider other perspectives and possibilities, and expand their thinking, KSAs and worldviews (Akyol & Garrison, 2010; Graham & Misanchuk, 2004). Collaborative learning yields synergistic multi-layered transformative learning (Cranton, 2006; Merriam, 2001; Mezirow, 1985, 1990, 1997, 2000, 2009; O’Sullivan, 1999; Taylor 1986, Taylor & Cranton, 2012, 2013).

SDL’s benefits

SDL has been shown to yield many benefits: broader, deeper learning, improved focus, meta-cognition, academic performance, professional opportunities and success, confidence, competence, motivation, problem solving skills, creativity, adaptability, resilience, a greater sense of agency, empowerment, self-efficacy, and, ultimately, enhanced life satisfaction (Boyer et al, 2013; Field, Duffy & Huggins, 2014; Gibbons, 1990; Graham & Misanchuk, 2004; Kranzow & Bledsoe, 2017; Leong, 2020, Merriam, 2001; Meyer, 2008, Meyer et al, 2010; Silén & Uhlin, 2008; Song & Hill, 2007). It allows and encourages individualization, inclusivity and iterativity. It cultivates the mindset and KSAs required to thrive in learning

4. Robust conversations combine elements of fierce (Scott, 2004) and crucial (Patterson, Grenny, McMillan & Switzler, 2012) conversations.

organizations and life (Belasco, 2012; Belasco & Stayer, 2008; Boyer et al, 2014; Garvin, et al., 2008; Kranzow & Bledsoe, 2017; Marsick & Watkins, 1996; Senge, 2006; Watkins & Marsick, 1993). It fosters conscientization, empowerment, emancipation, democracy, social justice, and inspires more SDL so it becomes a way of life (Freire, 1970; Leong, 2020, Merriam, 2001; Morris, 2019a)⁵. SDL gives learners the confidence and competence needed to conduct their own research inquiries and lead change⁶.

Reflections: How SDS Works in Practice

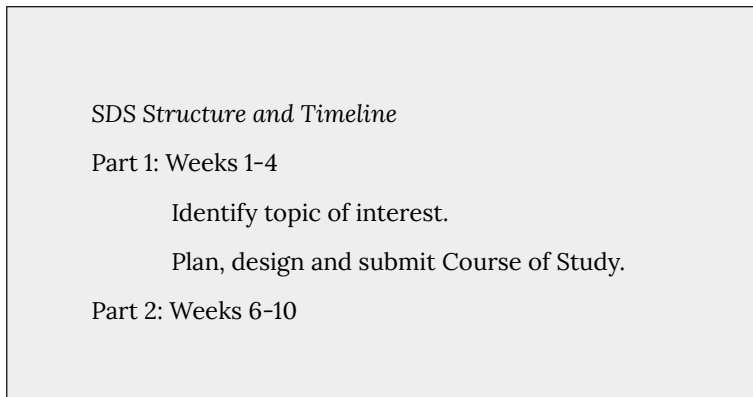
SDS is a 12-week long online course in which learners conceptualize, design, initiate, fine-tune, complete, analyze, present the results, meaning and implications of, and evaluate the value of their own self-directed Course of Study (CoS). It gives learners an opportunity to gain first-hand experience with the benefits and challenges of SDL and what is involved in becoming a researcher and a better leader. SDS's design applies SDL principles and practices. The institution and instructor provide a framework and support, then the SDS asks learners to design and conduct their own CoS on the topic of their choice.

5. In recent years, SDL has been incorporated into heutagogy (Blashcke, 2012; Blaschke & Hase, 2016; Hase & Kenyon, 2007, 2013), problem-based learning (Barrow & Tamblyn, 1980; Hmelo-Silver, 2004), bricolage (Kincheloe, 2001, 2005, 2011), and do-it-yourself edupunk education (Ebner, 2008; Kamenetz, 2010; Rowell, 2008; Miller, 2018).
6. SDL can also offer learners a glimpse of research methodologies like action research, bricolage, eclecticism, phenomenology, autoethnography, rhizomatics, metissage and arts-based inquiry.

Compared to most other courses, one key difference with SDS is that learners are supported not by a ‘teacher’ but by a faculty member who plays the role of a facilitator, coach, mentor, resource suggester, sometimes provocateur and constant champion. To facilitate SDL, teachers need to let go of their traditional role and shift their self-concept. Instead of being a sage on the stage, instructors need to step aside and free, empower and support learners to lead their own learning. Learners are explicitly required to support each other and contribute to each others’ learning journey. As they learn how to direct their own individual and collective learning, the facilitator slides to the sidelines⁷.

SDS unfolds in three phases. The first four-week phase is dedicated to empowering and orienting learners to SDL and coaching them through the development of their CoS. During the middle six-week phase, learners work independently to conduct their CoS and produce their deliverables. The final two-week phase is dedicated to closing the circle, sharing, reflecting on, consolidating, internalizing, and celebrating everyone’s learning.

Figure 2



7. As suggested by the work of Candy (1991), Grow (1991) and Taylor (1986).

Conduct Course of Study, refine as required.

Create shareable artifacts and evidence of learning.

Part 3: Weeks 11-12

Share, refine and submit outputs.

Celebrate, reflect and identify lessons learned

The entire class is sorted into small groups called pods. In week one, after a video-conference call to welcome and orient learners to the course, pod-mates are instructed to meet virtually and co-create a team charter. Learners are asked to discuss how they want to work together, identify what they have to offer and want to get out of the course, define their team values, vision, and goals, identify potential problems, develop prevention and mitigation strategies, and decide how they want to conduct their mid-point check-in and course-end conversation and celebration, all by week's end. Developing the team charter serves two purposes. Firstly, it is a quick, effective way to get team members to bond and build trust, develop open authentic collegial relationships, and often a *we-finish-together* pod pact. Secondly, and even more importantly, it gives learners safe first-hand experience in leading their own learning. It shows them they are capable of SDL. Readings and a selection of curated videos are provided to the students to explain what SDL is, how it works and how it will benefit them both in the MAL program and beyond, in the real world⁸.

During weeks two through four, learners focus on developing

8. Learners are introduced to Kolb & Kolb's (2009) experiential learning cycle in an earlier course.

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their CoSs. Faculty provide structure, guidance, and support by giving learners a CoS template (Appendix A) and having one-on-one conversations with each learner to clarify their goals and aspirations and refine their priorities and project plans.

The learners' first task is to decide what interests them and is worth studying. Learners are encouraged to pick a topic, challenge, opportunity, issue, question, or situation that: (a) they are truly passionate about; (b) will enrich their learning and enhance their KSAs; (c) is important to their organization or community and also has the potential to contribute to; (d) their capstone project, and; (e) career ambitions.

Learners first decide *what* they want to study and *why* doing so is personally meaningful, professionally strategic, organizationally opportune, societally beneficial, and academically contributory. Next, they determine what is truly do-able in the time they have and *how* they want to tackle their topic.

Topics learners have explored include:

- improving collaboration and communication;
- organizational culture and change;
- union-management relations;
- executive onboarding; virtual and cross-functional team development;
- love-led leadership;
- improving staff engagement;
- developing learning organizations;
- corporate social responsibility; expanding community programs;
- fundraising and volunteer training;
- managing family business dynamics;
- preventing burnout and suicide;
- solving homelessness;
- personal and community resiliency;
- new technology adoption;
- indigenous perspectives.;

Learners identify a starting list of resources that look like they will shed light on the topic and situation they are investigating. Advice on how to find relevant resources is provided to the entire class via an online forum facilitated by a university librarian. Learners are free to add or drop resources. In addition to academic books and articles, resources can include videos, blogs, grey literature, and informal conversations with colleagues or experts⁹.

Learners decide what artifacts or deliverables they would like to create to evidence and share their learning. While traditional academic papers and literature reviews are accepted, learners are encouraged to be creative and produce outputs that not only summarize and showcase what they have learned, but are useful, enrich others' learning and spark conversations and positive change. Examples are: a presentation; workshop or course; strategic plan; awareness campaign; organizational change or community development initiative; policy or program proposal; evaluation framework; or a video, website, blog, infographic, or arts-based artifact¹⁰.

Learners are asked to be intentional about and detail the KSAs and competencies¹¹ they plan to develop through their CoS. They develop a critical path and commit their CoS plans to a week-by-week schedule. Learners critique each others' plans. They each

9. Learners cannot conduct formal interviews or gather any data because doing so would require ethical approval, which would take too long to get given the short duration of the course. They can, however, gain insights, ideas, resources, and contacts that can contribute to their capstone research project.
10. Deliverables must demonstrate program competencies.
11. Competencies specific to the MAL program are personal mastery, learning, innovation and creativity, strategic and collaborative leadership, systems change, engaged inquiry and evidence-based scholarship.

submit a CoS Agreement (learning contract) to their instructor for official approval.

During weeks 5 through 10, learners work independently to conduct their CoS. They are required to post a weekly update of their progress and summary of their thoughts, reflections, and learnings. Learners connect with and support each other as per their team agreement, often using the tech tools they have chosen. In these conversations pod-mates work interdependently, cheering each other on, sharing resources and ideas, overcoming challenges, making sense and meaning, considering how their learning can be applied to foster systemic change, and managing the rest of life (work and family challenges and changes).

Pod-mates are responsible for organizing and hosting the mid-point check-in in week 7. Few CoS projects unfold precisely as planned. Most are messy. Some expand, some shrink, some go sideways and end up encompassing new topics learners discover are more germane to their interests and aspirations. Holding true to the spirit of self-direction, learners are free to adapt and adjust their CoS plans. All they need to do is notify their SDS facilitator.

In Week 11, learners share their deliverables with the entire class. Cross-pod conversations, questions and kudos help learners further refine the deliverables they share with their organization or community and submit to instructors at the end of SDS. Learners are given the freedom to decide whether, in week 12, they want to write a final reflective paper or, if all pod-mates agree, hold a collective dialogue, which they design and host as part of the course's closing conversation and celebration.

Like SDL, SDS offers many layers of meta-gogical, life-changing learning. It expands learners' KSAs, competence and confidence. They learn how to find, evaluate, theme, synthesize, and apply relevant information. They develop question-crafting, inquiry design, project management, decision making, and problem-solving skills. They develop their analytical, critical, reflective, integrative, and creative thinking skills. They learn about themselves and others, leadership and teamwork, the importance of being open to other

perspectives and possibilities, and the advantages of co-learning. Through their CoS, they learn about emergence and iterativity, flexibility and adaptation, figuring things out on the fly and living in constant “beta.” They learn how to dance with complexity, uncertainty, and unpredictability. They gain KSAs needed to: anticipate, manage, and drive change in a VUCA¹² world; confront wicked, gnarly problems; and work strategically and collaboratively to shift systems and stakeholders forward towards positive change and better futures. Through SDS, learners not only become researchers able to conduct their own inquiries, they become better leaders: able to ask sharper questions; listen more openly and deeply; gather more authentic input; build more engaged, empowered teams; and tackle complex real world concerns.

In sum, SDL and SDS enable learners to learn about (the benefits of) active learning and real-world inquiry.

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Appendix A: LEAD 517 Self-Directed Studies

Template for Course of Study Agreement

Faculty Advisor:

Start/end dates:

1. Your focus

Identify the topic, issue, or question you want to explore.

2. The Context

Provide a brief background or summary of the context and/or situation that concerns or interests you. Explain what you want to

investigate and why. Try to distill your goal or question down to a crisp tight one liner.

3. Course Overview

Write a course overview explaining

1. *what* you plan to explore
2. *why* it is important/significant
3. *how* you intend to conduct your COS
4. what you hope to learn, i.e.: your key learning objectives

4. Personal Leadership/Learning Goals

Decide what you want to learn and get out of SDS and your COS, both as a leader and a learner. Articulate your personal and professional stretch goals. Pre-plan and explain how you will develop and demonstrate gains made in each of the six program competencies: Personal Mastery, Learning, Innovation & Creativity; Strategic and Collaborative Leadership, Systems Change, Engaged Inquiry and Evidence-based Scholarship. Be strategic.

5. Resource List

Provide a list of articles, books and other resources you plan to include in your COS. Your resources list must include at least 10-15 sources beyond assigned texts and course readings. In addition to peer-reviewed academic works you are free to draw from other sources such as videos, blogs, websites, corporate reports, agency statistics, etc.

6. Deliverables

Indicate how you intend to summarize, showcase and share what you've learned through your COS. Possible outputs include, but are not limited to:

- an analytical, reflective or other essay, literature review or annotated bibliography
- a powerpoint, prezi or similar presentation
- a short video, website, blog, poster or infographic
- a workshop, lesson plan, strategic, communications or change

- plan, or project proposal
- creative, arts-based presentations.

7. Activities and Assignments

List all the activities, assignments, events and conversations you need to participate in and/or complete in this course and your CoS, for example

- Complete and submit Team Charter (Week 1)
- Submit draft Course of Study ideas and plans (Week 2)
- Participate in the “Ask a Librarian” forum (Week 4)
- Submit polished Course of Study Agreement (Assignment #1- Week 4)
- Conduct research, complete readings and other activities (Weeks 5-10)
- Organize and attend pod calls and other conversations
- Post weekly updates summarizing your progress, challenges and learnings
- Co-organize and conduct mid-point check in conversation (Week 7)
- Share draft Course of Study Deliverables (Week 11)
- Submit Course of Study Deliverables (Assignment #2 – Week 11)
- Submit Reflective Paper (Assignment #3 – Week 12)
- Organize and co-host end of course celebration and closing conversation (Week 12)

8. Project plan

Create a detailed project plan for yourself and your COS. Decide when you will complete readings and conduct other activities. Be sure to calendarize all activities, including pod calls and weekly updates. You can use the template below to highlight priorities as well as challenges, course corrections, surprises and/or epiphanies you want to reflect on in Assignment #3.

Activities & Assignments

Due Date

Comments/Notes (pay attention to's)

Date Done

What happened and lessons learned

Feel free to add any other activities and details you think will ensure your COS is do-able, well-planned, successful and enables you to learn what you want to learn. You are encouraged to either make detailed notes about what happened, lessons learned and other reflections or else keep a learning journal so that you can readily write your final paper (Assignment #3).

Note: SDS is a 3-credit course and each 1 credit hour reflects 33 hours of learner effort; therefore, your proposal should represent 99 hours of self-directed study.

Notes

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Judy Walters is an education consultant and serves as associate faculty in the School of Leadership Studies at Royal Roads University.

2. Demystifying Conceptualizations of Research Using Visual Exploration

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Rationale

University students often have fears and anxieties about taking research courses and learning about research concepts and methods (Bartolic, 2015; Earley, 2014; Harder, 2010). This fear can be exacerbated in practitioner-oriented graduate courses where working professionals have not taken research courses for a relatively lengthy time since their undergraduate studies. One way of reducing fear and anxiety about research is to help students explore their own understandings and conceptualizations of research, how these might have been shaped through experience, and how they might be relevant to their own professional contexts (Ross et al., 2017). Ross et al. (2017) further argue that helping professionals explore their own conceptualizations of research is an invaluable means of seeing important connections between

research and their own practices as opposed to viewing it as an activity performed only by academics.

The overall objective of the activity is to help new graduate students demystify the term “research” and to help them explore their perspectives, assumptions, and previous experience in engaging in research activities. By the end of the activity, I expect that students are able to discern research is not just “about numbers and experiments” (Ross et al, 2017, p.73) and, therefore, have a broadened conceptualization of how research can be defined, enacted, and applied within their own professional lives.

In this activity, I employ the use of Visual Explorer® which “uses images to facilitate conversations, creating new perspectives and shared understanding” (Palus & Horth, 2010, p.i). The Visual Explorer® package includes 300 photos representing a diversity of images and genres of expression. At the beginning of a course, students choose a photo from the Visual Explorer® photo bank that, for them, makes a compelling connection to the term ‘research’. After quiet solo reflection on why they chose the image, they share their images and discuss their reflections in small groups. Finally, as a class, we examine some of the themes that arose in the discussions and explore their implications for conducting applied research studies.

Using the Visual Explorer® activity serves as a way for students to generate metaphors that relate to their own conceptualizations of research. Using metaphors can be a powerful vehicle to help students surface and express tacit understandings and relationships (Pitcher, 2011; Steger, 2007; Moser, 2000; Lackoff & Johnson, 1980). A limited number of studies have explored the use of written metaphors to learn about students’ conceptualizations of research (Pitcher, 2011; Meyer et al., 2007; Meyer et al., 2005). Helping participants describe visual metaphors has been an integral part of the practice of visual research methods such as Photo-Voice (Wang et al. 2004; Wang & Burris, 1997) and has been employed in previous studies of participants’ conceptual understandings of

research-based phenomena (Childs & Hamilton, 2014; Hamilton, 2014; Warren, 2005).

The Visual Explorer® process helps students to unpack their previous experiences, fears, and assumptions about engaging in real-world research by providing a supportive environment for exploring different perspectives towards designing and conducting applied research projects. By examining and sharing their own predispositions, students often learn that fears about engaging in research are natural and an integral part of the learning process (Ross et al, 2017; Pitcher, 2011). The small group sharing sessions also give the instructor a sense of the level of fear and anxiety in the class as well as the level of previous experience of students in engaging in research. This diagnostic information is very helpful for determining the approach to debriefing the activity as well as planning follow-up activities.

Overview

The Visual Explorer activity takes place at the beginning of the first class in a Research Methods course. The following steps are taken to plan, organize, and implement the activity:

1. In preparation for the activity, 300 Visual Explorer® photos are scattered on a large table that can be accessed by all students.
2. To initiate the activity, I explain to the class: “We’re going to start at an important starting place on your pathway through this course—your own impressions or views of research.”
3. Students are asked to come to the table, look over the 300 photos and “select one image that makes connections for you to the word “Research.” I elaborate by explaining:

You can select an image that reminds you of, stands for, or is a metaphor for your connections to research. These could be

literal, figurative, emotional connections or past, present, or future connections. It doesn't have to a positive connection and there are no right or wrong responses. It is up to you. Take your time and think about the image that really resonates with you.
(15 minutes)

4. I adapt the Liberating Structures 1-2-4-All activity to structure the debriefing and reflection process (Lipmanowicz & McCandless, 2014). Once all students have selected an image, I invite them, individually and quietly, to reflect on why they chose their specific image using the following questions as prompts:
 - What attracted you to the image?
 - What are the connections between the image and the term “research?”
 - What kind of story does the image tell about your own perspectives on “research?” (10 minutes)
5. Then students form groups of approximately four or five participants. They take turns sharing their photos and sharing their reflections on the three questions above (20 minutes).
6. After each person has shared, the groups are invited to explore the following questions:
 - What were some of the common themes, if any, that emerged?
 - What new perspectives or insights did you discover as a group?
 - What “a-ha moments” did you have either collectively or individually? (20 minutes)
7. As a final debrief, we re-convene as an entire class. Students are invited to share some of themes discussed in the groups as well as some of the diverse conceptualizations of research that emerged from the activity (20 mins).

8. The exploratory work in this activity leads nicely into another activity, conducted later in the course, that helps students understand different research orientations, paradigms, and methods.

Notes about the activity

I have collected feedback from students using the minute paper technique described by Angelo and Cross (1993). At the end of the activity, students are asked to write one insight from the Visual Explorer® activity on a large file card and to submit it to me at the end of the class. They are encouraged to take a photo of their file card to keep as their own reflection. My review of the themes has revealed that pre-conceptualizations of research as a set of clinical activities performed by “people in white coats” are often dispelled, and more personally relevant (and therefore more broadly defined) understandings of research emerge.

In conducting this activity, I have also learned the follow-up plenary-wide debriefing is critical to the success of the activity and demands a highly intentional facilitation approach. Consequently, I have found it helpful to plan the kinds of inquiry-oriented questions that I will raise in the class that will help deepen students’ explorations of their own conceptualizations of research as well as their classmates’ views.

Although there is no direct assessment of this activity, the reflective explorations undertaken by students help them prepare for their final assignment in the course which includes a short proposal for a research study related to a leadership issue relevant to their professional role. In designing their study, students are asked to consider a research approach that will be meaningful and relevant to their own professional context and which is consistent with their own, potentially evolving, conceptualizations of research.

This activity can be adapted to an online learning environment by

having students select their own image in advance and posting it to a Padlet or Flipgrid board. They can post their individual reflections generated in Step 4 alongside the image they have chosen. The group-based discussions could occur asynchronously in a discussion forum or synchronously using breakout groups in Blackboard Collaborate Ultra, Zoom, or another application.

Reflection

This activity has become a core course activity since I began to use it 11 years ago. Over that period, I have made a few enhancements to strengthen its delivery. For example, incorporating a modified version of the 1-2-4-All activity (Lipmanowicz & McCandless, 2014) as a debriefing tool has given the process more structure and permitted more equitable sharing of perspectives and views. Furthermore, I have added clearer instructions to better guide the students' selection of suitable Visual Explorer® images.

Starting the course with this activity has changed the way I approach the course. The activity has enabled me to begin the course with the key message that students, as professionals and individuals, bring different experiences, beliefs about the world, and research-related competencies to their own conceptualizations of research. It also supports an underlying principle of the course: that differences should be both acknowledged and respected as students develop their own capacities to engage in research-related activities in their unique professional settings. Furthermore, the Visual Explorer® activity appears to help some students reduce their own anxiety about engaging in research and improve their level of confidence in their abilities to design and carry out research projects.

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3. Taking Students Down the Rabbit Hole to Offer an Experiential Understanding of Completing a Master of Arts Research Project

KATHY BISHOP AND CATHERINE ETMANSKI

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Rationale

To offer graduate students an experiential understanding of their upcoming capstone research journey, we, the authors, have staged a three-hour workshop outdoors (on the grounds of our university) based on Lewis Carroll's (1990/1865) fictional tale, *Alice's Adventures in Wonderland*, and following Joseph Campbell's (1968) three-part monomyth structure (departure, initiation, return). We call the session: "*Down the Rabbit Hole Capstone Journey*." For this session, we invite learners to take an embodied journey down the rabbit hole by tuning into the personal call for adventure, identifying their active stories, and initiating a journey of discovery by passing through the milestones of doing a Master of Arts

capstone. A capstone is a research project or thesis to be completed as partial requirement for completing a Masters of Arts degree.

The *Down the Rabbit Hole* Capstone Journey enables students to gain a high-level conceptualization and understanding of the overall research process, key milestones, potential pitfalls, enablers and/or highlights that they may experience when doing their capstone research. Although the prospect of conducting research may be exciting for some students, for others, the number of steps involved can feel daunting at times. By actively participating in this *Down the Rabbit Hole* Capstone Journey, students have an embodied experience of going through the steps of research, albeit mythically. In this way students gain not only an intellectual understanding of the research process but also experience a range of feelings and learn different ways they may navigate obstacles along the way. The staging of the capstone as such enables students to have insights and gain potential strategies they may draw upon when doing their actual capstones. In this way the capstone research process can be demystified.

For faculty, the *Down the Rabbit Hole* Capstone Journey offers a way to creatively provide an overview of the process of research and work on a deeper level with students about what they may experience when doing their research. Through the experience, faculty can debunk the notion that a capstone will unfold in a uniform way because there are many challenges and opportunities that may arise when meeting key deliverables and milestones. While debriefing this experiential activity, faculty can help students with this new learning overcome any concerns or fears that they may have in doing their research, strategize how they might plan for the unexpected, and put in place support systems. This activity may also act as a catalyst for faculty to offer other creative ways to enhance student learning in other areas of their teaching.

The overall purpose of the activity is for students to have an experiential and symbolic experience of completing the capstone journey, including some of the trials and successes along the way. Some of the key learning outcomes for students are to:

- recognize and describe key milestones in doing a research project;
- examine and differentiate between different stages of the research along the way;
- foster a sense of agency through exploration, risk taking, and fun to develop research capabilities;
- discover the power of community and the need at times to ask for help/help others; and
- explore the capstone research journey in a playful way as a reminder to enjoy the process.

This activity is based on: strong adult education principles rooted in experiential education (Kolb, 1984; Kolb & Kolb 2017), embodied and whole person learning (Amann, 2003; Yorks & Kasl, 2006, 2002), transformation (Dirkx, 2006; Mezirow, 2000; O'Sullivan & Morrell, 2002; Taylor & Cranton, 2012), and reflection (Schön, 1984). As well, we draw upon arts-based (Knowles & Cole, 2008; Leavy, 2015), theatre-based (Ackroyd & O'Toole, 2010; Boal, 2002; Norris, 2009; Saldaña, 2011), and nature-based activities (Plotkin, 2003; Plotkin 2008; Sharmer & Kaufer, 2013).

Overview

The *Down the Rabbit Hole* Capstone Journey follows the format of a research project. Within Royal Roads University's School of Leadership Studies, our students are expected to complete applied action-oriented research which includes having a partnering organization. As a result, key milestones have centered around the student capstone handbook, which highlights such tasks as: (1) confirming organizational partner and supervisor, (2) submitting a supervisor nomination form, (3) finalizing proposal with supervisor, (4) completing a letter of agreement, (5) securing ethical approval, (6) engaging in data collection, (7) undertaking data analysis, (8)

writing the final report, (9) writing a reflective practice integrated paper, and (10) submitting a final organizational partner evaluation. For this activity, we have mapped out a campus walking loop for students to travel as a journey (structured as departure, initiations, and return) with corresponding milestone stations and associated activities to complete, as shown in Appendix A.

We have a cast of characters (inspired by *Alice's Adventures in Wonderland*) the students meet as they journey through the various milestone stations. Two key characters are Mad Hatter who acts as the overall facilitator and Rabbit/Joker (complete with mask, a big clock, and pre-made rabbit/joker cards) who acts as a trickster, both helping and offering challenges on the journey, and attending to time by shepherding students through the course. Other characters include Administrator (who ensures forms are complete), Ethics Reviewer (who makes students jump through hoops, literally using hula hoops), Cheshire Cat (who stands at crossroads to ask students which way they are going), and Tweedle Dee and Tweedle Dum (who attend to the data analysis station which includes handing out bags of puzzle pieces). Our delivery team meets beforehand to clarify roles and tasks and review a handout (see Appendix B). The Mad Hatter starts the activity and sends students on their way with a handout of the journey and what they need to complete (see Appendix C). As students make their way along the path (or “down the rabbit hole”), the characters meet and greet them. The activity culminates with students returning to the place they started, where we lead them through an imaginary convocation ceremony and celebrate their success. Once this is done, we come out of character and debrief the activity.

When debriefing the activity, we have time for both individual reflection and group dialogue. For individual reflection, we ask students to take a moment to write down what happened in this experience (as objectively as possible), key reflections, any scholarship they can recall that may link to what they did, and learnings they will take away as a result. These reflection questions model Kolb's (1984) experiential cycle: concrete experience,

reflective observation, abstract conceptualization, and active experimentation. For the group dialogue, we engage the large group conversation by asking questions structured around Kolb again, such as: What happened? What came up for you, either personally or symbolically? Did anything surprise you? How does this link to your upcoming capstone? What will you do differently now as a result? We also ask specific questions around milestones and learning at each milestone station.

For an overview on setting up and implementing your own *Down the Rabbit Hole* Capstone Journey, see Table 1.

Table 1
Setting up and implementing a Down the Rabbit Hole Capstone Journey

Step	Activity
1	Envision what a <i>Down the Rabbit Hole</i> Capstone Journey could look like for your students.
2	Determine the structured overview of the session (length, location, purpose, structure) based on adapted key milestones from your capstone handbook (or equivalent). (See Appendix A as an overview/script example).
3	Recruit a delivery team (cast of characters). Assign roles and tasks (See Appendix B). Clarify purpose, process; and ensure each person has the correct props. Two key props for the rabbit are a big clock and rabbit/joker cards. A big clock serves to heighten the time element; it can be adjusted depending on whether you want students to speed up or slow down as they progress. The rabbit/joker cards are cards which offer both enhancers and pitfalls on the research journey (See Appendix D). Students can choose whether they take one or not, which gives them agency. On the day of the activity, be sure to factor in time to set up and account for the weather conditions. You may choose to adapt the activity to do indoors.
4	Give Students a Capstone Journey Handout (See Appendix C). Run the activity. Have fun.
5	Debrief afterwards to help students make individual and collective meaning.

Reflections

Down the Rabbit Hole Capstone Journey can be a powerful experience for students. It takes time to plan and prepare and can be confusing for students if not set up clearly. Colleagues who are recruited may not feel clear or confident in playing a role; therefore, it is important to have preplanning sessions as well as to offer a script with key deliverables. The clearer and more confident people are in engaging in the activity, the more successful the activity will be. Also, the role of the Rabbit/Joker is key in facilitating the process. Be sure to use a mask that is not frightening to the participants. When I (Kathy) first played this role, I used a white paper mâché mask that caused students great angst. After the activity, students gave me a happy cartoon rabbit mask for the benefit of future students engaging in the activity.

For each *Down the Rabbit Hole* session we run (Bishop & Etmanski, 2021), we adapt it to the people, place, and purpose. We pay particular attention to co-creating the learning space (Bishop & Etmanski, 2021; Etmanski, 2014). We invite our students to co-create safe and brave spaces (Arao & Clemens, 2013) as well as accountable spaces (Ahenkorah, 2020) with us. “This acknowledges that at times we may feel uncomfortable or choose to take risks, or that we may enable spaces of grace where we accept people however they show up, trusting the process will deepen our understandings and connections” (Bishop, et al., 2019, p. 6). For further lessons on creativity and action research, see Etmanski and Bishop (2017).

Conclusion

By going “down the rabbit hole,” we provide students with a symbolic and lived experience of completing a capstone research process. Just as the capstone process itself is a way of integrating

the theories, competencies, skills, and methods students have learned up to this point in their Masters of Arts education, the *Down the Rabbit Hole* Capstone Journey is a way of integrating lessons learned and supporting students in making meaning about achieving key research milestones through an emergent process. Norris (2000, p. 40) cited McLeod's observation that there are five major ways of making meaning: through word (privileged in education) and number (privileged in science); and through image, gesture, and sound (privileged in art). Furthermore, as noted by Cranton and Kasl (2012), there are "several ways in which people revise their perspectives (cognitive, extrarational, social, relational, artistic, and intuitive). Each path leads to transformative learning in a different way" (p. 397). By facilitating a *Down the Rabbit Hole* Capstone Journey, we offer students a creative, fun, and potentially transformative learning experience to understand research milestones and some potential pitfalls, amplifiers, and strategies to support them when they engage in their actual Masters research.

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Appendix A: Overview/Script Example Down

the Rabbit Hole Capstone Journey

Note: This overview was given to colleagues who helped deliver the *Down the Rabbit Hole* Capstone Journey activity on campus of Royal Roads University. The campus grounds include lawns with a wide open grassy area as well as a forest trail.

Purpose: To have an embodied experience of completing the capstone research journey, including some of the trials and successes along the way. To do so in a playful way as a reminder to enjoy the research process.

2.15 pm Meet on Lawn/Administration Area

Opening script:

Departure: Mad Hatter and Rabbit/Joker to set up the activity.
Banter to lead into activity

Mad Hatter: Your journey is on trail"

Rabbit/Joker "Trail? Trial! Trail or Trial?"

Mad Hatter: For the beginning of the journey- everyone needs to do 3 tasks before they head into the trail. Each station will have further instructions. First is to find a Supervisor and an Organizational Partner .

Rabbit/Joker: Find a Supervisor and an Organizational Partner! We all play different roles in life, so for this journey you will be both your self on the journey and a support to others. What role will you play? Organizational Partner or Supervisor? [Rabbit/Joker puts either an Organizational Partner or Supervisor sticker on back of student] Remember this may be tricky!

Mad Hatter:

1. So your first task is to find a Supervisor. With your Supervisor, go to Tree 1 where the Administrator is.
2. Get nomination form. Fill it out. Get yarn and 3-legged race to Tree 2 (Tweedle Dee and Tweedle Dum will be there to oversee).

3. At Tree 2, Deposit Supervisor nomination form in box. Untie from your Supervisor. Pick up Organizational Partner form. Find an Organizational Partner . Get yarn. 3-legged race back with Organizational Partner to Tree 1.
4. Submit Organizational Partner form. Then run to Tree 3.
5. At Tree 3, Get capstone administration form. With your Supervisor and Organizational Partner 3-legged race back to Administrator at Tree 1.
6. At Tree 1 submit completed capstone administration form. Pick up checklist and go to start of trail (Ethics bench).

Character	Location/ Milestone	Tasks	Props
Administrator	Admin Area	Find a Supervisor.	Nomination Form
	Tree 1	Do Nomination form. 3- legged race with Supervisor to Tree 2	Yarn for Leg Ties
	Tree 2	Deposit Nomination form in box.	Box for nomination form
		Untie from Supervisor. Pick up Organizational Partner form. Find an Organizational Partner 3- legged race with Organizational Partner back to Tree 1	Supervisor form Yarn for leg ties
	Tree 1	Untie from Organizational Partner	Organizational Partner form
		Submit Organizational Partner form Run to Tree 3	Box for Organizational Partner form
	Tree 3	Pick up capstone administration form	Capstone administration form
		Find your Supervisor & Organizational Partner 3-legged race back to Tree 1	Yarn for leg ties
	Tree 1	Submit completed capstone administration form	Box for capstone administration
		Get Checklist Be direct to ethics station	Checklist Directions for ethics

At Ethics Bench

1. Pick a card. Take a hula hoop and do the number of rotations.
2. Get Checklist checked. (Ethics reviewer asks a question before checking, i. e., What is informed consent? What is power over? Who are your participants?)

3. Proceed on trail

Character	Location/ Milestone	Tasks	Props
Ethics Reviewer	Ethics	Pick a card	
		Take a hula hoop and do the # of rotations on the card.	Deck of cards (Aces-5)
		Return to Ethics Reviewer.	7 hula hoops
		Ethics reviewer asks a question (ie. What is informed consent? What is power over? Who are your participants?)	Note: May have to wait their turn –just like in real life – only 7 ethics reviewers
		Ticks off checklist	Checklist checks
		Points out direction of the trail to proceed.	Directed onward

Point of Choice

Cheshire Cat asks – Which way will you go? Answers – it's up to you. Pick a path. Your choice.

Character	Location/ Milestone	Tasks	Props
Cheshire Cat	Crossroads		Fork A leads to Data Analysis Area
		Keeps repeating only: Pick a path.	Fork B has 3 signs on the path.
		Smiles mischievously.	1. What made you come this way? 2. You could keep on this way but you may not graduate with your cohort 3. Go back and take the other trail to complete today's journey

Data Analysis Area

Tweedle Dee & Tweedle Dum/ Quality Controllers 1&2

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1. Get puzzle piece package and puzzle board or paper.
2. Complete puzzle.
3. Return to table. Shows Tweedle Dee or Tweedle Dum.
4. Receives Reporting instructions/paper. [Reporting instructions – *Your task is now to do some reporting. Look at the picture on your puzzle. What do you see in the context of your own capstone project? Consider some words or ideas. Use the magazines to cut out words or images to describe what you have found*]
5. Complete Report.
6. Return to table. Shows Tweedle Dee or Tweedle Dum.
7. Tweedle Dee or Tweedle Dum asks a question (i.e: 1 minute of dialogue = how many pages of transcript? (2) What type of validity are we seeking in action research (authenticity and trust worthiness rather than reliability and generalizability)
8. Get Check mark.
9. Get Instructions for Reflective paper and proceed onward.

Character	Location/ Milestone	Tasks	Props
Tweedle Dee & Tweedle Dum/		Get puzzle piece package and puzzle board or paper	Puzzle packages
	Data Area	Complete puzzle Return to table. Show Quality Controller.	Reporting instructions given.
	Data Collection	Receive Reporting instructions/paper Complete Report. Return to table. Shows Quality Controller.	Magazine s, paper, scissors, glue
* Rabbit/ Joker's tomfoolery at this area	Data Analysis	Quality Controller asks a question, such as: What type of validity are we seeking in action oriented research? Answer: authenticity and trust worthiness rather than reliability and generalizability	s Question
Role – tricks, support, timing, ensure everyone at 3.00pm lawn.	Final Report	Get Check mark. Get Instructions for Reflective paper and proceed onward	Checklist checked Give Instructions for Reflective paper

Reflective Area

[Reflective paper instructions – Time to reflect on your journey. Continue over the bridge and find a spot before you exit the trail. In your journal, take a moment to write about

1. What happened in this experience so far?
2. What has been something that has come up for you, either in what you think or how you feel?
3. Any scholarship that you recall that may link to this experience?
4. What may be something you take away as a result?

Once you are finished journaling, return back to the lawn, to Tree 1 where Administrator is. You will show your journal entry is complete to Administrator (she will not read it, but will look to see that you have done it to get your check mark and instructions for next step).

Character	Location/ Milestone	Tasks	Props
	Admin Area		
Students	Reflective Practice Integrated paper	Write in journal.	Asked to bring own journal

Administration Area

1. Administrator looks to see if journal entry complete. Gives checkmark and Organizational Partner final form.
2. Need Organizational Partner to check off as final assessment
3. Hand in Organizational Partner form and Completed checklist.
4. Go to convocation area.

Character	Location/ Milestone	Tasks	Props
		Student shows journal.	
	Admin Area	Gives Organizational Partner Final form	Student journal.
Administrator	Tree 1 Organizational Partner Final Review (or Thesis committee Review)	Needs Organizational Partner to check off. Hand back in. Check off Checklist and hand in. Go to convocation spot	Organizational Partner Review form Checklist. Note: Administrator gives all completed checklists to Mad Hatter who has them all when starts Convocation ceremonies
Mad Hatter	Admin Area	Leads a convocation visualization	Certificates & checklists returned to students
	Convocation Spot	Journey complete Back to classroom	Celebrate! Individual and class debrief

Appendix B: Roles and Tasks Handout for Delivery Team

Down the Rabbit Hole Capstone Journey — Roles and Tasks for Delivery Team

Mad Hatter/ Overall facilitator

- You set up the overall journey
- Once journey begins, wander to the first station and then the trail and help out as needed.
- You close the journey with convocation ceremony
- Everyone returns to classroom, and you facilitate the debrief, asking questions around:
- Make sure students put right forms in right boxes (e.g., Supervisor nomination needs to come from the student and go to the e-mail box)
- Everything from Organizational Partner goes to e-mail box

Rabbit/ Joker (complete with mask, a big clock, pre made rabbit/joker cards – see Appendix D for ideas to put on cards)

- You act as a trickster, both helping and offering challenges on the journey.
- You play off the concept of “Trail or Trial?!”
- You have a big clock, stressing the need to hurry. You can adjust the clock accordingly to ensure everyone gets through.
- You have a set of rabbit/joker cards and you invite people to take one as they enter the trail.
- Once all students have passed into the trail, wander the trail and help people out.
- Position yourself past the data analysis station and offer more rabbit/joker cards; this time ensure the cards are all supportive (like – Smile, it’s all good).

Administrator

- Make sure students put right forms in right boxes (e.g., Supervisor nomination needs to come from the student and go to the e-mail box)
- Everything from Organizational Partner goes to e-mail box
- Everything from Supervisor goes to admin box
- You will tick off boxes on their checklist as needed

- Direct students to start of trail for ethics
- You will also take care of Organizational Partner evaluation at the end
- Supervisors will place tokens in the admin box at the end

Ethics Reviewer

- Governing the number of rounds of review by the Supervisor, by the Ethics Board member, and any reviews by the secondary partner organization
- Students choose a card from your hand to indicate the number of rounds of review. Only the 2, 3, and 4 cards are in your hand to represent 2, 3, or 4 rounds of review!
- Be flexible with people's hula hooping skills as this is only meant to be symbolic
- Mad Hatter (Person A) will join you to serve as the Organizational Partner's review board and will have a hand of Aces and Jacks. If they pull a Jack, they come back to you to pull a card representing the number of rounds of review.
- You will tick off the ethics box on their checklist once they have completed.
- Keep track of people who have completed your station by checking of the list of participants that has been given to you.
- Once everyone is through, you can move along the trail and help out as needed

Cheshire Cat

- Standing at the Crossroads and smiling mischievously.
- One road leads to the data analysis station and the other road leads deeper into the forest.
- As people approach you, ask them: Which way will you go?
- Generally speaking, your response is: It's up to you. Pick a path. Your choice.
- If they ask a specific question about which way to data

analysis, or to get the project done more quickly, or to graduate with their cohort, you can direct them toward Persons F and G.

- If their question is vague, you answer like the Cheshire Cat, which is if they don't know where they're going, then it doesn't really matter which path to take.
- Keep track of people who have completed your station
- Also, keep track of those who go deeper into the forest in case we have to look for them
- Once everyone is through, you can move along the trail and help out as needed

Tweedle Dee and Tweedle Dum, you facilitate the data analysis station. Tasks include:

- You facilitate the data analysis station.
- Hand out bags of puzzle pieces, a board for the puzzle, and two sticky notes.
- When they return with the completed puzzle on the board, check that the sticky notes are labeled Chapter 4 and Chapter 5.
- They keep the sticky notes and you keep the puzzles.
- Give the students two tokens and send them along
- Keep track of people who have completed your station
- Once everyone is through, return to the lawn/administration area.

Appendix C: Capstone Journey Handout for Students

Down the Rabbit Hole Capstone Journey – Capstone Milestones

Adapted

Name:

The following list of project milestones is adapted from your Capstone Handbook, pp. 17-18.

Project Milestones

1 Confirm Sponsor and Supervisor

- Once you find someone to agree to be your Organizational Partner, attach yourself to them with a piece of yarn.
- Once you find someone to agree to be your Supervisor, attach yourself to them with a piece of yarn.
- Note that there are many people looking for Organizational Partners and Supervisors at once so you may (or may not) end up in a cluster.
- Supervisors can accept up to a maximum of **FIVE** students at once.

2 Submit Supervisor Nomination Form

- You, in your capacity as the student, must fill out the nomination form and submit it to Administrator in the e-mail box. **It must go in the e-mail box or it will not be accepted.**
- Once this step is complete, Administrator will tick of the boxes for these first two steps.

3 Finalize Proposal with Supervisor

- For the purpose of this activity, finalizing your proposal means writing your overarching research question and your current

thinking on possible methods for each participant group on a sticky note.

- Make two copies of this sticky note Proposal.
- Attach one sticky note to one Letter of Agreement for the Supervisor.
- Attach the other sticky note to the other Letter of Agreement for the Organizational Partner.

4 Complete Letter of Agreement

- Both the Supervisor and the Organizational Partner must sign off on a copy of this letter after receiving your (sticky note) proposal.
- Give one copy to your Supervisor and one copy to your Organizational Partner.
- Your Supervisor must submit this to Administrator in the admin box. **It must have the sticky note proposal attached and go in the admin box, directly from the Supervisor, or it will not be accepted.**
- Your Organizational Partner must submit this to Administrator in the e-mail box. **It must go in the e-mail box, directly from the Organizational Partner, or it will not be accepted.**
- Once these steps are complete, Administrator will tick off the Proposal box and the Letter of Agreement box.
- Once your Supervisor nomination, your proposal, and your two letters of agreement are complete, you may untie yourself from your Supervisor and Organizational Partner and proceed to the Ethics Review station.

5 Ethics Review Process

- Draw a card at the ethics review station. This first card represents the number of rounds of edits your supervisor asks

you to make on the initial draft of your ethics review form.
Spin the hula hoop this number of times.

- Draw a **second** card at the ethics review station. This second card represents the number of rounds of edits the REB member asks you to make on the completed version of your ethics review form. Spin the hula hoop this number of times.
- Draw a **third** card at the ethics review station. A Jack means you have a secondary review in your organization. An Ace means you can move forward on the trail.
- If you drew a Jack, draw another numbered card to see how many rounds of review you must complete. Spin the hula hoop this number of times. Once this final review is complete, ask for your Ethics review process box to be checked and proceed to the next station.
- If you drew an Ace, ask for your Ethics review process box to be checked and proceed to the next station.

6 Data Collection

- As you continue along the path, notice your surroundings and gather insights for your journey. When you arrive at the data collection station, pick up a package of puzzle pieces and two sticky notes.

7 Data Analysis and Writing

- Complete the puzzle.
- Looking at the puzzle, imagine three themes that relate to your inquiry question. Write these three themes on one sticky note. Write the title – Chapter Four – at the top of this sticky note and place it on the puzzle.
- Looking again at the puzzle, imagine three recommendations that relate to your inquiry question. Write these three

recommendations on the other sticky note. Write the title – Chapter Five – at the top of this sticky note and place it on the puzzle.

8 Complete Final Report

- Return your puzzle with sticky notes to the station. The quality controllers there will give you two tokens. Hold onto these until you are back on the lawn where Administrator is. Once there, you will give the tokens to your Supervisor.
- Check off boxes 6, 7, and 8 and move along!

9 Reflective Practice Integrated Paper

- Time to reflect on your journey. Find a spot before you exit the trail. In your journal, take a moment to write about
 - what happened in this experience so far,
 - what are your reflections,
 - any scholarship that may link, and
 - what may be something you take away as a result?
- When you are finished, return to the lawn where Administrator is and find your Supervisor.
- Flip open your journal long enough to demonstrate to your Supervisor it's complete.
- Hand over the tokens to your Supervisor to represent completing your final report and your reflective paper. Your Supervisor must submit these tokens to the admin box on your behalf.
- Administrator will check box 9.

10 Organizational Partner submits Organizational Partner Evaluation to Administrator

- Pick up a Organizational Partner Evaluation form from Administrator.
- Find your Organizational Partner.
- Ask them to fill out the form and submit it to the e-mail box on your behalf.
- Administrator will check box 10.
- You are now waiting for convocation.

Appendix D: Example of Rabbit/Joker Cards Messages *Down the Rabbit Hole* Capstone Journey — Example of Rabbit/Joker Cards Messages

Rabbit/Joker cards offer both enhancers and pitfalls on the journey and include messages for interpretation, questions, and practical wisdom and advice. They can be easily constructed with index cards and printed messages, such as:

1. How do you lead while you are learning? Stop for 3 minutes and notice what is going on around you.

2. It's okay to throw away things that aren't working for us. Before you move on, take a moment to think about something you may choose to let go.

3. You are feeling like an Imposter. On RRU website, you watch RRU Writing Centre's 3 minute video around "Gradschoolitis" and understand these feelings are normal and get some tips. Bravo! Onward!

4. You just realized that your supervisor is crazy; your project is

crazy; everyone is crazy! Sit for 5 minutes to check what some of your mental models and assumptions are at this moment

5. Your supervisor gets ill and can no longer supervise you. Find a new supervisor before you continue on.

6. Your Organizational Partner takes a new position and can no longer partner with you. Find a new Organizational Partner, within the organization or may need to find a new organization, before you continue on.

7. Your Organizational Partner doesn't answer e-mails Shout out: Three strategies I may do to deal with my Organizational Partner who doesn't answer calls is: 1. _____ 2. _____ 3. _____

8. You try to collect data over summer holidays and no one is available. Shout out: Three strategies I may do to deal with no one being available over the summer holidays are: 1. _____ 2. _____ 3. _____

9. When you are on your 8th rewrite, what may you do so that you do not become demoralized? Write it down.

10. Your Inquiry Team is well chosen and gives you lots of support. What may have been one strategy that you engaged to build the support you needed? Before moving on, write this strategy down.

11. Your Supervisor is really helpful. Before moving on, write down 3 possible values that you may share in common.

12. Your data collection goes smoothly. Smile

13. Smile It's all good!

14. You are feeling like you can't do this. Take 5 Deep breaths and recognize you are doing this.

15. When are you going to stop asking, am I going to make it? Wait long enough until you figure out you are making it.

16. Trust the process, understand the process, lead the process. Which is it at this moment for you?

17. At the entrance of this trail was the sign: "Please use caution on these trails. Thank you." What one other sign have you noticed so far?

18. There will be dragons. Take note of how this makes you feel.

19. You have cleared space in your life to write up your project. Remove role-identity tag from your back. In the future, explain to your advisee that you needed to take care of your self. Help him or her find a new person to fill your role if necessary.

20. You have cleared space in your life to write up your project. Remove role-identity tag from your back. In the future, explain to your advisee that you needed to take care of your self. Help him or her find a new person to fill your role if necessary.

21. BLINDED (put on this blindfold). Call for help on the spot until someone removes your blindfold.

22. You have a conversation with three different potential supervisors to see who is the best fit for you. Bravo! Walk on with the confidence you have earned.

23. Take a moment to recall one gem you have learned so far. How may you draw upon it in the future?

24. What is your leadership stretch? Breathe deeply as you contemplate your answer.

25. You have writer's block. Shout out for all to hear: *The three elements of a well written RRU academic paper are an intro, body and conclusion. In other words: Tell them what you are going to tell them, tell them and tell them what you told them.*

26. What is one question you have right now about this process?

27. Look around. Who do you think may be in the most need? Go up to them and ask if they would like some help from you.

28. "Old maps are useless for sailing through uncharted waters"
Ralph Stacey (1992) Managing the unknown.

29. According to Wesley, Zimmerman & Patton (2006), an example of a simple system is baking a cake, a complicated system is sending a rocket to the moon, a complex system is raising a child. When you add in human factors, systems become complex. What is meant by the statement: complex is emergent practice? Discuss with the Rabbit.

30. Who has a stake in your project? And, how may "meddling others" apply?

31. What does self-directed learning mean? In way ways may you engage in it?

32. New concepts emerge and you have to go back to the literature. Sit for 5 minutes before resuming the path.

33. No one replied to your survey. Take a moment to consider one thing you may do as a result?

34. 40 people confirmed for your World Café, but only 3 showed up – Take a moment to consider one thing you may do as a result?

35. You have an unforeseen personal challenge. What one value may you have to call upon to get you through?

36. Remember to keep on leading the process

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4. Kicking Off the Literature Review: Identifying Key Terms

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Rationale

Students are often required to prepare a research proposal as part of a graduate research course. A key element of any research proposal is a formal literature review; however, some students have indicated this is the first time they have been asked to do a formal literature review.

A literature review is a complex task consisting of multiple steps including an evaluation of sources, the technical aspects of searching for sources including google and library searches, mapping of concepts and frameworks, and, finally, writing the review (Creswell & Creswell, 2018; Jesson & Lacey, 2006; Rewhorn, 2018; Rowley & Slack, 2004).

However, before any of these steps can be performed, students must first identify key terms relevant to their research topic. A key term can be a single word, a group of words, or a phrase that is used as a search term with tools such as library catalogues or Google

Scholar. Key terms can be challenging to identify, “not just because they combine old and new methods and meanings, but also because they figure in ordinary speech as well and crop up in different disciplinary contexts” (Bru et al., 2016, p. 2). These key terms will direct the literature search, be reflected in the research question, determine the materials to be read, be used in library and google search engines, and structure the final literature review (Efron & Ravid, 2019; Winchester & Salji, 2016).

Students often will research only the primary idea within their research topic. For example, a student recently wrote a research proposal exploring why customers shop at thrift stores. The literature review focused solely on thrift store branding. The work would have been strengthened by adding in any of the following: customer motivation, donor motivation, recycling behaviour, perception of shopping in thrift stores versus brand new, or the concept of thrift. Students are not generally experts in the fields in which they are writing, and so may not be able to deconstruct a research topic in such a way as to identify relevant key terms. In a study of 70 postgraduate students who were asked to identify their challenges with literature reviews, 71% of the students identified that they were not “able to detect which reading materials is relevant” and 55.7% did not “know where to focus” (Hei & David, 2015, pp. 142–143).

When students have difficulties and ask instructors for support, an instructor or supervisor may provide a key term or an author as a starting point (Rewhorn, 2018). Or the student may be referred to the university librarians. However, I have found it is useful to walk the students through a short exercise to help them understand the core principles. This learning activity will provide a technique that students can use to identify these key terms. There are three key ideas that I want students to grasp:

- research can be messy and that is perfectly normal;
- different researchers have different worldviews and therefore individuals may have different perspectives on what the key

- terms should be; and
- how to perform the first step in the literature review: identifying key terms.

The exercise provides another tool for students to put into their research toolbox. Students will be able to identify materials from other subject areas that might be relevant and to search for sources “conventionally and imaginatively” (McMenamin, 2006, p. 133).

The exercise assumes this is the first step in a *diverge, converge and repeat* approach to performing a literature review. Students begin by creating a broad list (diverge) of key terms for the searches. After performing this exercise, students will be ready to review the literature and narrow down (converge) what specific topic areas are relevant for their research. Then students explore the topic areas more broadly (diverge), before refining the specific key term concepts (converge).

Overview

The exercise can be done in class or online and assumes students can be put into groups for the work. Students will perform group work and then present results back to the class. The exercise takes approximately 40 minutes. This includes: the introduction and instructions (5 minutes); student work (10 minutes); presentations (15 minutes); and debrief (10 minutes).

Prior to beginning this exercise, I ask the student to identify a possible research topic. This research topic is not used within the exercise but having the topic allows students to draw parallels from the exercise to their own work. Students should have read material on how to create a literature review so that they have a basic understanding of the steps and why they are creating key terms. Specifically, students should understand the role of the

literature review, whether it be to identify similar research or situate a theoretical framework.

In preparation for the exercise, I prepare research topics for the students. Sample topics are provided below. The research topic description should be broad but clear enough for the students to get a grasp of the topic. In this exercise, one research topic is required for every two groups. If there are six groups in the class, there should be three research topics. Prior to the class, I analyze the research topic and create a sample list of key terms. This allows me to guide the discussion after the exercise. I also prepare a sample topic for demonstration purpose. An example is provided below.

Execution

The exercise begins with the following steps.

1. I begin by explaining why identification of key terms is important within the literature review. I demonstrate the exercise to the students.
2. I explain the exercise to the students, noting that each group will present back a list of key terms and recommendations for the next steps.
3. The students are put into groups and each group is provided with a short research topic description. The same topic will be provided to two groups. If there are six groups, three topics will be required. For example, a sample topic could be:

The number of fluent speakers of Indigenous languages is declining every year. Indigenous peoples are using technology to teach language. Is technology helping students to learn and therefore increase the number of fluent speakers?

4. The students are then responsible to walk through the topic and identify nouns and verbs they believe are important, as shown in the example:

The number of *fluent* speakers of *Indigenous* languages is *declining* every year. Indigenous peoples are using *technology* to teach *language*. Is *technology* helping students to *learn* and therefore increase the number of fluent speakers?

5. The students then examine each identified word and write a brief description of why they identified it as shown in the example below. These are generally framed as questions but may also be comments or other words that come to mind:

Fluent: What does it mean to be? Is there a definition?

Indigenous: How is this different from other languages? What is an Indigenous language?

Declining: How is it measured? Why is it important?

Technology: What kind? Are there examples? How does it work?

Language: What is language? What is unique about Indigenous language?

To Learn: How do people learn? How do people teach language?

6. The students then examine these questions and create key terms to use in their searches.

Fluent: Definition of fluent. Definition of fluent for Indigenous languages. Writing fluency. Speaking fluency.

Indigenous language: What is an Indigenous

language? Indigenous language. Heritage languages. Indigenous languages in Canada.

Declining: Counting Indigenous speakers. Indigenous language proficiency scales. Indigenous language usage in communities.

Technology: Technology and Indigenous language. Technology theory. Technology and language case studies. Technology language revitalization.

Language: What is language? Indigenous language. Indigenous language and ways of living. Language and culture.

To Learn: How to learn a language. Indigenous ways of learning. Indigenous languages teaching online. Teaching language.

7. One student from each group will present the suggested key terms and recommendations back to the class.

The following are sample research topics for the exercise; however, I recommend creating topics that are related to the specific program or course.

- During the COVID-19 pandemic, there were individuals who either strongly believed or did not believe the coronavirus was real. Reactions in some instances seemed to be related to what was being seen in the news and social media.
- Farmers are growing crops that are not used for human food. Instead, crops are used for biodiesel, plastics, alcoholic beverages, ethanol gas, and batteries. Yet there are challenges with climate and land scarcity that have led to food shortages.
- Canadian companies talk about diversity and inclusiveness. Companies report on what they are doing within the company to shareholders and to the governing boards. There is literature stating that diversity and inclusion initiatives make a difference to a company's bottom line. How do we know what

impact these initiatives are having?

Debriefing

I recommend debriefing with the students after the exercise is completed. Suggestions for debriefing include the following:

- Compare the outcomes of two groups doing the same topic.
- Ask students how they went about it, what was easiest to do, and what was hardest to do.
- Ask students how they think the key terms can be used.
- Explain how this relates to the literature review. Ask students how they can apply the activity.

I conclude the exercise as follows:

1. I highlight where the exercise fits into the process of the literature review. For example, researchers use key terms to search for literature and resources on the topic. This is a wide net or a divergent exercise which researchers can use to understand the topic and narrow down their area of interest.
2. I highlight that different results do not necessarily indicate that the answers are wrong. Researchers will identify different key terms based on worldview and life experiences.
3. The students' next step is to begin a literature search. This activity allows for a seamless transition to the topic of performing searches for the literature review.
4. Once the student begins to review the literature, the student can use other techniques to find additional sources. For example, a review of an article's reference list could yield additional sources or foundational authors repeated within the literature.
5. Finally, the student should be directed to use the librarian

services if difficulties arise.

Reflection

Research is a challenging topic. Courses are generally not long enough to cover all the material and the literature review is often glossed over. Students are expected to learn everything there is to know about research during a course and thus participating in their learning is important.

Students tend to expect more out of this exercise, and it is therefore important to properly situate this exercise into the overall research project.

Note that if given too much time to do the exercise, students overthink what is required and lose focus. Keep the student exercise time short while remembering that a group of five needs time for all five voices to be heard.

Most importantly, take the time to relate this back to real-life research examples and the students' upcoming assignments. This will help connect the activity to the real world and real research.

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5. The Windows of Vulnerability and Forming Identity as Researcher

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Rationale

Willison et al. (2017) describe the Research Skill Development (RSD) framework as presenting the skills associated with research in manner that is intentional, coherent, and sequential. The RSD features “a continuum of five levels delineating the extent of autonomy – the conceptual space – that students are given or experience when using skills associated with research” (p. 432). Autonomy may be considered as the degree of scaffolding necessary for learners to become self-directed. The five levels are as follows: Prescribed (Level 1), Bounded (Level 2), Scaffolded (Level 3), Open-ended (Level 4), Unbounded (Level 5) (Willison et al, 2017, pp. 432-433). The authors explain that “shifting towards higher levels of autonomy does not imply permanence but rather is a flexible process where students may need to revert to low levels of autonomy to aid an increase in competence and rigour” (p. 432). The RSD framework is applicable to learners ranging from early childhood to doctoral study in graduate school.

Research courses are an integral part of post-secondary

programs, supporting students' continued development of research-related skills including problem solving and critical thinking. However, students may be reluctant to take the research courses in their programs (Mulvenon & Wang, 2015; Rand, 2016) based on negative previous experiences leading them to doubt their own abilities. For example, students new to graduate programs continue from where their undergraduate research courses ended. Some of these early experiences may have been unpleasant and students may need encouragement and strategies when they formally reembark upon the theoretical study of the research process. In his introductory research textbooks, John Creswell explains that students have already learned valuable research skills through their life experiences that include "solving puzzles, employing a long attention span, using a library, and, of course, writing out your thoughts" (Creswell & Guetterman, 2019, p. 24).

Students who are research-reluctant may be pleasantly surprised to discover they already possess the background experiences and skills to be successful in their research endeavors. However, they will not realize this until the research courses are in progress. At this stage, students may be receptive to new ideas and practices as they approach their research courses and examine their own misgivings about research for the purpose of realizing the full benefit of their programs.

Students may become willingly vulnerable, and this state of mind is necessary when beginning a new program of study. Thus, post-secondary students' windows of vulnerability will be open for good purpose and this sensitivity may have a deep and lasting effect, potentially influencing the way students perceive themselves as graduate students and beginning researchers.

It is important for post-secondary students to be reminded of how identity and self-esteem are constantly evolving for people of all ages, and these may be particularly challenged at the beginning of a new program. For example, "Identity encompasses the memories, experiences, relationships, and values that create one's sense of self. This amalgamation creates a steady sense of who one

is over time, even as new facets are developed and incorporated into one's identity" (Psychology Today, 2021, para. 1). Students will be confronted with challenges in their programs of study that may test their self-esteem and confidence.

Instructors can plan research courses with thoughtfully sequenced assignments and activities formulated to engage students in their interests, reinforce confidence, and encourage autonomy. By experiencing some early successes in research courses, students may start to entertain themselves as beginning researchers. As they start to see themselves in this light, students will need to engage with the course material, seek support from instructors, and interact with students in their programs to create beginning researchers' communities of practice, which may be another form of encouragement and support.

Overview

The following series of assignments presents an approach for leveraging the window of vulnerability available to instructors and is based on post-secondary students being self-directed, problem centered, and motivated to learn. The activities are experiential, utilizing students' background knowledge, offering choices, and are relevant to their current roles as students. Students receive constructive feedback on their assignments from other students and instructor in a supportive environment. The beginning activities reinforce the relevancy of students' past experiences with consuming and creating research to establish a foundation for further study. Table 1 shows the names of the assignments and relative weightings. The column on the right-hand side indicates the level of learning autonomy. Each assignment has been summarized in Appendix A.

Table 1

List of assignments, weightings, and placement along the Continuum of Learning Autonomy (Willison et al., 2017)

Assignments	Weightings	Learning Autonomy
Online Activities		
Ice-breaker Activity		Bounded (Level 2)
1) Reflections on Research – Discussion Forum	5%	Scaffolded (Level 3)
2) Participation in Discussions (Twitter)	5%	Scaffolded (Level 3)
3) Reflections on Research – Discussion Forum	10%	Scaffolded (Level 3)
4) Research Ethics – TCPS 2: CORE 2022 (Tutorial)	5%	Prescribed (Level 1)
	25%	
Literature Review		
5) Literature Review	40%	Open-ended (Level 4)
	40%	
Research Proposal Assignments		
6) Presentation of In Progress Research Proposal	10%	Scaffolded (Level 3)
7) Research Proposal	25%	Unbounded (Level 5)
	35%	
Total 100%		

In this section, the two assignments that use Twitter: Assignment 2: Participation in Discussions (Twitter), and Assignment 3: Reflections on Research – Discussion Forum (Twitter) are described. Using Twitter, a popular form of social media, can provide many educational benefits for students and instructors. Twitter as a new

literacy practice has been found to positively impact learning settings (Ricoy & Feliz, 2016), transcend classroom-based activities (Li et al., 2018), provide an interactive and collaborative space to share information (Tur et al. 2017), encourage critical thinking (Abella-García et al., 2019), increase student engagement (Kunka, 2020), provide a foundational technology for teachers (Greenhalgh et al., 2016), activate faculty towards taking a more participatory role (Gleason, & Manca, 2020) and allow academics a wide audience to promote their research and to stay updated in their field (Meyer, 2018).

Assignment 2: Participation in Discussions (Twitter)

The purpose of this assignment is for graduate students to use Twitter to interact with each other along with educators, innovators, researchers, and leaders in education and research. Tweets to the instructor and colleagues in this class should include information sources that students consider interesting and relevant for the further development of their research interests and for supporting the introductory study of research in education. In the tweets, include text along with links, images, and video.

A Twitter hashtag for this assignment is provided to students by the instructor. During the two-week time frame for this assignment, students send eight to ten tweets per week to the hashtag. Franker's (2018) Twitter rubric will be utilized to assess students' participation in the assignment.

Graduate students who are new to Twitter should engage the following tutorials during the time frame for this assignment.

Twitter Tutorials

If you are not familiar with Twitter, access the Help Center (Twitter, 2023), then click Using Twitter. Select a few of the introductory tutorials and read documentation that addresses how to use Twitter.

Other Activities

- Access Twitter's Help Center, then scroll down to the Search and Trends section.
- Use the search feature in Twitter to locate resources (for example, people, organizations, documents) to support the development of your research interests.
- Locate four or five resources to further the development of your research topics and share with our group's hashtag.
- In her blog post, Meyer (2018) advises academics to use Twitter to help keep them up to date in their fields and to share research. Consider how academics promoting their research could be of assistance to you in the pursuit of your topics of interest?
- Find three or four researchers in your areas of interest and follow them. Share your findings by way of our group's hashtag.
- If time permits, explore some of Twitter's other features and capabilities.

Refer to Appendix B for a copy of the handout for Assignment 2: Participation in Discussions (Twitter).

Assignment 3: Reflections on Research – Discussion Forum

The purpose of this assignment is for graduate students to follow-up on one of their tweets and to inquire where the information originated. Students should select one tweet encountered during Assignment 2. The topic of the chosen tweet should be examined using STAR* evaluation: source, timeliness, accuracy, and relevance (Townsend et al., 2020). While there are many different types of evaluation methods and criteria available, the last component of STAR* includes an item that draws from evaluators' affective domain to describe any emotions the source item may have evoked.

Students are instructed to formulate their initial postings in the 550 to 600-word range and add a new discussion forum, then upload their content. Generally, the initial postings are due on a Friday. Students read responses from other graduate students and respond to any two of the postings by Sunday. Fray's (2006) rubric (Appendix C) for assessing participation in an asynchronous discussion forum is provided to students beforehand.

The discussion forum-type of assignment involving reading articles, posting text, and responding to other students' posts may be overutilized in courses. Some variety for structuring students' responses can be implemented with *Digital #PowerUps: Hashtags to empower higher-order student engagement in online discussions* (University of Central Florida, 2020). Digital powerups, as keywords, are displayed as hashtags connected to writing prompts within online discussions. For example, by including specific levels of Bloom's Cognitive Taxonomy (McGuire, 2018, p. 30) as powerups, students' participation in discussions may be scaffolded and better support critical thinking. For each discussion forum, students are instructed to promote engagement from multiple entry points by including two or three powerups in their posts along with one or two powerups in comments to other students.

Reflection

When implementing the series of assignments listed in Appendix A, including the two assignments that involve Twitter, in several different offerings of the same research course over the years, I have experienced how active learning has many different facets that work together. In the foundational work of Chickering and Gamson (1987, as cited in Kunka, 2020), a framework comprised of seven key actions to encourage student engagement was presented as follows “... student-faculty contact, cooperation among students, active learning, giving prompt feedback, emphasizing time on task, communicating high expectations, and respecting diverse talents and ways of learning” (Kunka, p. 320).

I have noticed that after the two-week Twitter assignment ends, many students new to Twitter continue to use this form of social media for the duration of the course to support the development of their research interests. While conducting these activities and assignments, I have observed that many graduate students may start research courses with an uneasy feeling, but as the courses progress, they began to settle and focus on their work. This positive progression is due to several factors. For example, students are relieved to hear they will be selecting their own topics for assignments and then are better able to focus on studying components of the research process within the course sequencing. Students can better think of themselves as researchers and engage in that work when they are relaxed, focused, and stable. The potential benefits for students perceiving themselves as beginning researchers start when they experience early success with the first assignments. Students can build on this success as they encounter content and assignments associated with the next topics in the research course.

I have observed it is of considerable benefit for students, engaged in the first assignments, to share aspects of their past research experiences with their new colleagues and begin to engage in self-

determined learning by having the freedom to choose their own topics to develop the three sequenced research assignments on their own terms. Including aspects of past experience, choice, and relevancy in the assignment sequencing is in keeping with Blaschke and Hase's (2015) description of heutagogy, which emphasizes the cultivation of autonomy, capacity, and capability in adult learners.

Willison et al. (2017) describe the Research Skill Development (RSD) framework as presenting the skills associated with research in manner that is intentional, coherent, and sequential. The RSD features "a continuum of five levels delineating the extent of autonomy – the conceptual space – that students are given or experience when using skills associated with research" (p. 432). Autonomy may be considered as the degree of scaffolding necessary for learners to become self-directed. The five levels are as follows: Prescribed (Level 1), Bounded (Level 2), Scaffolded (Level 3), Open-ended (Level 4), Unbounded (Level 5) (Willison et al, 2017, pp. 432-433). The authors emphasize that "shifting towards higher levels of autonomy does not imply permanence but rather is a flexible process where students may need to revert to low levels of autonomy to aid an increase in competence and rigour" (p. 432).

The research course discussed here supports the further development of graduate students' autonomy by including assignments based on the five levels of Willison et al.'s (2017) Research Skill Development (RSD) framework. As the learners in the course may perceive themselves as vulnerable during formal study of the research process, special emphasis has been placed on assignments based on Level 3, which feature scaffolding. The intent of these assignments, especially Assignments 2 and 3 that were outlined, is to support students as they overcome misgivings about research, develop new confidence in themselves, realize additional levels of autonomy, and acquire more sophisticated research competencies as they continue to form identity as researchers.

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Appendix A: Series of Assignments

Online Activities

Ice-breaker Activity

Assignment 1) Reflections on Research – Discussion Forum (initial research interests and possible research methods)

Assignment 2) Participation in Discussions (Twitter)

Assignment 3) Reflections on Research – Discussion Forum (evaluate an online source)

Assignment 4) Research Ethics – TCPS 2: CORE 2022 (Tutorial)

Literature Review

Assignment 5) Literature Review

Research Proposal Assignments

Assignment 6) Presentation of In Progress Research Proposal

Assignment 7) Research Proposal

Ice-breaker Activity

This ice-breaker activity will introduce students to each other and will assist in initiating a supportive learning community, as this research course is the first in the program. The results of the activity will be shared as posts to a discussion forum. (There is no evaluation rubric for this activity, and it is supposed to be a little informal, just to get students thinking about research)

1) Student watch the video called “What kind of researcher are you?” (NorQuest College Library, 2023) at https://libguides.norquest.ca/tutorials/research_activities

2) Then, students briefly describe what kind of researchers they are based on the outcome of the activity.

3) Next, students respond to the following questions.

- Have you conducted any formal research in the past? If so, briefly describe the project(s).
- Have you done any informal research in the past? If so, briefly describe the project(s).
- Have you enjoyed these projects? Do you like doing research?
- Are you a user or a creator of research knowledge? Briefly explain.
- What are some of your research interests? List a few of these here. (Some of these topics may be pursued by way of the upcoming assignments in the course.)

4) Add a new topic to the discussion forum and provide your content. Please read the responses from other graduate students and respond to three of the postings.

Assignment 1) Reflections on Research – Discussion Forum (initial research interests and possible research methods)

The purpose of this assignment is for graduate students to reflect on potential research topics and complementary research methodologies. Students will provide a brief description of their initial research interests, perhaps based on descriptions from the ice-breaker activity or from a new research interest that has

recently emerged. At this point in the course, students simply list and describe some of the areas of Education Research they are interested in and will narrow some of these down soon to arrive at possible topics for assignments. (Some of these could be pursued by way of the upcoming assignments in the course.)

From a list of research methodologies provided to students, including quantitative, qualitative, combined, and twenty-first century approaches, students pick two different types that could be used to pursue one of their research topics. Students make their first choice of research approach, along with an alternative method to use, and discuss how the choices could be used in the context of their research topics. The postings should outline specific examples from students' own lives and practice as educators and educational leaders. (As a starting point, students may refer to the course textbook, along with conducting general searches on the WWW for some additional information to inform their choices for research methods.)

The length of the initial posting should be in the 400 to 450-word range. Add a new topic to the discussion forum and provide your content. Students read the responses from other graduate students and respond to two of the postings. Fray's (2006) rubric for assessing participation in an asynchronous discussion forum will be utilized.

Note: Structuring students' responses with *Digital #PowerUps: Hashtags to empower higher-order student engagement in online discussions* (University of Central Florida, 2020) may provide more variety for the participants.

Assignment 2) Participation in Discussions (Twitter)

The purpose of this assignment is for graduate students to use Twitter to interact with each other, along with educators, innovators, researchers, and leaders in education and research. Tweets to the instructor and colleagues in this class should include information sources that students consider interesting and relevant for the further development of their research interests and for supporting the introductory study of

research in education. In the tweets, include text along with links, images, and video. During the two-week time frame for this assignment, sending eight to ten tweets per week will serve as a guideline. Franker's (2018) Twitter rubric will be utilized to assess students' participation in the assignment.

Assignment 3) Reflections on Research (Twitter)

The purpose of this assignment is for graduate students to follow-up on one of their tweets and to inquire where the information originated. Students should select one tweet that was encountered during the two-week time frame for Assignment #2) Participation in Discussions (Twitter). The topic of the chosen tweet should be examined using STAR* evaluation that involves the following parts, source, timeliness, accuracy, and relevance (Townsend et al., 2020).

The length of the initial posting should be in the 550 to 600-word range. Add a new topic to the discussion forum and provide your content. Students read the responses from other graduate students and respond to two of the postings. Fray's (2006) rubric for assessing participation in an asynchronous discussion forum will be utilized.

Note: Structuring students' responses with *Digital #PowerUps: Hashtags to empower higher-order student engagement in online discussions* (University of Central Florida, 2020) may provide more variety for the participants.

Assignment 4) Research Ethics – TCPS 2: CORE 2022 (Tutorial)

The purpose of this assignment is for graduate students to explore the ethical dimensions of research, as they begin to plan a research proposal. The Government of Canada's Panel on Research Ethics promotes the ethics of research involving humans by way of the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2* (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council, 2022). The TCPS 2: 2022 Course on Research Ethics (CORE) tutorial includes eight models focusing on topics from the TCPS 2: 2022 that are applicable to all research across discipline and methodology.

When students have successfully completed the CORE 2022 tutorial, they will receive a certificate of completion from the website. Upload a copy of the certificate to the assignment module in Moodle and completion marks will be given for this assignment.

Assignment 5) Literature Review

The purpose of this assignment is to give graduate students an opportunity to apply their skills in conducting a literature search and organizing the search results by specific categories. This assignment will benefit course participants in preparation for the literature review component of a research study by becoming aware of potential literature in a field of interest. Students will be provided with a suggested procedure to follow to engage in a literature search, however, students will choose their own research topics to pursue.

The rubric to assess this assignment will be available to students in the learning management system (LMS). Upon completion of this assignment, students upload it to the LMS.

Assignment 6) Presentation of In-Progress Research Proposals

Graduate students will briefly share the in-progress versions of their research proposals with colleagues and instructor, by describing their topics and how their research formulations have been developing so far. These in-progress reports are conversations with the class about topics, initial searches, guiding questions, research approaches, along with describing the significance and importance of the study. Students choose a form of digital media, for example, MS-Power Point, Google Slides, Prezi, Powtoon, Slide Share (or another type of presentation means that students are familiar with) and develop an overview of their research topics providing details from the sections of their research proposals. The major benefits of these presentations are for colleagues and course instructor to provide comments and suggestions to each graduate student to help align and further the work needed for Assignment 7) Research Proposal.

Students will add a new topic to the discussion forum and upload their presentations (document or URL). Students read the responses

from other graduate students and respond to two of the postings. Reason Systems' (2015) online presentation rubric will be utilized to assess the assignments.

Note: Structuring students' responses with *Digital #PowerUps: Hashtags to empower higher-order student engagement in online discussions* (University of Central Florida, 2020) may provide more variety for the participants.

Assignment 7) Research Proposal

The purpose of this assignment is to support graduate students as they apply their learning from this research course to refine and rationalize a researchable problem after having reflected on a topic of interest and conducting a literature review. This assignment will benefit graduate students by providing an opportunity to formally plan a research project.

As a starting point for Assignments 6 and 7, continue with the same area of research interest that was used for Assignment 5) Literature Review and develop the area further. One possible framework for this assignment is to create the following sections in the proposal.

- Title Page

- Table of Contents (optional)

- Introduction

 - Statement of Research Problem

 - Definition of Terms

- Literature Review (Add the edited version of your Assignment 5 here.)

- Research Approach

 - Specific Research Questions

 - Description of the Research Method

 - Ethical Considerations

 - Research Participants, Sample Size, Research Sites, Time Frame.

- Discussion

 - Significance of Your Study

- References

Appendices (draft versions of surveys, interview questions, etc.)

The rubric to assess this assignment will be available to students in the learning management system (LMS). Upon completion of this assignment, students upload it to the LMS.

Appendix B: Assignment Handout

Assignment 2: Participation in Discussions (Twitter)

Weighting: 5%

Due date:

The purpose of this assignment is for graduate students to use Twitter to interact with each other, along with educators, innovators, researchers, and leaders in education and research. The tweets to the instructor and colleagues in this class should include information sources that you consider interesting and relevant for the further development of your research interests and for the introductory study of research in education. In your tweets, include text along with links, images, and video. During the two-week time frame for this assignment, sending eight to ten tweets each week will serve as a requirement.

Your instructor will provide the hashtag to use for this assignment. The rubric to assess this course requirement has been included at the end of this document.

Twitter Tutorials

If you are not familiar with Twitter, access the Help Center (Twitter, 2023), then click Using Twitter. Select a few of the introductory tutorials and read documentation that addresses how to use Twitter.

Other Activities

- Go to Twitter's Help Center, then scroll down to the Search and Trends section.

- Use the search feature in Twitter to locate resources (for example, people, organizations, documents) to support the development of your research interests.
- Locate four or five resources to further the development of your research topics and share with our group's hashtag.
- In her blog post, Meyer (2018) advises academics to use Twitter to help keep them up to date in their fields and to share research. Consider how academics promoting their research could be of assistance to you in the pursuit of your topics of interest?
- Find three or four researchers in your areas of interest and follow them. Share your findings by way of our group's hashtag.
- If time permits, explore some of Twitter's other features and capabilities.

Assessment Rubric (Franker, 2018)

Criteria	Unsatisfactory (0)	Approaching Proficiency (1)	Proficient (2)	Exemplary (3)
Content	Original tweets do not provide any new resources or ideas and add no value to the discussion.	A few original tweets provide new resources or ideas that add value to the discussion.	Most original tweets provide new resources or ideas that add value to the discussion.	Original tweets consistently provide new resources or ideas that add value to the discussion.
	Tweets are poorly written and do not stimulate dialogue and commentary.	A few tweets are written to stimulate dialogue and commentary.	Most tweets are written to stimulate dialogue and commentary.	Tweets are creatively and succinctly written to stimulate dialogue and commentary.
Frequency	Fails to meet the required number of tweets per week.	Falls just short of meeting the required number of tweets per week.	Meets the required number of tweets per week.	Exceeds the required number of tweets per week.
	Creates and sends tweets too infrequently to meet the requirements.	Creates and sends tweets somewhat less often than required.	Creates and sends tweets as often as required.	Creates and sends tweets more frequently than required.
Hyperlinks	Tweets either contain no hyperlinks or selected resources have no relevance to the topic.	Some tweets include hyperlinks, but not all resources are relevant to the topic.	Tweets include hyperlinks to resources relevant to the topic.	Tweets include accurate hyperlinks to resources that enhance the topic.
	Does not shorten DOIs and/or URLs.	Inconsistently shortens DOIs and/or URLs to stay within the 280-character limit.	Uses shortened DOIs and/or URLs most of the time to stay within the 280-character limit.	Effectively shortens DOIs and/or URLs as needed to stay within the 280-character limit.

	Most or all hyperlinks connect to out-of-date resources.	Hyperlinks connect to many out-of-date resources.	Usually selects hyperlinks that represent the most current resources about the topic.	Selects hyperlinks representing the most current resources about the topic.
Mechanics	Writes with numerous major errors in grammar, capitalization, punctuation, and spelling. (More than five errors per tweet).	Writes with major errors in grammar, capitalization, punctuation, and spelling. (three or more errors per tweet).	Writes with minor errors in grammar, capitalization, punctuation, and spelling.	Writes with no errors in grammar, capitalization, punctuation, and spelling.
Comments and Contributions	Responses to tweets are negative and disrespectful and provide no value to the discussion.	Some responses to tweets are negative and disrespectful and/or provide little value to the discussion.	Most responses to tweets are positive and respectful while providing a meaningful addition to the discussion.	Consistently responds to tweets with positive, respectful, and succinct comments while providing a meaningful addition to the discussion.
	Retweets are inappropriate for the assigned discussion topic and show little awareness of the purpose and etiquette of retweeting.	Retweets are often inappropriate for the assigned discussion topic and fail to include the source's Twitter username.	Most retweets are appropriate for the assigned discussion topic and include the source's Twitter username.	Retweets are appropriate for the assigned discussion topic and always include the source's Twitter username.

Appendix C: Assignment Handout

Assignment 3: Reflections on Research – Discussion Forum

Weighting: 10%

Due date:

The purpose of this assignment is for graduate students to follow-up on one of their tweets and to inquire where the information originated. Pick one tweet that you encountered during the two-week time frame for the Participation in Discussions (Twitter) assignment. The topic of the chosen tweet should be examined using STAR* evaluation that involves the following questions (Townsend et al., 2020). Create your assessment in a separate document and formulate your assignment within the 550 to 600-word range.

1) Source

- Who is the author? Are they reputable? What are their qualifications?
- Do they provide unbiased and factual information?

Read Laterally

- Reading laterally means opening up new search tabs to search the person or organization to confirm legitimacy.

2) Timeliness

- When was it published?
- Does this matter to your assignment?

Is the Information up to Date?

- It is important to use up to date information, meaning that it was recently published and that they used current information for sources.

- Not all websites have this information clearly stated, so be cautious about relying too heavily on online resources.

3) Accuracy

- Are there errors?
- Can you verify their references?

Consider the Sources

- Find the original information and evaluate it for yourself.
- What conclusions do you come to on your own?

Check Previous Work

- Look to see what other credible sources say about the topic so you see the whole picture.

4) Relevance

- Does the information meet your assignment's requirements?
- Does it answer the question?

5) * (This is the asterisk from STAR*)

- How does it make you feel?

Check Your Emotions

- A lot of online information is meant to provoke and inflame our emotions.
- Emotions can impair our ability to think critically, so check in with yourself to see how you are feeling. Angry? Disgusted? Irritated? Pause and reflect.

Do you plan to use this information source as part of your literature review assignment? Briefly explain.

Once you have completed your assessment, access this assignment's discussion forum, add a new discussion topic, and paste your assessment in the new post. Initial postings are due Friday by 11:55 p.m. and responses to colleagues are due Sunday by 11:55 p.m. (These responses will be considerably shorter compared to your initial posting.)

Assessment Rubric (Fray, 2006)

Criteria	Unacceptable (0)	Acceptable (1)	Good (2)	Excellent (3)
Frequency	Does not participate at all.	Participates one to two times on the same day.	Participates three to four times but postings not distributed throughout the assignment.	Participates five or six times or more throughout the duration of the assignment.
Initial Assignment Posting	Posts no assignment.	Posts adequate assignment with superficial thought and preparation; doesn't address all aspects of the task.	Posts well developed assignment that addresses all aspects of the task; lacks full development of concepts.	Posts well developed assignment that fully addresses and develops all aspects of the task. (Length of assignment is within the suggested word range.)
Follow-Up Postings	Posts no follow-up responses to others.	Posts shallow contribution to discussion (e.g., agrees or disagrees); does not enrich discussion.	Elaborates on an existing posting with further comment or observation.	Demonstrates analysis of others' posts; extends meaningful discussion by building on previous posts.
Content Contribution	Posts information that is off-topic, incorrect, or irrelevant to discussion.	Repeats but does not add substantive information to the discussion.	Posts information that is factually correct; lacks full development of concept or thought.	Posts factually correct, reflective and substantive contribution; advances discussion.
References and Support	Includes no references or supporting experience.	Uses personal experience, but no references to readings or research.	Incorporates some references from literature and personal experience.	Uses references to literature, readings, or personal experience to support comments.

Clarity and Mechanics	Posts long, unorganized or rude content that may contain multiple errors or may be inappropriate.	Communicates in friendly, courteous and helpful manner with some errors in clarity or mechanics.	Contributes valuable information to discussion with minor clarity or mechanics errors.	Contributes to discussion with clear, concise comments formatted in an easy to read style that is free of grammatical or spelling errors.
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Kevin MacLeod is Associate Faculty in the School of Education and Technology at Royal Roads University. MacLeod has an extensive teaching background, having taught secondary and post-secondary students in person and online, including teaching at one of the first online grade schools in Alberta. MacLeod holds a Doctor of Philosophy in Educational Contexts (Educational Research Specialization in Interpretive Studies) from the University of Calgary. His dissertation research was an inquiry into the emergence of online schooling in Alberta. MacLeod holds a Master of Education (Teacher Development and Practice) from the University of Lethbridge, and undergraduate degrees in education and commerce from the University of Alberta.

6. Using Twitter to Drive Research Literacy and Foster a Learning Community in a Blended Graduate Course in Research Methods

CHASETEN REMILLARD AND TYLER NAGEL

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In a blended graduate research methods course for the Master of Arts in Professional Communications degree program at Royal Roads University, students are required to join a Twitter community comprised of their cohort peers and the instructors. As part of their weekly activities, students are called upon to post media stories and internet sources that have used or profiled academic research. Students then find the original source of research and discuss the “translation” of the findings presented in the original paper compared with how those findings were presented in the media or internet source.

Rationale

The internet is the primary location for the dissemination of information and news in our contemporary society (Geiger, 2019). As consumers of information, we are confronted with a problem of too much information, rather than too little. As such, we are less in an information economy, since information is now plentiful, and instead in an attention economy (Nixon, 2017).

An important learning outcome of any graduate program is the capacity of students to understand and comment on academic research. This need is magnified in a professional communication program, where the general standards for the quality of communication of the output or comment (beyond the quality of scholarship in the output or comment itself) is higher than in other programs (science, for example). In industry, professional communicators are tasked with the job of winning audience attention for the purpose of achieving their organization's goals. As such, students in a graduate program in professional communication need to be both excellent consumers of academic research and effective, ethical communicators of such research.

Learning to “consume” research is a skill that is too easily taken for granted. Such a skill takes time and practice to develop and demands regular and repeated exposure to academic writing and research. The skill is often undervalued by students, as they tend to focus on the end results of research, rather than the process of research (Gross & Latham, 2007).

Subsequent to consumption of research is communication and comment. After graduation, many professional communication students assume or continue in roles where they actively make decisions about what information is most strategic to share with their organization's stakeholders and the public. As such, another important learning outcome of a graduate degree in professional communication is the cultivation of a higher level of discernment as both research consumers and media gatekeepers. Students and

practitioners of professional communication have an ethical responsibility to curate and disseminate academic research in a transparent and accurate manner, especially in a new media ecology of “fake news” (Stroud, 2019).

The goal of this learning activity is threefold: to deepen the critical capacities of graduate students as consumers of academic research, to sharpen their communication skill, and to foster student insight into ethics of the act of research dissemination .

As such, the activity fosters active and authentic learning by replicating some key elements of research that occur outside the academy. As Piwowar et al. (2018) found, more than 50% of academic research is only available through subscription or purchase. The activity replicates how research circulates outside the “flat” information flow (Gayo-Avello, 2015) of academia, which gatekeeps accredited and authoritative sources, building student capacity to address the data-driven moderation of social media. Finally, the assignment creates an opportunity for students to become more cognizant of the ways in which information is “stolen” and used by others (Bailey & Trudy, 2018) in contemporary communication practice.

Creating public communication is a mental and emotional challenge for many individuals, and professional communications students (even at the graduate level) are no exception. Creating communication in a closed or anonymous environment can be an effective steppingstone in developing confidence to communicate publicly, and as a secondary benefit, has been shown to dramatically increase student engagement and confidence in classroom situations (Holzer et al., 2014).

Overview

In this activity, students create a learning community on Twitter. Each student creates an “avatar” account with a specific username

that is unique to the course and their own first name and initial. For example, a student named Jane Doe in the course COMM656 would adopt a newly minted Twitter account with the name COMM656_JaneD. Likewise, all the other students and instructors would use the same naming protocol for their accounts.

For these new accounts, students are requested not to follow any other Twitter user except other students and instructors in the same course and not to use hashtags (to limit public exposure to the discussion). In so doing, the community of learners is largely anonymous (because of their use of course-specific avatars), and the discussion can remain relatively private (since the group of students only follow each other and make no efforts to connect to larger discussions through hashtags). Alternatively, students can choose to make their accounts private.

Students are organized into teams and each team is assigned a specific week of “Twitter Leadership.” During this week, the team is called upon to find media and online sources that have used academic research. They must also find the original research featured in the media or online source. They then post the original story or webpage link, and they make available the original academic research that was used in the article. Other students then read both the media or online “translation” of the research and the original research. The leadership team poses guided questions and polls within Twitter about the research and is tasked with stimulating debate and discussion.

At the end of the week, the leadership team writes a reflection on the week’s activity. The reflection calls upon the team to comment on the main points of discussion, the accuracy of the “translation” of the research into the media sources, and the ways they think the research could have been better communicated. The reflection also calls upon the team to comment on elements of method and methodology as exemplified in the research paper.

Importantly, part of the discussion led by the Twitter Leadership team and their reflection is about the ethics of “translation” their example presents. Students discuss the ways the research is

simplified, distorted, and expressed differently than perhaps the original authors intended. Such discussion typically reinforces the important role research plays in shaping public discourse, how professional communicators contribute to that discourse, and the need for better literacy about how research is created (and its limitations).

The use of an online and open platform such as Twitter, versus a closed in-course forum-based discussion board, has three advantages. First, students can easily access Twitter from their mobile devices and can participate and engage with each other more readily throughout their day. Such regular engagement is beneficial in building a stronger learning community (Hu & Hui, 2012).

Second, the nature of the assignment demands an efficient mechanism to connect content on the web and on various media platforms. Social media, by its design, is a platform that enables such sharing easily and efficiently (Kietzman et al., 2011). Often students can find different manifestations of the same research in different media forms and can share these new sources with classmates quickly and in real-time.

Third, as a mode of communication, Twitter (and other social platforms) demand a unique form of writing and communicating. Important information is shared on social media, and professional communicators need to understand and feel comfortable using social platforms to communicate complex ideas (such as those found in academic research). Platform use functions as a form of literacy in professional practice.

Assessment of the activity is both quantitative and qualitative. From a quantitative perspective, engagement in the discussion is measured through the number of tweets per week, up to a predefined ceiling each week (to ensure an equal distribution of engagement over the term). For example, each tweet may achieve 0.15 percent of a participation grade, to a maximum of 1.5 percent per week. In a ten-week course, such engagement would account for 15 percent of the course total.

Qualitatively, weekly Twitter Leadership teams are assessed on both the quality of questions and sources brought to the discussion and summarized in the team's reflection as well as by how well the reflection engaged with larger questions of method and methodology covered in the course material.

Students tend to react to the assignment in one of two ways. Some students resist the assignment's use of Twitter as a platform, possibly out of a lack of familiarity with the platform, or a biased appraisal of the usefulness (or rather, lack of usefulness) of social media in general. The viewpoints of these detractors tend to evolve over the duration of the course, but some students cling to their disavowal of Twitter, in some cases despite admissions that the platform was more useful and engaging than originally considered.

Other students are truly excited to use a social media platform to discuss and connect with academic research as found in media and web sources. These students tend to lead the charge in the discussions and often bring many interesting and timely examples of how research is constantly being mobilized in a variety of public sources and discourses.

Overall, from informal and formal feedback, students enjoy the assignment and state they have learned a lot from each other and feel a higher level of research literacy and platform familiarity after the course.

Reflection

The assignment carries both some clear benefits and challenges from an instructor's perspective.

Beneficially, enabling students to connect to academic research outside of the confines of library searches enlivens research for students and drives an understanding of how academic research can (and is) used to support various social actions, decisions, misinformation, and discourses.

Online discussion forums have become a standard for online interaction in courses. By the time students reach graduate studies, they may have taken dozens of courses that involve discussion forums and a fatigue may set in as forums are overused (Lieberman, 2019). This assignment offers a respite from forum-based engagement activities, and a fresh approach to fostering class discussion. From an instructor perspective, it can be invigorating to moderate a new form of class discussion – “a change is as good as a holiday.”

In the future, the assignment could be expanded. A possible addition to the assignment could be student-curated research that contributes or contradicts statements made in online media and news sources. Students could be tasked to contribute to public discussion about research, but with the aim of expanding public literacy of how research is designed, conducted, and disseminated.

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interested in questions of social and environmental justice. With expertise in visual and professional communications, Remillard's research includes topics as varied as homelessness, Canadian artist Bill Reid, hockey art, the Alberta Oil Sands, and shark films. Despite this eclecticism, he consistently interrogates how images gain and transmit meaning and how these meanings serve to reinforce particular "ways of seeing" ourselves and the world around us.

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Tyler Nagel is an Associate Faculty member in the School of Communication and Culture at RRU, a full-time journalism instructor at SAIT in Calgary, and a PhD student at the University of Groningen. A communications scholar with a focus on journalism, Tyler teaches a variety of courses ranging from technical journalistic skills, to social media techniques, online storytelling and portfolio development, where he strives to blend traditional journalistic practice into contemporary online media. Nagel strongly believes in student-focused learning and employs teaching techniques that emphasize mentorship and collaboration over traditional lecture. As well as his teaching duties, Nagel has an active research program that includes rural community media, social media, fake news, misinformation and disinformation.

7. Creating Knowledge Products to Share Learnings and Inspire Change

CHERYL HEYKOOP; CATHERINE ETMANSKI; AND KATHY BISHOP

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Rationale

Do you recall that moment when you completed your thesis or dissertation and you were so excited about how it would change the world, only to realize that in all likelihood your thesis or dissertation might become a doorstop, or sit on a shelf and collect dust? The authors of this chapter certainly do. As such, when we redesigned the Master of Arts in Leadership (MA Leadership) program at Royal Roads University, we saw an opportunity to create possibilities for student research and learning to be shared, used, and applied in a more intentional way. We wanted to support knowledge translation in action to sustain real world change.

Over the last two decades, there has been an increased focus on knowledge translation (KT) to help ensure research informs and/or changes practice (See Li & Holmes, 2021). KT is a process often referred to in the health sciences; yet is synonymous with terms like knowledge mobilization (KM), knowledge exchange, knowledge transfer, research utilization, and research effectiveness.

Interestingly, there is no one definition for KT which tends to cause confusion about what KT is and what it is not (See Li & Holmes, 2021). However, according to Graham and colleagues (2006)—scholars who wrote a landmark paper on KT—“[k]nowledge translation is about turning knowledge into action and encompasses the processes of both knowledge creation and knowledge application” (p. 22). Similarly, when referring to KT in the context of health, the Canadian Institutes of Health Research (CIHR) (2016) refers to KT as “a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve the health of Canadians, provide more effective health services and products and can strengthen the health care system.”

Expanding on these ideas, Skipper and Pepler (2020) refer to knowledge mobilization (KM), as a process where “academics and partner organisations work together to co-create knowledge that can have a positive real-world impact” (p. 2). These authors contrast the process of KM with more traditional understandings of knowledge dissemination (e.g., publications, research reports, or presentations), observing that while dissemination may be more efficient for scholars themselves, it is limited in supporting change. Dissemination suggests “a more passive one-way flow of knowledge from scholarship to practice” (Skipper & Pepler, 2020, p. 2) while the process of KM allows for a more relational and co-creative way of working between and among scholars and their partnering communities and organizations. In essence, KT, KM, and the many other synonymously used terms, refer to processes and activities aimed at bridging the gap between research and real-world application or practice.

Recognizing the important role KT¹ can play in student research

1. For the remainder of this chapter we refer primarily to KT, while recognizing the overlapping and nuanced definitions of each related term.

projects, we chose to weave KT into the design of the second year of the MA Leadership program to intentionally create opportunities for students to translate their learning in accessible ways and facilitate real world application (and would also hopefully limit the possibility that hard work would collect dust on a shelf). We specifically embedded KT into the Engaged Leadership Project (ELP). The ELP is a 9-credit engaged, action-oriented project where students intentionally collaborate with a group of people (e.g., organization, community, network, or community of practice) around an issue or opportunity that is meaningful to the group of people and leads towards positive change. Unlike a more traditional thesis, the ELP is more practitioner-scholar oriented and offers opportunities for students to facilitate change projects. Projects can range from more traditional action research to: the facilitation of a program or policy initiative; or the co-creation of a documentary or visual installation. In essence, the possibilities are limitless.

At the conclusion of the ELP students are required to write a final report (approximately 30 to 50 pages) and create an associated knowledge product (AKP). The final report highlights their ELP process, findings, and recommendations and is grounded in literatures, whereas the AKP is a creative product intended to share and sustain the learnings and continue to inspire change with the group of people involved in the project. AKPs are developed in collaboration with the student's ELP partner and intended to respond to the partner and participants' needs and aspirations. Examples of AKPs include infographics, videos, interactive presentations, resource guides, and more. AKPs are one way in which students can share their research in an accessible way that supports the organization to facilitate change.

To support students to think innovatively about their ELPs and their AKPs we facilitate a session focused on knowledge translation while students are conceptualizing and developing their ELP projects. The session is intended to explore what KT (and KE and KM) means and consider how KT is applied throughout the research process. Further, the session seeks to inspire creative possibilities

and encourage students to consider how they can leverage KT in an effort to contribute to and sustain meaningful change. Initially this session was delivered face-to-face; however, as we've learned through our solely online delivery during COVID-19, this session is well suited—and perhaps more appropriate—to an online platform. Below, we describe how we explore KT with students in the second year of the MA Leadership program.

Overview

In advance of the session on KT, a reading list is shared with students. The reading list includes resources pertaining to KT, KE, and KM. The session then begins with an exploration of what knowledge translation, KE, and KM are, how they are different, and why they are important in the context of the ELP (and thesis). We offer a series of examples of AKPs from research projects including, among others, the work of the *ResiliencebyDesign Lab*, the play *Home is a Beautiful Word*, and *The Witness Blanket*, faculty research, and examples from previous students (see Ali, 2021 and Figure 1). In learning teams of three or four, students then engage in a conversation with their colleagues about how KT might inform their work and how they might share findings and learnings in ways that contribute to action/change. We also encourage students to have conversations with their ELP partner(s) to consider how they might create one or more AKPs to inspire and sustain change related to the ELP focus. Over the next six months students refine their ideas and submit their AKPs as a deliverable of their ELP. Figure 1 offers an AKP that is a visual representation of Megan Foster's research with Sport Manitoba. Below is an excerpt of published poetry that Huma Ali (2021, p. 259) shared about her reflections working as an emergency physician during the COVID-19 pandemic:

-April 2020

*I intubated you. But before I did, I held your face in my hands
and said*

“you’re going to be okay.”

You had COVID. You died, father of four.

I’m sorry I lied; I didn’t know any better at the time.

Figure 1

Example of Associated Knowledge Product



Associated Knowledge Product developed by Megan Foster for their Engaged Leadership Project with Sport Manitoba entitled: Sport Manitoba's Volunteer Game Plan. Used with permission, all rights reserved.

These AKPs and others submitted by students showcase the creative, innovative AKPs developed by students that demonstrate student research learning and skills in ways that extend beyond traditional academic writing.

Reflection

Focusing on KT within the context of student ELP capstone projects has been one important step on a path to inspire creativity amongst students about their projects and to consider how they can intentionally contribute to meaningful and sustained change. However, KT is only one step. As we move forward with the development of the MA Leadership program we recognize the importance of embedding conversations about KT within broader discussions about theory of change and research impact to help maximize impact and more meaningfully facilitate and sustain change. In these conversations it is also important to remind students to scale their AKPs to what is possible within the timeframe of their capstone and what will be most useful for the organization to facilitate and sustain change. Some students have

big ideas about what their AKP might be prior to beginning their capstone and we then need to support students to pivot and adapt their KT approach. Further, although we currently facilitate conversations regarding KT in year two of the MA Leadership program, we see opportunities to explore KT earlier on. Throughout the program students are creating KT outputs and we see opportunities to make explicit connections about KT as an integral process of learning and leadership.

Lastly, although we have been engaging students in conversations about KT and the opportunities that exist within capstones and AKPs, we have not yet been able to thoroughly dialogue with our community of instructors and supervisors about KT and the possibilities of what KT offers. It is important to us to raise KT as a topic within our faculty community of practice. We see KT as being an integral element of applied research and look forward to continuing to explore how we can work with students to create meaningful research outputs that contribute to and sustain change in real world contexts.

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Special thank you to Megan Foster and Sport Manitoba, who approved the sharing of the AKP!

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SECTION II

ENGAGING STUDENTS IN DEVELOPING RESEARCH QUESTIONS AND PROBLEMS

8. The Reflection Tree: A Systems Thinking Approach to Exploring a Research Topic

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Rationale

Articulating a compelling research problem to investigate is one of the key challenges that students face in designing an applied research project (Muganda, 2019; Juriševič, 2011; Booth et al. 2008; Bryman, 2007). Some of these challenges include narrowing the scope of the problem, making it personally and professionally meaningful to students, and relating it to their own sphere of experience (Juriševič, 2011). Furthermore, not devoting enough time and effort to suitably defining the research problem can have substantive consequences for the study's design, outcomes, and significance (Thomas, 2013).

The Reflection Tree activity focuses on helping students appreciate the power of reflection as a tool in developing a cogent and defensible rationale for investigating a specific research problem in an applied setting. It helps students in applied research methods courses to pre-plan the process of engaging in an inquiry into the real-world problem they are hoping to address. This activity has been used predominantly in courses that feature an applied

research requirement or in research methods courses which lead into action-oriented research undertaken as part of students' capstone project or thesis requirements. By the end of the activity, students are able to generate a concise research problem statement and can use the supporting reflections to help craft the first draft of the 'Background Context' component of their research study proposal.

The Reflection Tree uses a living systems metaphor and guided triad-based exploration to help students determine the links between the issue under investigation, their own values and beliefs, the benefits and challenges to solving the "problem," and their own capacity to use the inquiry process to affect change in the research setting. It has been adapted from Bailey's (1996) work on designing and leading whole system change using living system metaphors. Ross et al. (2017) have observed the value in having students reflect on their own orientations towards research as a foundation for designing a research approach that is both personally meaningful and professionally relevant. Employing metaphors helps people see new ways of understanding themselves as well as the organizational milieus they inhabit (Morgan, 2006). As Kendall and Kendall (1993) have noted, "Metaphors are the cognitive lenses we use to make sense of all situations. Intimately interconnected with the way we think, metaphors are fundamental in shaping reality" (p. 149).

Previous researchers have noted that employing metaphors helps students to surface unconscious perspectives, articulate assumptions, and explore connections related to their conceptual understanding of a phenomena (Pitcher, 2011; Steger, 2007; Moser, 2000; Lackoff & Johnson, 1980). Furthermore, using metaphors can be an effective tool for helping professionals better understand the need and opportunities for change in organizations (Morgan, 2006) which is one of the primary purposes of the action-oriented research assignment. Living systems metaphors provide a particularly powerful way to appreciate the opportunities for change because of their emphasis on inter-relationships, networks,

and adaptive cycles of growth and evolution (Fryer, 2015; Westley et al., 2006; Bailey, 1997).

Overview

The Reflection Tree activity involves a number of stages of participation augmented with clear instructions from the facilitator to guide students' engagement in each stage. The overall activity takes between 90 and 120 minutes to complete; it can also be divided into two shorter sessions with Stage One being completed in the first session followed by Stage Two and Three in the follow-up session. The following steps are taken to plan, organize, and implement the activity:

Stage One: Triad Activity

1. Participants are informed that they will be participating in several sequential activities aimed to help them clarify their research problem and to better understand the organizational context in which the problem is imbedded.
2. Participants are invited to group themselves into triads for Stage One. They are informed they will serve in three different roles within an hour-long period: (a) the applied researcher; (b) the interviewer; and (c) the recorder. They rotate through these roles so that each person has a chance to experience being interviewed, honing their interviewing skills, and developing their listening and recording skills.
3. The participant 'interviewer' will ask the 'researcher' a series of questions related to the topic they have chosen for the study. These questions, found in Appendix A, require learners to draw on their own life experiences in understanding the context of

their research as well as examining their own beliefs about the value and potential of applied research in their own professional setting.

4. The 'recorder' summarizes the researcher's reflections on the response sheet found in Appendix B.
5. After the interview is completed, the roles are shifted to enable participants to assume a different role. By the time all three interviews have taken place, each participant will experience all three of the different roles.

In preparation for Stage Two, after all researchers have been interviewed, the completed response sheets are handed to each of the participants who originally provided the responses.

Stage Two: Reflection Tree Activity

1. Participants are asked to review their responses on the sheet. Then, they are instructed to provide their response to each question in the appropriate place on the Reflection Tree template found in Appendix C. They can use the prompts provided on the Reflection Tree graphic found in Appendix D to guide them. Each of these prompts is aligned with one of the original interview questions found in the Appendix A interview guide.
2. After completing the Reflection Tree template, participants are requested to reflect on the following three questions and to record their own notes about their reflections:
 - What have you noticed about your own understanding of your project?
 - What part of completing the Reflection Tree was most surprising?
 - What was the most challenging?

Then, participants re-form their triads and share their perspectives on the three questions with their two classmates.

Stage Three: Debrief

The final stage focuses on a class-wide discussion of students' reflections on the activity and the new insights they have gained about their own projects. I also invite students to share questions or any unresolved dilemmas about their projects that emerged from their reflections during the session.

The Reflection Tree is followed by another activity in a subsequent session that is designed to help students draft a research question that relates to the problem they have articulated. Eventually, students re-draft versions of the research problem and the research question and integrate these into a research proposal outline which serves as one of the course assignments.

Reflection

The Reflection Tree is a reasonably complex activity with a number of distinct stages, so it is important to clearly describe these stages to the students. Care must be given to ensure sufficient time is allocated to each stage of the activity. It is not an activity that can be truncated or shortened because each stage is equally important to the overall outcome. A three-hour block of time is usually sufficient, but I have also split this activity over two shorter sessions when necessary.

I have made limited modifications to this activity because it has proven to be very successful in its original form, but two additions have been helpful. The first modification is to allow class time for students to complete the Reflection Tree template after

participating in the triad activity. Originally, this task was left for participants to do on their own time. Integrating the completion of the template into the overall process has given the activity more continuity and a better flow. As well, it now leads more smoothly into the subsequent component which is also newer refinement to the activity. This second addition involves having the students re-join their triads in Stage Two to discuss their responses to the three questions I posed about their experiences in completing the Reflection Tree template. This additional step helps students share their perspectives within a small group and also brings closure to the triad experience.

I have used versions of the Reflection Tree in research courses for over 24 years, both in domestic courses as well as in translated form for courses I have taught in China. I have also adapted this activity for use in an online course by setting up the triads as separate discussion forums and having the students post their completed Reflection Trees to a Padlet board. The benefit of this process is that students are able to view and comment on the Reflection Trees posted by their classmates.

I enjoy facilitating this activity. It has become one of the highlights of the research course for me because I am always energized by students' reactions to their participation. They consistently share that they find the reflection process to be illuminating and insightful. Being 'interviewed' and 'recorded' in the triad activity helps them to focus on thinking about their projects and their own research settings without having to do this reflection on their own. When I use this activity in face-to-face classes, I am able to do a 'walkaround' during this stage of the process to see how students are responding to the interview questions and provide any coaching needed to help them articulate their reflections. In the online course, I can check in with all the triad discussion forums to monitor their progress. Finally, having students use the Reflection Tree graphic in Stage Two to record their revised thoughts is a useful means of helping students view their projects through a

systems lens by understanding how the answers to the different questions relate to one another.

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Appendix A: Reflective Questions (The Reflection Tree)

With the help of a critical friend, respond to the following questions:

1. From your perspective, what is the “problem” you hope to understand or resolve in your inquiry?
2. Why is the problem important to you?
3. What are your beliefs about effective teaching and learning that impact this problem?
4. What in your past experience has influenced these beliefs?
5. What do you hope will be different from understanding or resolving this problem?
6. What are the benefits of resolving this problem?
7. What are your worst fears about this problem?
8. What's getting in the way of this problem being addressed or resolved?
9. Who else can benefit from the issue being addressed or

resolved?

10. What gives you hope and energy to resolve the problem?
11. Who has similar views on the issue? What are these views?
12. Who has different or conflicting views on the issue?

Appendix B: The Reflection Tree

Instructions

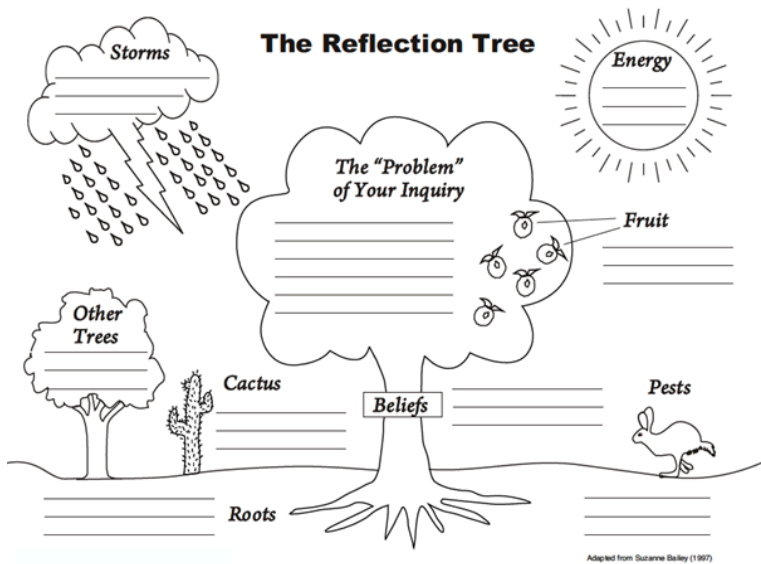
Enclosed is a graphical template for structuring the “problem” of your inquiry. It is based on Suzanne Bailey’s work on designing and leading whole system change through the use of living system metaphors. Reflect on the questions and then record your answers on the template provided.

1. **The Problem of Your Inquiry**—State the unresolved issue, challenge, opportunity, or performance gap that is at the center of your inquiry.
2. **Energy**—What motivates you to resolve the issue? What gives you stamina and keeps you focused on wanting to solve the problem? List your responses under the sun.
3. **Beliefs and Values**—Why is the problem important to you? How are your beliefs and values on effective teaching and learning related to the problem? Write three or four beliefs that support your efforts to resolve the problem beside the trunk of the tree.
 - **Fruit**—What are the benefits of solving the problem? State what you think is the potential end result of your inquiry.
 - **Pests**—What’s getting in the way of solving the problem? What are the obstacles and challenges that need to be overcome for the inquiry to be a success? Write this information under the rabbit.

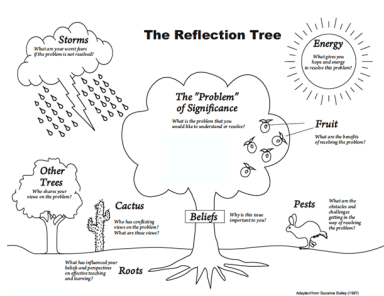
- **Roots**—Reflect on the “roots” of your current perspective regarding the problem. What has influenced your view of effective teaching and learning that makes this issue a significant problem to solve? List the people, previous experiences, and literature that has influenced you under the roots of the tree.
- **Other Trees**—What other colleagues, friends, and mentors share your views of the problem? List these supporters under the “Other Trees”.
- **Cactus**—Who has different or conflicting views on the problem than you? What are their views on the issue? Write this information next to the cactus.
- **Storms**—What would happen if the problem is not resolved? Write down your worst fears by the storm clouds.

Review the reflections you have just listed on your template. What patterns are evident? What were the most difficult parts of the template to complete? The easiest? What are the implications of your entries for the next steps of your inquiry?

Appendix C: The Reflection Tree



Appendix D: The “Problem of Significance”



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Doug Hamilton is Professor and Head of the MA in Educational Leadership and Management (International) program at Royal Roads University. He is a scholar, program developer, international speaker, and workshop facilitator. His scholarly interests include research into various kinds of learning innovations that bridge the gap between academic study and the professional workplace. He is particularly interested in the role that technology, collaborative forms of engagement, action research, and reflective practice can play to enhance and support professional learning.

9. What is the Real Opportunity?

ALICE MACGILLIVRAY

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“What is the Real Opportunity” is a stimulating, collaborative activity designed to help graduate students develop and refine applied research questions. At its best, it showcases deep listening, critical thinking, collaboration, constructive feedback, reframing, and reflection: skills important throughout the research process. In this chapter, I focus on action-oriented research. One reason I appreciate this activity is the frequent surprises; students are amazed when “unlikely” (in their minds) group members ask the most powerful questions or provide the most innovative insights. Following preparatory tasks, the activity takes 45-60 minutes, is followed by a debrief, and can run several times face-to-face or online.

Rationale

I hope my post-secondary students will learn *and* apply learning in meaningful ways. Some of my work is with Royal Roads University (RRU) in western Canada, where we encourage scholarship informing practice, and vice versa. Using RRU as an example, intended action is implicit in sample thesis titles below (retrieved

from VIURRSpace, December, 2020). Full citations are in Appendix A; Different questions for each could be valid in different contexts:

- Testing infrared technology to locate active migratory bird nests;
- Tsartlip First Nations analysis of primary care equity and access;
- Engaging people with lived experience of opioid use;
- Leading the way to promote self-determination of individuals with autism spectrum disorder;
- Cultural survival among Syrians in Cairo: the role of Syrian educators and educational centers; and
- Gamification in nursing jurisprudence.

Many RRU graduate students conduct action-oriented research. Some help their own organizations move forward with challenges, where they have intimate knowledge of the setting and probable assumptions about what needs to be done. Students have a lot to learn, and—in some cases—a lot to “unlearn” to reduce bias.

The research questions they ask may initially be too broad or vague or they may not reflect the actual *intent* of the inquiry. They may sound more like interview questions than research questions. The question may not fit with methodology (e.g., asking about lived experience in a statistical study) or with methodologies used in the school or department (sometimes there are restrictions).

“What is the Real Opportunity” provides students with space to deeply explore their initial research ideas and questions, and with new insights from their peers. Students use a structured brainstorming approach in small groups to understand, constructively explore and refine the nature of research challenges.

One of my original inspirations for this activity was Wenger’s social learning theory (SLT), which came out of Xerox PARC’s Institute for Research on Learning (Wenger, 1998, p. 14). SLT emphasizes learning embedded in social contexts and relevant

practice. There is overlap with Bandura's (1977) work, but the individual is emphasized less, and social contexts foregrounded.

Overview

This section includes how to prepare for and conduct the activity, and optional assessment.

To Prepare for the Activity

The activity helps to transform research ideas into improved research questions. It follows (a) learning about good questions in general; (b) research questions in particular; and (c) students' reflections on their research plans. The activity is described to students in advance. I explain they will be in small groups, and that each group will have a timekeeper and facilitator (chosen in the group).

Confidentiality must be emphasized, as must deep listening, powerful questioning, and listening for understanding rather than for response.

Organize students into groups of 4 or 5; face-to-face groups can be slightly larger than those online. The groups should be diverse to encourage different perspectives. This diversity could include elements such as gender, ethnicity, field of work, years of experience, country, Myers Briggs Type Indicator (MBTI) profile or previous education. In person, they sit around tables; online, use breakout groups. A hand-out (Appendix C) includes timing for each step; review this with students before moving into the activity.

Option: each group has a designated process observer, which can help people reflect on successes and areas for improvement.

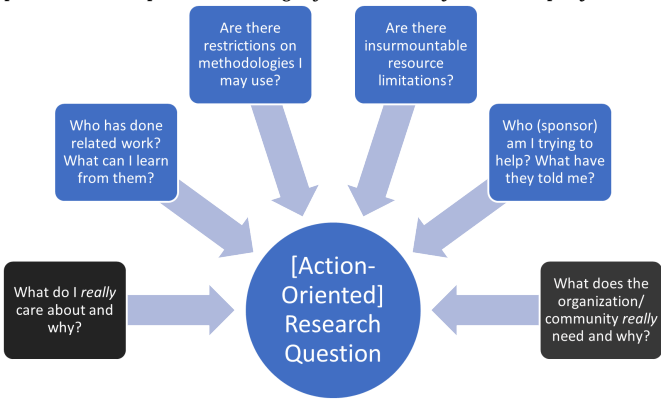
This diversifies the ways of learning open to students (and can also provide an ethnographic experience).

The Activity Process

1. Each person gives a one-minute overview of their question and intent; others listen. An overview might be: “I work at X and I’m interested in power. In our organization, it seems front-line workers are rarely included or heard. I believe that impacts the quality of decisions. My draft question is: “Why don’t executives listen to people who actually talk to customers?”

Figure 1

Sample research question design factors likely to be at play.



2. After listening to overviews of each research opportunity, the group chooses one “opportunity” for round-one focus.
3. The person with chosen opportunity (PCO) provides more depth; others listen and take notes.
4. Everyone can interact. Group members probe and clarify without providing solutions (facilitator watches for that). If the challenge above were chosen, questions might include: “What got you interested in power?”, “Could you tell us about a

decision you think was flawed?”, “Why do you want to work in your own organization?”, and “Where are you situated and how might that affect your research?”

5. Everyone pauses quietly for one minute. Encourage relaxation and reflection.
6. The PCO listens to others brainstorming. The brainstorming might relate to the current framing of the opportunity, the PCO’s passions, concerns about bias, scope, suggested wording changes, links to theories...
7. The PCO comments on ideas they have heard, and shares thoughts about what else could be helpful.
8. In a final brainstorm round, the PCO hears new/refined research question ideas from their colleagues. Given the example above, improved questions might be; “How might more diverse input improve operational decision-making in Company X?” or “What are the varied ways of understanding relationships between power and decision-making in Company X?”

Option: With different groups of students, you may want to adjust details. For example, students working in English as an additional language may need more time for each step.

Option: Different rounds of this activity may be scheduled, or students can do that on their own. In my experience, there is multidirectional learning and support so that once they have experienced one or two rounds, they can move ahead more effectively with their own work.

In the debrief, I begin with the PCO. How did they experience the process? Did it help their question development? How? Sometimes the student will start to emphasize content; when this happens, I encourage them to come back to the experience. If the group has had an observer, they add to the conversation. I then engage others; how did they experience the process? What was it like to focus on listening without speaking? Was the one-minute pause difficult? Valuable? How might the experience influence their own work?

There are many possibilities for integrating this activity with other activities or assessments. As examples:

- There could be a series of similar brainstorming sessions in groups or pairs to deal with research questions and methodologies, sub-questions, data gathering methods, and so on.
- Brainstorm results could feed into group presentations assessed for content, critical thinking, and communication.
- Have students rate their research questions before and after this activity.

Assessment

For those wishing to assess or use discussion questions, the following ideas may be helpful:

- experience a process to inform dialogue with inquiry team members, partners, clients or sponsors in their upcoming research;
- develop curiosity about peers' possible research;
- think critically about which draft proposals to work on, given limited resources;
- practice the art of powerful questioning;
- develop reflective patience;
- work towards discovering deep, researchable challenges and opportunities rather than symptoms of problems;
- explore some of their own biases and skills (such as listening to understand rather than to jump in with ideas);
- later, reflect on how the process of working with others' challenges can support learning about their own research.

The development of this activity came through practice and

collaborative learning with colleagues. The resources in Appendix B shed light on the activity through various lenses.

Reflections

This activity can be adapted for topics other than research question design. For example, I have used it to explore seemingly intractable challenges in organizations or communities. Things I have learned over the years with “What is the Real Opportunity” include:

- Divergent thinking is important before narrowing a question.
- The activity is designed for complex challenge research more than technical challenges best solved by experts.
- Specialists may resist social learning in diverse groups. They may relate to the End of Modernity (Ernst, 2016 Chapter 1). Examples such as climate change can illustrate the need for collaboration across boundaries.
- Prevent/mitigate resistance to structure in the first round. Groups that follow the structure usually find it valuable.
- The activity can exemplify elements of non-hierarchical leadership as practice (Raelin, 2003).
- It isn't unusual to have “AHA” moments, especially around: a) the value of deep listening; b) the power of thoughtful question design; c) the untapped expertise in the room; and d) the value of “unlikely” participants providing surprising insights.
- There is potential for this activity to open the door to new ways of thinking and working. It sometimes spills over into ongoing research collaborations.
- The fleshing out of “real opportunities” is a multi-faceted process. For students' research design work, it often involves many considerations as illustrated in Figure 1 for an action-oriented, applied research project.

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Appendix A: Sample Theses with Intent for Change from Royal Roads University

- Gustafson, B. (2020). *Testing infrared technology to locate active migratory bird nests*. Publication No. 28150654) [Master's thesis, Royal Roads University]. ProQuest Dissertations Publishing.
- Hastings, H. (2020). *Tsartlip First Nations analysis of primary care equity and access*. Publication No. 27829968) [Master's thesis, Royal Roads University]. ProQuest Dissertations Publishing.
- Ragan, C. (2020). *Engaging people with lived experience of opioid use*. (Publication No. 27836734) [Master's thesis, Royal Roads University]. ProQuest Dissertations Publishing.
- Ryan, J. (2016). *Leading the way to promote self-determination of individuals with autism spectrum disorder*. (Publication No. 10154341) [Master's thesis, Royal Roads University]. ProQuest Dissertations Publishing.
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Appendix B: References and Resources for Further Learning

- Besant, H. (2016). The Journey of Brainstorming. *Journal of Transformational Innovation*, 2(1), 1–7.
- Ernst, D. (2016). Personal and organizational transformation towards sustainability: walking a twin-path (First, Ser. Principles for responsible management education collection). Business Expert Press.
- Gillies, R. M. (2019). Promoting academically productive student dialogue during collaborative learning. *International Journal of Educational Research*, 97, 200–209. <https://doi.org/10.1016/j.ijer.2017.07.014> (not higher education but some good insights)
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Appendix C: Hand-out: Refining your research plans: What is the Real Opportunity

In your teams, stick with this process. Structure helps with learning and results.

Ensure you have one or more facilitators to keep time and keep on task (and participate)

Either the person with the research question for focus or colleagues have the floor in each step of the process, except in step 4

1. Each person gives a 1-minute overview of their question and intent (approximate time: 5 minutes).
2. Group decides on which question to work on and a back-up (approximate time: 3 minutes).
3. Person with chosen question provides more depth (approximate time: 5 minutes).
4. Others probe and clarify; **do not provide advice or solutions** (approximate time: 10 minutes).
5. Think about what you have heard (silence is important for sensemaking) (approximate time: 1 minute).
6. Brainstorm ideas; incorporate principles, theories, or examples from your studies. Avoid premature convergence (approximate time: 8 minutes).
7. Person comments on what she/he heard and what else they would like (approximate time: 3 minutes).
8. Final brainstorm (approximate time: 5 minutes).

Total minutes: 40 (take a break if your group is smaller and you finish early)

About the Author

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Alice MacGillivray has been called a nexialist because of her consulting, research, writing and teaching across boundaries. Her degrees (BGS, MA, MA, PhD) are all interdisciplinary; her most

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10. The Thought Process of Constructing a Researchable Question: Think Like a Mathematician

HANY FAHMY

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Rationale

Quantitative analysis, business analytics, quantitative research methods, and applied business methods, among others, are examples of required business statistics courses for non-science majors. In my experience, business and other social science domains present a typical quantitative course sequence covering the following subjects, more or less in this order: descriptive statistics, probability, sampling distributions, estimation, hypothesis testing, regression analysis, experimental design, survey sampling, quality control, time series analysis, (analysis of variance) ANOVA and other topics (Rose et al., 1988, p. 277). The first five topics in the list comprise the necessary *foundations* for the remaining *applied* subjects on the list. Therefore, these five subjects are usually covered in the first course of the business statistics sequence and a combination of the remaining subjects is covered in the second course.

I have long been interested in how I can demonstrate the significance of quantitative analysis in the critical thought process pertaining to formulating the research question and defining the research hypotheses in the early stage of carrying out any applied study. This process is important to graduate students, especially for non-science majors who were not exposed to this type of thinking in their previous degrees.

Overview

To carry out a traditional applied research study, the researcher decides on a topic, develops a researchable question, carries out a literature review, develops a research plan to test the validity of this hypothesis, documents the research findings, and disseminates knowledge. The importance of statistics and quantitative analysis can be easily demonstrated in each of the previously mentioned stages. However, I'm interested here in demonstrating the importance of quantitative analysis in the early stage where the development of research questions takes place. This stage, in my own opinion and in my graduate students' view, is the most challenging and most intimidating stage of carrying out an applied research study. The struggle in carrying out a good quantitative analysis lies in transforming a verbal research statement into testable and measurable hypotheses; a job that requires the thought process of a mathematician and the skill of a statistician. It is the mathematician's thought process I want to present.

The process of developing a quantitative researchable question is a sequence of two steps: a thought process and a parameterization exercise. The thought process is founded on mathematical reasoning. The outcome of this initial step is usually a set of key study variables and a set of study hypotheses to be tested empirically. The second step is about the execution of the outcome of the thought process. Within the quantitative domain, this step

becomes a parameterization exercise where statistical and mathematical techniques are used to parameterize the behavioral relations between the study variables according to the hypotheses of the study.

How mathematicians think

When I teach the thought process of parameterizing an applied research question, I begin with a simple general example that illustrates how mathematicians view the world from a lens which insists on a form of precision not commonly applied by other professions.

Example 1

Consider the following motivational statement: “To be successful, you should dig deep and rise high.” If you give this advice to a mathematician, s/he will probably ask you to define the words “deep” and “high.” You will then be asked to describe the causality between success as an outcome and digging and rising as actions that lead to this outcome.

To a mathematician, the motivational statement is incomprehensible for it is simply imprecise. An alternative, more rigorous, way of stating the previous statement is: let d and h denote depth and height, respectively, as variables. Let $x = h - d$ be the effort exercised, which is defined, in this example, as the distance between h and d . In other words, effort is thought of as a real number bounded from below by the depth value, i.e., the value taken by d , and from above by the value taken by h . Let d_0 be the initial depth and h_0 be the initial height. Then, an equivalent way of stating the above statement is:

To be successful, exercise a magnitude of effort $x = h - d$ such that d is less than ($<$) the current depth level d_0 (dig deep) and is greater than ($>$) h_0 ; the current point from which one can rise from (rise high).

A mathematician is likely to comprehend this statement for it is based on concrete measurable variables that describe a defined relation between effort and depth and height.

Example 1 does not only illustrate to our students how mathematicians think, but it also reveals to them the structure of the thought process used when performing quantitative analysis. This structure is founded on defining variables and relations based on elementary mathematical concepts. Example 1 also teaches that defining a measurable variable, i.e., the exercised effort x , as a function of other variables, h and d , is the first and most important step in conducting any thought process. This definition, i.e., the functional form $x = h - d$, gives a relation between the variables.

Consider the following research questions:

Example 2

*This study investigates the effect of human capital information on stakeholders' decisions.*¹

The research statement in Example 2, which I will denote by W , is too general for analysis for it contains terms that need to be defined precisely. In particular, the statement is not clear about the

1. I would like to thank Arianna Bhagwansingh, a candidate in the DBA program in the School of Business at Royal Roads University, for providing this research statement from her DBA proposal. At the time of writing this chapter, Arianna and I had a chat about how to translate this statement into a researchable question.

type of human capital information that will be used. Also, it is not clear what type of stakeholders and decisions will be considered. I would ask students how they would go about refining this statement into a more precise and quantifiable version. A refinement of the statement W , for instance, could read as follows:

Example 3

This study investigates the effect of human capital information in management reports on investors' decisions.

Let W' denote the statement in Example 3. It is easy to see that W' is an improvement over W for it contains a better, yet still imprecise, definition of the *source* of human capital information and the *type* of stakeholders. The decision to be studied, however, is still not clear. Thus, more refinement is warranted. We might ask the students to try and list the relevant human capital information pertaining to W that could be studied, e.g., workers' education, training, skills, health, among others.² More formally, let the set $\{A_1, A_2, \dots\}$ be the chosen set of human capital attributes pertaining to a particular publicly traded company. If an attribute is measurable, i.e., has a quantifiable scale, it is considered a variable. Otherwise, a proxy can be used for quantification. For instance, workers' years of schooling, X_1 , could be used as a proxy for the education attribute, A_1 . The number of workshops that workers have attended, X_2 , could be used as a proxy for the workers'

2. The researcher here is basically defining the key variables of the study. A thorough literature review is advised at this stage to pinpoint the key variables that were considered by previous studies and the other potential variables (if any) that the researcher is thinking of entertaining

training attribute, A_2 , and so on. The outcome of this process is a set of measurable variables or proxies $\{X_1, X_2, \dots\}$ that capture the human capital attributes $\{A_1, A_2, \dots\}$ of the statement W .

In the refinement process of W , the student might also be directed to decide on the type of investors, e.g., retail traders, institutional investors, or both. If the decision is to study institutional investors, i.e., fund and portfolio managers, then the decision and nature of the focus of the study ought to be related to the way financial portfolios are constructed; the so-called asset allocation and security selection process associated with the portfolio management process (PMP).

With this degree of focus, the students might see a further clarification of the question under study to:

Example 4

This study investigates the hypothesis that human capital adds value to the PMP. In particular, the study focuses on studying the value added of including a set of key human capital attributes, in addition to the fundamental and technical analyses, in the decision-making process in the security selection stage of the PMP.

The statement W'' in Example 4, which is considered a refinement of W' , is precise enough to warrant empirical investigation. It is a quantifiable statement since it comprises a set of measurable variables; namely, the set $X = \{Y, X_1, X_2, \dots, X_n\}$, where Y is the rate of return or the risk of the constructed portfolio, and $X_1, X_2, \dots, X_n$ are the measurable human capital attributes. The researcher can now begin to choose a methodology to measure the value added from including human capital information in the analysis. In other words,

the researcher can now decide on how to quantify the relation between Y and $X_1, X_2, \dots, X_n$.

Reflection

In general, the mapping from W to X is the most important and most challenging part of defining a researchable question when carrying out an applied study. The thought process often begins with an abstract process W and progresses, through a set of refinements, to narrow down the key measuring attribute(s) of this process into a set X of measurable component(s). The next step is to choose a research approach, normally quantitative but could involve mixed methods, which would then include qualitative approaches, to investigate the research question.

Taking this quantitative approach, a parameterization of the hypothesized relation between the key variables ought to be defined and statistical analysis used to make sense of the data.

Learning mathematics could be for its pure beauty or for its incredible power of analysis. Aside from the motive, however, the subject is crucial for the thought process of any researcher. For that reason, in my teaching, I strive to encourage my students to think like mathematicians regardless of the type of research (e.g., qualitative, quantitative, or mixed methods) they intend to implement.

Learning the effective use of mathematics in constructing a researchable question is equivalent to the task of assembling a chain that comprises of several dependent links in a sequence. If one link is missing, it will be impossible to pull on the chain. This missing link is what renders the thought process of thinking like a mathematician challenging for some students. However, with some effort and instructor's support, overcoming this challenge is possible.

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II. Introducing Design Thinking as an Approach to Participatory Action-Oriented Research

DAVE WHITTINGTON

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Rationale

Design thinking has come of age (Kolko, 2015) and is now widely adopted in many organizations. Students of leadership need to understand what it is and how they might use it to effectively design solutions to complex challenges. This chapter explains how design thinking is introduced to students in a leadership program at Royal Roads University (RRU) using a fast-paced, hands-on, design sprint. The use of a sprint allows the students to experience a complete design exercise in a very short time.

The capstone project in RRU's MA Leadership program (RRU, n.d.) provides an opportunity for students to lead a project that engages participants in co-creating a positive change in their organization. In preparation for this project students are introduced to a range of action-oriented research approaches and methods. Design thinking is one such approach and this chapter describes an activity that introduces students to the principles and practices of this approach.

There is an emerging body of literature (Brown, 2009; Martin, 2009) that supports the use of design thinking as an approach to leading change and collaboratively designing solutions to complex organizational problems. Through experiential learning, students see how a design thinking approach and methods can be used to facilitate a structured process where research participants collaboratively explore a challenge they are facing and then co-create solutions to that challenge.

Overview

I believe that the best way to teach design thinking is to engage students in a real design thinking exercise. There are many ways to conduct design thinking (Dell'Era, 2020). I am working with students and conducting a design thinking activity for the purpose of education. For these reasons I used a “sprint” which involves rapidly working through a complete design exercise in a short amount of time, and I used “participatory design” where the participants in the process take on the dual role of designers and end users.

There are now two versions of this workshop: the original design, which has been facilitated in a traditional classroom setting around ten times since 2016, and a virtual design that has been facilitated three times during the COVID-19 pandemic when the residential portion of the MA Leadership program was delivered fully online, in real time.

Table 1

Sample Schedule for Classroom Workshop (90 minutes, between 36 and 48 students)

Time	Activity	Resources	Notes
9:00	Introduction – mention that it's human centered and it's a mindset as much as a process	PowerPoint with instructions for each activity.	The workshop is very fast paced, and students should pay attention to their feelings as they work through the process.
9:10	Interviews – two rounds, in pairs, 5 mins each, and 5 mins to explain and debrief.	Interview guides	I sometimes play background music.
9:25	Brainstorm – small groups at tables based on what was heard in the interviews.	Yellow post it notes, black sharpies and either flipcharts or wall space.	Encourage wild and crazy ideas but stay focused on the topic.
9:35	Dotmocracy – voting on what they think are ideas worth exploring further.	Five red sticky dots per student.	Pre-cut the strips of stick dots.
9:40	25/10 crowdsourcing – using a Liberating Structure to prompt some creativity (Lipmanowicz & McCandless, 2013).	Large white index cards, one per student.	At this stage I mention that potential design methods can be found in many places.
9:50	Prototyping – in self-selected groups based on the top 3-5 ideas from the previous activity.	Prototyping supplies – see appendix A	I discourage works of art and encourage the students to embrace their inner child.
10:05	Sharing feedback on prototypes – using the “I like, I wish, What if” format.	N/A	Put prototyping teams in pairs and have them take turns doing a “show and tell”.
10:15	Work on implementation – prototyping teams develop a list of next steps for moving their idea forward	Flipcharts for each of the prototyping teams.	Encourage the students to develop next steps they can take responsibility for implementing.

10:25	Five minutes for Q&A	N/A	Congratulate the students on the work they did and remind them it is most unusual to complete this many methods in 90 minutes!!!
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Table 2

Sample Schedule for Online Workshop (Two Hours, plus a 15-minute break, between 21 and 48 students)

Time	Activity	Resources	Notes
9:00	Introduction – mention that design thinking is human centered and it is a mindset as much as a process.	PowerPoint deck with instructions for each activity.	The workshop is very fast paced, and students should pay attention to their feelings as we work through the process.
9:10	Threesome Interviews – two rounds, 20 mins total. Use the breakout feature to put students in random groups of three, twice.	Interview guides provided in advance to students.	Encourage students to take notes.
9:30	Develop Insight Statements, summarizing the learning from the interviews.	A shared editable google doc for recording each group's statements.	Students are back in breakouts, with 5 or 6 students in each group.
9:40	Large group report out on Insight Statements. Use share screen feature to display google doc, while teams report out.		Encourage the students to be quick.
9:45	Brainstorm in a large group, individually contributing to a new shared google doc.	A shared editable google doc for recording each group's ideas.	Encourage wild and crazy ideas but stay focused on the topic.

	Theming and Voting – As the brainstorm continues encourage the students to start sorting the ideas into themes.		Encourage the natural born sorters to start the theming. There are always some in the room ?
9:50		Then Ask students to place a “+” signs against the ideas (or themes) they think should be explored further.	Each student has 3 “votes”.
9:55	Top Five – back in breakouts, each group reviews the brainstorm and then adds their “top five” to a single shared doc.	A shared editable google doc for recording each group’s top five.	I add instructions to the top of each of the shared google docs. This helps the students stay focused.
Break			Based on the top five lists, develop 5 themes to be prototyped. Each theme will be allocated a breakout room. Students should be able to select which room they got to work on a prototype using a shared whiteboard.
10:15	Visual Prototyping – in self-selected groups based on the top 5 ideas from the previous activity.	Named breakout rooms, with a shared white board in each room. Paste images into a single shared doc.	I share some photos of prototypes and explain that works of art are not the goal.
10:35	Sharing feedback on prototypes – using the “I like, I wish, What if” format.		Each prototyping team takes a turn doing a “show and tell” while other students type their feedback into the shared document.

10:55	Work on implementation – prototyping teams develop a list of next steps for moving their idea forward.	Next steps are added to the same document that has the prototypes and feedback.	Encourage the students to develop next steps they can take responsibility for implementing.
11:05	Ten minutes for quick report out from teams and Q&A.		Congratulate the students on the work they did and remind them it is most unusual to complete this many methods in two hours online!!!

Reflection

When I first began introducing design thinking to students I used the Wallet Exercise that had been developed and published by the d.school at Stanford University (Kelley, 2019). The pace of the exercise was great but designing a wallet for a partner was a long way from the type of the challenge these students would be addressing in their capstone projects. I needed a new design challenge, one that was relevant to the students concerned and more like the challenges they would be facing in their capstone projects. In consultation with colleagues and using the “How might way ...” approach (Berger, 2012), I introduced a design exercise that explored “How might we, the students in this cohort, support one another as we each work on our capstone projects?” It was a big success. The students had fun, they experienced a design exercise, they put into practice some of the ideas they came up with (although this was not the initial intention) and some of the students went on to use a design approach in their own capstone projects.

Adjustments have been made over time and the workshop continues to evolve. The most recent version experimented with the

use of Mural¹. The design challenges we have used has changed over time:

- How might we, the students in this cohort, support one another as we each work on our capstone projects?
- How might we, the students in this MA Leadership cohort, take action – individually, within our organizations, and collaboratively – to transform the unsustainable practices and ways of being that have led to climate change?
- How might we, the students in this cohort, individually and collectively contribute to the emergence of compassionate, eco-centric leadership in times of crisis?
- How might we, the students in this cohort, individually and collectively contribute to the emergence of compassionate, eco-centric leadership in the Canadian health system?
- How might we, the students in this cohort, make sense of and engage in ReconciliAction through our leadership?

For the COVID-19 pandemic, the workshop was delivered in an online format. To accommodate this, the workshop was extended from 90 minutes to two hours, and a 15-minute break was added. Feedback from the students suggests the online workshop was still impactful, but there have been fewer comments related to the engagement and energy generated. In every cohort that has been introduced to design thinking there have always been some students who have integrated this approach into their capstone projects.

1. <https://www.mural.co>

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Acknowledgements

This work would not have been possible without the support of my fellow teachers in RRU’s School of Leadership Studies, the amazing support staff who take care of the details so efficiently, and the formal leaders within the school who continue to model caring, courage, and creativity.

Appendix 1 – List of Prototyping Supplies

Tools – just need to be purchased once

- Scissors – at least 2 per table
- Little staplers (with extra staples) – at least 2 per table (these work much better than glue sticks)
- Rulers

Supplies – will need to be replenished

- Coloured craft paper in a range of sizes and colours
- Cardboard – assorted index cards as well as corrugated cardboard shapes from the craft supplies store
- Origami squares – assorted
- Pipe cleaners – assorted colours
- Lollipop/popsicle sticks
- Aluminium foil – for molding into shapes, it's much cleaner than clay!
- Toothpicks
- Sticky tape, small rolls – at least 2 per table
- Felt/foam shapes
- Duct tape
- Sharpies – assorted
- String/yarn – assorted
- Ribbon – assorted colours
- Stickers – coloured dots, stars, rectangular labels, letters and numbers
- Post it notes – assorted
- Rubber bands
- Paper clips

The list above is based on experience and documentation from Stanford's d.school.

About the Author

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Dr. Dave Whittington has been an associate faculty member of Royal Roads University since 2001. Dave's particular area of interest is the intersection of leadership, innovation, organizational culture, and organizational strategy. Outside of RRU, Dave works with a variety of clients ranging from the high-tech sector, the health sector, the not-for-profit sector and the public service (from municipal to federal). Where appropriate, Dave has been successfully using a design thinking approach with his clients for the last ten years.

SECTION III

ENGAGING STUDENTS IN EXPLORING RESEARCH PARADIGMS AND METHODOLOGIES

12. Active Learning Through Arts-Based Inquiry

GEO TAKACH

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Rationale

The activity shared here introduces learners to epistemological foundations, advantages, and challenges of arts-based methods of inquiry (also called arts-based research, among other terms and variants, abbreviated here as ‘ABR’) as an exemplar of active learning. It offers a space for considering how students’ specific inquiries might be designed as ABR and it suggests an empathetic forum to workshop students’ ideas for arts-based ways to answer their research questions. This chapter presents a rationale for ABR, an overview of an activity to introduce it in the classroom, and reflections on pedagogical learning from conducting the activity. Appendix A features a starting list of resources on ABR.

ABR is “a process that uses the expressive qualities of form to convey meaning” to grow human understanding (Barone & Eisner 2012, p. xii). It explores the world and the human condition by gathering, synthesizing, analyzing, crafting, reflecting on, and ultimately sharing findings through creative practices employed in the arts. ABR can be enacted in diverse forms, such as drawings, theatre, writing, photovoice, textiles and video, among many others. As a methodological supplement to more traditional quantitative

and qualitative methods of scholarly inquiry, ABR offers the potential for transformational learning for participants (Gerber et al., 2012).

In embodying ways of thinking guided by intuition, the senses and lived experience, ABR offers ways to access knowledges, ways of knowing, nuances, and expressive understandings that are deeper (Wilson & Flicker, 2014) and less readily available through more traditional research methods like surveys and interviews (Ward & Shortt, 2020). ABR is rooted in an ethic of care (Finley, 2011).

In valuing learners' experience as part of the research (Ward & King, 2020), ABR offers them a better understanding of not only what they are learning but also their learning process as they iteratively consider each step of their inquiry. This ongoing reflection informs both their learning and creative processes, encouraging them to bring their fullest, authentic selves to the exercise. Students gain the joy of learning-by-doing and the satisfaction of artistic creation, increasing their motivation and their likelihood of retaining that learning (Rinne et al., 2011). This seems to harmonize with both the trend towards active learning in advanced education and the research encouraging that trend noted by Robertson (2018).

The timeless popularity of the arts offers ABR a wider reach than typically awaits the fruits of qualitative and quantitative inquiry (Ward & Shortt, 2020) and consequently a greater prospective impact (Capous-Desyllas & Morgaine, 2018). Impact matters because ABR connects to emancipatory imperatives (Osei-Kofi, 2013) striving to improve actual environmental, social and/or economic conditions. Thus, its ultimate promise (as an instrument of applied learning addressing real-world concerns) is the potential to transform learners, their participants, and audiences well beyond academe.

These benefits come with challenges for learners. For example, ABR's subjectivity makes it difficult to pin down with referential precision or to achieve consensus as to its meaning(s). Its theory lags its practice. Practitioners must meet standards of both

scholarly and artistic rigor, although the latter should not mean reproducing the status quo to the point that rigor becomes “rigor mortis” (Finley, 2011, p. 447). Some students may be reluctant to try ABR, so it is essential to create a safe space for them to explore it. Another challenge is time: the ineffability of artistic processes makes ABR less amenable to strict deadlines demanded by academic-term schedules.

In light of these advantages and challenges, learning outcomes for my activity introducing ABR in the classroom include students demonstrating abilities to:

1. assess the potentialities of ABR in their own journeys as researchers, scholar-practitioners, and citizens;
2. consider how a specific research question of their choice might be answered in a specific arts-based format;
3. experiment with and workshop their own ideas for arts-based ways to answer their research question; and
4. analyze and comment constructively on ideas for ABR projects proposed by their classmates.

The overarching goal is to equip students with a solid foundation to begin their own inquiries through ABR methods as additional resources in their active-learning toolkit.

Overview

This activity proceeds through three steps.

First, I introduce students to the epistemological foundations, advantages, and challenges of ABR methods, as highlighted above.

Second, students are invited to consider a research question that interests them and explore how ABR methods might help them answer it. (When this activity falls within a course, their research questions should certainly relate to topics covered in the course.) I

begin by asking learners to consider how their identified inquiries might be designed as ABR. I lead a brainstorming session using a student-generated example of an inquiry relating to their personal, professional or volunteer activities. For example, a research question on how to reduce a specific kind of discrimination in a particular workplace or industry can be explored through a short story, a choreographed dance or a sculpture, to name just three forms. When students seem reluctant to try the activity due to fear or uncertainty, I suggest they situate their research question in a setting familiar to them (e.g., in an organization to which they belong) and in an artistic form that they enjoy, and then to imagine how their question might be addressed in that form. When that still leaves some students uncertain, I invite them to try imagining how their favourite film character or musical artist might address the research question in a movie or a song, respectively.

After working through a few examples in class, I set students to sketch out possible research designs in breakout groups or individually. Questions to address here include:

1. Which artistic form or medium (e.g., painting, short story, skit) might be helpful to address your research question?
2. What are the features of that form that make it helpful, and why?
3. How might you work in that artistic form to: (a) gather information to answer your question; (b) organize or synthesize that information for analysis; (c) analyze it to ground your answer; (d) craft your answer; and (e) present your answer?

This activity's third step provides an empathetic forum for students to workshop their own ideas for arts-based ways to answer their research questions, as formulated in the second step described above. Here they receive comments from their peers and their instructor, then debrief collectively on their learning through the

activity. Questions for the class to reflect on and discuss here include:

1. What advantages can we see in exploring the research question in the arts-based format that was chosen?
2. What challenges can we see?
3. What possible impacts—positive and potentially negative—on the intended audiences for the work can we foresee from presenting it to them?

Such reflections are vital in ABR, mirroring the ongoing, iterative process of informing and fuelling the creation of artistic work by pausing to consider the effect of each step in its evolution. Debriefing confers the further benefit of yielding valuable feedback on students' learning, their comfort with ABR and the efficacy of the activity itself. When I perceive a need for further collective instruction and exercises or individual consultations, I follow up both in and out of class.

Within a course, this activity serves to seed an actual ABR project. I have used variants of it to prepare students for an assignment proposing an ABR project, which feeds naturally into the actual ABR project as their capstone assignment. Students' demonstrated engagement in this activity counts towards their participation/contribution grade, if applicable.

Reflections

This activity supports students who are doing research in applied settings (e.g., organizations to which they belong) by offering opportunities to engage immersively, creatively, and consequentially in issues of interest and concern to them, in settings where they live, through artistic approaches. In expanding

their tools of inquiry, it equips them to become more diverse and hopefully more effective applied researchers.

Because ABR will be novel methodological territory for many students, I emphasize learners don't have to be seasoned artists to try it, and there is no single answer or right way to conduct ABR. Like art itself, ABR offers boundless possibilities while inviting copious consideration, creativity and effort. A safe space for experimentation, sharing and collaboration is essential. Instructors should scaffold the activity by ensuring that students are familiar, if not outright comfortable, with what ABR is and how it might help them pursue a research question with scholarly rigour.

This “art for scholarship's sake” (Taylor, 2016, p. 6) remains a vital distinction from creating art for its own sake (Takach, 2016), which, while certainly rigorous, is free from academic dictates like posing and answering research questions, justifying claims, and citing sources. Still, I model great respect for artistic disciplines. In our zeal to focus on learning and research, we should remember the immense, timeless beauty and power of art as a means of self-expression as well as a tool to inspire others. Many defining historical developments link to artwork, such as *Mona Lisa* (1503), Leonardo da Vinci's radical challenge to conventions of portraiture and composition in painting, and *Le deuxième sexe* (1949), Simone de Beauvoir's ground-breaking treatise in feminist and gender studies.

Within courses, instructors should emphasize the required relevance of ABR questions to course material, so the activity can confer the additional, pragmatic benefits of priming students for success in any further ABR assignments and showing their learning for grading purposes.

It is also important to allow flexibility in students' choices of topics and artistic forms, while nudging them to stay within the feasible limits of time and resources available for any ABR assignments. Instructors should leave ample time for questions and provide multiple opportunities for feedback, discussions, catharsis, and decompression in the wake of students sharing their hopes, fears, and vulnerabilities through their arts-based activity. Such

flexibility extends to modifying the activity itself to suit the needs and comfort levels of the class.

In sum, in introducing ABR, this activity brings the power and beauty of the arts into dialogue with the investigative rigour of scholarship. With its focus on engagement (individually, perhaps also collaboratively and ultimately with an audience, plus an ethos to promote environmental, social and economic justice), its reliance on self-expression and reflexivity, and its hands-on approach to devising, discussing and enacting inquiry, this ABR exercise offers the potential for active, authentic and action-based learning, respectively—learning that can transform students, instructors and ultimately perhaps organizations, communities and even the world. The most memorable and deepest emotional moments in my two decades of post-secondary teaching stem from students sharing their ABR. That's why for me this activity reaffirms the immense pedagogical value and efficacy of uniting academics and aesthetics through ABR as an acme of active learning, which experience teaches me is the most potent learning of all.

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Appendix A

Ten Readings on Arts-Based Research

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About the Author

Geo Takach

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Geo Takach is a Professor in the School of Communication and

Culture and also teaches in the School of Environment and Sustainability at Royal Roads University. He is a veteran professional writer, filmmaker, speaker and workshop leader, with credits in speeches, theatre, print, film, radio, television and Boolean ether. Prior professional adventures include law, journalism, corporate communications, directing/producing for film/TV, and comedy performance—sometimes simultaneously. His latest books are *Scripting the Environment* (Palgrave Macmillan, 2016) and *Tar Wars* (University of Alberta Press, 2017). His current teaching and research focus on intersections of environmental communication, Indigenist approaches and arts-based research.

13. Let's Try Another Viewpoint

ALICE MACGILLIVRAY

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“Let's Try Another Viewpoint” is designed to help students in higher education settings explore methodology options and related research questions for their applied research work. Following preparatory tasks, the activity itself is approximately 45 minutes in length, and is followed by a debrief. It can be used face-to-face or online. Rather than timing the group activity, one could leave it with groups (overnight for example) to work on their own schedules.

Rationale

Higher education programs often require original research. Most doctoral programs have major research components, which can take forms such as traditional dissertation documents, publications, or some combination. Other programs often have thesis options, capstone projects involving research, or course papers requiring the student to engage in some research.

In many cases the students have methodology options that go beyond quantitative, qualitative, or mixed methods. For relatively inexperienced researchers, this can be daunting. They may not know what the “buffet options” are, may not recognize them when

they see them, and may not know how to choose or employ options. Think of times when you have been in restaurants where the cuisine is foreign to you, the menu does not use your alphabet, and the servers do not speak a language you understand. Students may be experiencing similar feelings: being an outsider, hoping for a safe and successful adventure, and feeling anxious about basics such as what questions to ask.

“Let’s Try Another Viewpoint” is primarily a small group activity. It is intended to ease tensions and give students a 30,000-foot view of methodology options. To increase focus on these key intentions, I tend to ignore scope. For example, if a group drafts an excellent question for a study that would be too large, that might be mentioned in passing, but the focus would stay on why the question is excellent.

One of my inspirations for refining this activity was the book *Mindful Inquiry in Social Research* (Bentz & Shapiro, 1998). The authors come from very different scholarly backgrounds and bring that expertise to a 30,000-foot view of “cultures of inquiry.” For each “culture,” they address topics such as typical concerns, epistemological assumptions, and researcher standpoints.

Assessment

At Royal Roads University, we align with course learning outcomes for marked assignments, and use outcomes less formally for activities. This activity can help build knowledge and skills in many areas. Students may:

- Become more conversant with related terms such as research approach, methodology and method, as well as inductive and deductive.
- Appreciate strengths of peers in their course or program.
- Get closer to a final decision about methodology.

- Appreciate the value of other methodologies and ways of doing research.
- Implicitly appreciate other ways of seeing the world and the value of reframing.

Resources for Further Learning

There are many methodology resources available, and readers of this book probably have favourites. Some are generic; others are tailored to work in particular contexts (for example, psychology, tourism, activism, organizational studies, nursing, engineering, and so on). Some argue there are few methodologies and that new ones (such as netnography) are variations, so older resources can be valuable. The following may expand the perspectives of your students.

Overview

To Prepare for the Activity

Have students explore good methodology resources. This might take place through lectures and activities earlier in the course. Student activity options follow:

Presentations:

Have students or student teams do brief presentations about different methodologies to share and reinforce learning. These could be formally assessed. Include a short refresher to emphasize how a methodology differs from a method. This difference warrants creative communication with novice researchers.

Explore Methodologies and Metaphors:

For example, methodologies are similar to music genres. Principles guide the ways in which research is designed and conducted, methods are chosen within those guidelines (with potential for thoughtfully mixing genres). I sometimes use the Cynefin framework (Snowden & Boone, 2007) to present musical genres as metaphors. A symphony orchestra performance illustrates the complicated domain. There are “rules,” or correct ways to do things. Some instruments are included (e.g., strings and brass for example) and some are excluded (e.g., bagpipes). The symphony often has four movements. There is a correct way to perform the symphony (although conductors add nuances). One must follow sheet music.

On the other hand, improvisational jazz could represent the complex domain of the Cynefin framework. There are basic guidelines (e.g., chord progressions) and many differences. Jazz musicians improvise without sheet music and adjust to others’ improvisations. Individual musicians perform solos; solo artists may decide from moment to moment what they will play and for how long. At any given point in the performance the musicians may not know exactly what’s coming next. Wynton Marsalis spoke about jazz as a metaphor and guide for decision making both in music and in democracy during his CBC radio interview (Terry Powers, personal communication, Jan. 25, 2021).

Explain any restrictions or guidelines; e.g., “You will use qualitative research in your final assignment,” or “You will work with your committee to decide on methodologies,” or “From a program perspective, you may use variations of X, Y, and Z.”

Choose one relevant, program-related theme for the activity. This should be general, such as patient care, climate change, immigration, public health, religion-based conflict, or early childhood education.

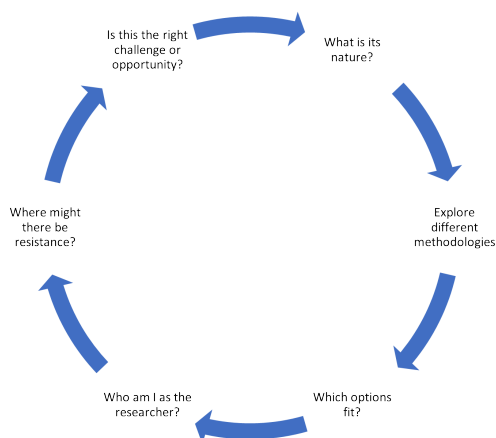
Co-create a Theme:

Students could engage in an activity to decide collectively on a theme for methodology options.

Describe the activity, its purpose, intended outcomes, and if/how learning will be assessed. In describing the purpose, I find it valuable to provide a systems context about how context shapes methodologies and how methodologies shape everything from researcher identity to decisions about methods. A version of this systems view is illustrated in Figure 1.

Figure 1

Exploring research approaches and methodologies.



- **Option:** Each group could be assigned particular methodologies, perhaps with overlaps so groups can compare.

The Activity Itself

1. Organize students into groups of four if possible (generally I find online activities can be successful with fewer members and face-to-face groups can be a bit larger). Depending on the school, program etc., there are different criteria for choosing

groups. Common ground could be helpful if you know something about students' upcoming research themes and want to group related topics. Diversity could be helpful if you want to expose students to different ways of thinking (ontologies, epistemologies, and research goals).

2. Each group (around a table in person or in a break-out room or similar space online) crafts and refines questions for the general topic, using at least three methodologies.
3. Be sure you (or guests or colleagues) are familiar with the methodologies you offer. At the end of this activity, students' questions might not be polished, but they should be coherent with the methodologies chosen.
4. The following are examples of research questions similar to those the students might produce if working with the general topic of "sustainability." The list of methodologies is not exhaustive. Published research questions are cited.

- **Action Research:** How could environmental sustainability be better integrated into operations at Company X? This question has an explicit action orientation. The researcher could be a catalyst of sorts, working with leaders from Company X.
- **Case study:** How do standard grounds maintenance practices affect biodiversity on X campus? This question narrows a broad field to a specific context and may involve use of theoretical models or standardized measures.
- **Ethnomethodology:** How are sustainability professionals defined by the interactions they have within their workplace cultures? This question looks at relationships between culture and specific types of social interaction.
- **Ethnography:** What does Central Park mean to New Yorkers? This study would inductively explore the meaning of a relatively natural area to residents, probably through observation and interaction.
- **Evaluation:** How have infrastructure developments on Campus X in the past five years helped or hindered progress towards

carbon neutrality? This approach is defined by the intent of systematically assessing an element of sustainability.

- **Grounded theory:** What does environmental protection advocacy work mean to participants personally and at broader levels? This aims to reveal a theory, which is grounded in detailed analysis of real-world data.
- **Hermeneutics:** How has Covid-19 influenced consumerism in Portland, Oregon? This study would involve cycles of interpretation, perhaps based on studies of records and media, and potentially including interviews.
- **Indigenous (métissage):** Is it possible to blend Western and Indigenous knowledge and philosophies of nature (Lowan, 2011)? I am hesitant as a settler to describe Indigenous ways of knowing or researching. For consistency, I'll say this study would likely involve the reframing of Indigenous/settler relations, and would emphasize respect, reciprocity, and relationality (Wilson, 2008).
- **Participatory:** How might ethnotourism contribute to sustainable economic recovery in rural British Columbia? This question foreshadows extensive involvement with participants and stakeholders.
- **Phenomenography:** What are varied ways of understanding carbon taxes in Canada? This study would reveal different categorizations, which could lead to more productive dialogue, communication, and action.
- **Phenomenology:** What is the lived experience of international students during their first field trip in course X? This question would lead the researcher to describe and/or interpret experiences, which might be significantly different than those of EuroCanadians teaching the course. On a practical level, this could open new layers of communication about cultures and values.
- **Statistical analysis 1:** How have assured sustainability report characteristics evolved since the 2002-2004 period, and what are some of the potential reasons for this evolution (Mock et

al., 2013)? This could result in concrete outputs to shape and defend practical decisions.

- **Statistical analysis 2:** How much energy, water, and nutrient requirements are required to grow lettuce in a warehouse setting (Butler, 2019)? Similarly, this study could lead to comparisons of different food security strategies.
- **Statistical analysis 3:** Multiple discriminant analysis—how can sustainable organisational performance be developed into a new corporate ratings approach for publicly traded companies? This question could lead to more widespread attention to sustainability in large corporations.

There are several ways in which this activity can be integrated with feedback or assessment: (a) this could be an activity for experiential learning with no formal assessment or with formative feedback; (b) rubrics could be set up for grading of the team's questions; (c) the activity could feed into a subsequent assignment in which individuals craft and justify their questions and draft methodologies and methods in the context of their research plans.

A debrief can explore links between the activity experience and other course content or current events. The students might describe the experience including “AHAs,” frustrations, and insights. Were there methodologies they became curious about, if only for the future? Did the experience help them to understand where others may be “coming from” in their workplaces, communities, or families?

Reflections

On the surface, this activity is about the transition from research ideas through to research methodologies (at their intersection, ideas and methodologies help to refine research questions). At a deeper level, this activity has the potential to open students' eyes

to different ontologies, epistemologies, and worldviews. Some students may struggle with this, especially if their education/lives to date have been grounded in a specific discipline or an unwavering belief in a single, external truth.

Not long ago, there were strong connections between fields or disciplines and methodologies: anthropologists used ethnography; natural scientists used the scientific method; and so on. Lines have blurred in at least three ways.

- Individual researchers may branch out beyond the traditional: a biologist might use action research to explore the potential of citizen science to protect biodiversity.
- Some researchers (such as Gerald Midgley) are pluralists, mixing methodologies as an artist might mix paints from a palette. One might have a case study informed by ethnography, or grounded theory informed by action research.
- At a broader scale, we see evidence of boundary spanning in fields such as astrophysics, sociobiology, sociolinguistics, and ecopsychology. As our world becomes more complex, I find that boundary-spanning approaches can produce important insights. However, one needs to balance thoughtful boundary-spanning with scope. A student may want to do a mixed method study, for example, when it would be more realistic to conduct qualitative research that could guide a subsequent quantitative study.

In my experience, frictions may emerge between forms of positivism and other ways of knowing. This may need to be addressed through parallel dialogue.

People facilitating this activity may not feel comfortable with some types of research. This could stem from biases, lack of knowledge, or lack of experience. If the discomfort comes from an informed view that a particular methodology is inappropriate for the program, then it might be removed from the list of students'

options. Otherwise, it may be possible to access resources in texts, on the web, or through guest presenters.

This activity is designed for novice academic researchers, or researchers considering new forms of inquiry. However, I believe the learning benefits can be much broader. The activity can help people learn to understand different perspectives and experience the power of re-framing (Jorgenson & Steier, 2013). These skills can help with processes including personal leadership, systems change, problem-solving, conflict resolution and innovation.

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Appendix A: Additional Resources for Learning

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About the Author

Alice MacGillivray

Alice MacGillivray has been called a nexialist because of her consulting, research, writing and teaching across boundaries. Her degrees (BGS, MA, MA, PhD) are all interdisciplinary; her most recent degree is a PhD in Human and Organizational Systems from Fielding Graduate University. She teaches and supervises theses in graduate programs at Royal Roads University, and is a Fellow with the Institute for Social Innovation at Fielding Graduate University.

14. Exploring Qualitative and Quantitative Approaches to Inquiry through Fishbowl Role Plays

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Rationale

Determining a specific research approach is one of the key decisions that students will make when they design their own studies (Thomas, 2013). This decision process likely requires a substantive understanding of the distinctions between qualitative and quantitative research methods (Morgan, 2016; Bahari, 2010; Smeyers, 2008). The activity, originally developed by Hamilton & Purvey (2010), uses a role-playing scenario to help students understand the fundamental characteristics of qualitative and quantitative research as well as their differences and distinctions. At the beginning of the session, students are introduced to two faculty members, a quantitatively oriented faculty member, “Dr. Digit Head”, and a qualitatively oriented faculty member, “Dr. Ima Flyonthewall.” The two faculty members are in the midst of a debate between the relative merits of quantitative vs. qualitative research approaches while waiting for a departmental meeting to start. They

each have entrenched perspectives but are able to share the respective assumptions, qualities, and epistemological foundations of their dominant approach to research-based inquiry. The activity uses a fishbowl format (Lipmanowicz & McCandless, 2014) that allows students to encircle the two faculty members as they proceed to debate the relative merits of their own approach. The role play concludes with a third faculty member showing up and explaining the value of mixed methods to “Dr. Digit Head” and “Dr. Ima Flyonthewall.” The role play is performed in an exaggerated and slapstick way, complete with suitable props and dress to add a sense of levity to a topic that new graduate students often find challenging to explore.

The expected outcome of this activity is to help students describe and discern the differences between qualitative and quantitative research designs with special emphasis on the key assumptions, characteristics, strengths, limitations, and associated research paradigms with both approaches to research. Being aware of these differences helps students decide on appropriate research designs and aids them in explaining the underlying principles and assumptions that frame their own research approach (Monroe et al., 2019; Ross et al., 2017; Thomas, 2013; Mason, 1996; Cresswell, 1994).

Fishbowls feature a small interior circle of participants surrounded by a larger outside circle of participants (Lipmanowicz & McCandless, 2014). While the inside group of participants engage in a discussion, the outside group is free to listen and to share questions with classmates standing beside them. The use of role play is particularly helpful as an engagement strategy when the content can be viewed as somewhat dull and unstimulating (Howell, 1992) or when the instructor wants to use an alternative approach to motivate students and enhance their understanding of certain concepts (Stevens, 2015; Rao & Stupans, 2012). It enables students to actively participate and immerse themselves in situations that are more realistic and relevant to their personal experience. As well, it enables the instructor to vary the instructional process by adding a different kind of learning activity to the teaching of research

methods. Furthermore, students who are new to the exploration of research paradigms can observe the role play and join in when they are comfortable.

Overview

The following steps were taken to plan, organize, and implement the activity:

1. At the beginning of the class, a small table with two chairs is arranged in the middle of the classroom with space cleared around the table for students to stand and observe. Cardboard name plates inscribed with “Dr. Digit Head” and “Dr. Ima Flyonthewall” are placed in front of each respective chair.
2. The students are asked in advance to form a circle around the table in the center of the room after they enter the classroom following a break. Once they are positioned, “Dr. Digit Head” enters the room and proceeds to sit at the chair.
3. After a few minutes have passed, “Dr. Ima Flyonthewall,” an exemplary and well-known qualitative researcher, enters the room very slowly and takes a few snapshots of the room’s layout at its entrance. They slowly move to the other chair, visibly and obtrusively observing the details of the room on the way.
4. “Dr. Digit Head” begins to castigate “Dr. Ima Flyonthewall” for being late and proceeds to make an offhand remark about “time being relative to qualitative researchers.” As noted in the script provided in Appendix A, the two researchers begin to trade quips and jokes about each others’ preferred mode of inquiry which then turns into a debate between the virtues, assumptions, epistemologies, and methods of qualitative versus quantitative approaches to research in the social sciences.

5. As the two researchers' positions and arguments become more entrenched, a third faculty member enters the room and proceeds to comment that the two researchers have been having the same debate for decades and concludes the role play by stating they should both consider a third approach that involves mixed methods.
6. Afterwards, students are given the script as well as a summary table of the distinctions between the two approaches. The summary table, featured in Appendix B, shows the distinctions between qualitative and quantitative approaches along several dimensions including definitions, assumptions, epistemologies, and methods of inquiry.
7. In debriefing the activity, students are invited to ask clarifying questions about the key points raised in the debate. Finally, the class is asked to consider the implications of the three main approaches—qualitative, quantitative, and mixed methods—for designing applied research studies.

Notes about the activity

In-depth readings about the distinctions between qualitative and quantitative research are assigned prior to the launch of this research activity.

In the classroom, the two main roles have been played by the course instructors as well as a guest instructor but could also be played by a graduate student, teaching assistant, or a former student.

Although this activity has been used primarily in educational leadership programs, its script can be adapted to support applications to specific disciplines and fields.

The activity was originally performed in English but, more recently, the script has been translated into Simplified Chinese and delivered in Mandarin to classes of Chinese and bilingual (Chinese

and English) graduate students in China. With practice and the assistance of Pinyin, an English-speaking instructor has assumed the role of “Dr. Digit Head” and a Chinese-speaking colleague has assumed the role of “Dr. Ima Flyonthewall.” The supporting handout of distinctions between qualitative and quantitative research have been translated into Chinese as well.

As well, after running this activity a couple of times, I added a third handout, “The Chair as a Subject-Object of Research” that helps to explain the differences in positivist and interpretivist perspectives using the reference to the “the chair” in the script. This handout is provided in Appendix C.

This activity has informed the undertaking of two subsequent student assignments. The first assignment is a team activity that requires students to research and present a specific data collection method to the rest of the class. As part of their presentation, they examine and explain if and, potentially, how the method could be undertaken from both a qualitative and quantitative perspective. The second assignment involves the development of a short proposal for developing a research study related to a leadership or teaching issue that is relevant to their professional role.

In its current form, the activity has not been adapted to an online format. Several strategies could be employed, however, to overcome this limitation and to facilitate the re-purposing of the activity for online course use. For example, the role play activity could be video recorded, or a cartoon version created using an application such as Powtoon. In either case, discussion forums or a virtual fishbowl activity could accompany the video or cartoon to support the student debriefing and reflection process.

Reflection

I have used this activity in research methods classes over a 10-year period. Positive feedback from students has emphasized the value

of having complex material presented in a fun and lighthearted way. There is some initial confusion and wonderment among students at the beginning of the activity when the two “professors” silently and surreptitiously enter the classroom because it is an unexpected change in the kind of learning activity expected. As well, students have appreciated receiving the supplemental handouts and having an opportunity to collectively unpack key distinctions between qualitative and quantitative research in the follow-up debriefing session.

In more recent years, I have modified the activity to enable students to jump into the centre of the fishbowl, take an active part in the role play by replacing one of the original “characters” and, in an improvisational manner, contribute further arguments to one side of the quantitative–qualitative debate. The transition from observer to actor has been facilitated by giving the participating students the hats of the corresponding characters to wear when they assume their respective roles. This addition has made the activity a more engaging and dynamic for the class.

In addition to the benefits to students, I have found that this activity has served to energize my teaching by giving me another strategy to introduce quite dry and complex concepts to relatively new graduate students besides conducting lectures or seminars. As such, the role play serves not only as an example of active learning for students but also an example of active teaching for instructors.

The role play is a fun and energizing activity to do in a team-teaching context, but I have also used the activity when willing colleagues are available to play the other two roles. It has been helpful, after the role play, to invite the guest actors to share their experiences with qualitative and quantitative methods as a way to honour their involvement and assistance in the role-playing process.

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Appendix A: Script for DQ2 Activity

[Students in circle, 3 chairs and desk in the middle, Dr. Digit Head is busily punching numbers into his calculator. He keeps looking at his watch and seems exasperated.]

[Dr. Ima Flyonthewall quietly enters the classroom... trying to be innocuous, trying to be a “fly on the wall”.]

Digit: Well, here comes Dr. Ima Flyonthewall. Always late. You qualitative researchers, everything is relative to you, even time. I bet you can't wait to follow me around, studying everything I do, even all of my habits.

[Dr. Flyonthewall takes him up on his offer, and starts taking pictures and observing him.]

Fly: Well, yes, indeed, I do want to follow you around; I want to shadow you. I want to learn about your authentic, lived experiences, as that is your reality. My reality may be very different, but one isn't necessarily more real or more valid than the other. Multiple realities can, in fact, do, exist. Relativism is not a negative; it is a positive and beneficial perspective.

Digit: I don't really get how you carry out your research. There's nothing really systematic and pre-structured about it – it's like you decide on the spot what data you want to collect and from whom. Do you really know what an hypothesis really is anyway?

Fly: Of course I know what a hypothesis is. But I reject that as a

starting point. I do field work. I rely on first hand knowledge, where my starting point is situational and related to the environment. Starting with a hypothesis shows your own bias, and you allow your work to be governed by your bias. I prefer to let the themes and theories emerge from my field work.

Digit: And what does reality mean to you? You always seem so vague about it. Let's take this chair. To me it's a chair, it looks like a chair, it feels like a chair, so it is a chair, nothing more. The natural laws of science tell me that it can't be anything else but a chair because humans use it for sitting. Everyone knows this because it is an objective fact – it just is.

Fly: But what makes this a chair? It may be a chair to you, but it may not be to someone else. In some cultures, there is no such thing as chair. People do not use chairs. So, it is not an objective reality – it is what you understand it to be. Everything is subjective!

Digit: And another point, I don't understand how you can draw conclusions from your data. Actually I don't even understand what you call data – there are no numbers, no statistics, no variables, nothing seems standardized or even counted. You don't even use questionnaires or tests to determine how many of your respondents share the same viewpoints. How can you make any inferences about human behaviour in general if you don't use these methods?

Fly: Excuse me while I just take a photograph of you and make sure the microphone is working....

Life-histories, intensive interviewing, participant-observation field notes, journal, diaries, photographs – these are the methods I use. Quite frankly, I don't know how you can understand anything about human experience if you just rely on numbers. According to you, unless you survey me, digit-ize me, I just don't exist. I'm not an individual to you, I'm just a number. Step outside your numbers, step outside your veil of objectivity and get to know people as individuals. We are not just numbers, we are individuals with rich experiences and you can learn from us. Step out from behind your desk and get involved with the real world!

Digit: And furthermore, I've studied questionnaire design. I know

that I can't analyze my data unless I have a large sample size of research subjects that have been randomly selected. I don't know how you can study anything with the small sample sizes you use – I mean, really, a sample of 10? How did you statistically determine this number?

Fly: Why do you need a large sample size? One individual's life experiences is enough information for you to feast on your entire career! You focus on breadth, but what you end up with is so shallow. I go for depth, for richness, for the messiness of data. My data is not something easily removed from people, but deeply embedded with them.

Digit: Then what about research bias? Where are all of your controls? I don't interact with my subjects because that's going to affect my results. I have to remain detached and objective and impersonal. I'm a researcher – I need to be impartial and removed from the research setting.

Fly: You think you are impartial?? HA! You wear your biases on your sleeve. Look at you – everything about you screams digit head.

I don't value impartiality – it is impossible not to be biased. I accept and acknowledge my biases. I know myself. I collaborate and become involved with my participants, because the knowledge I gain from collaborating with my research participants helps my analysis. I purposefully minimize the distance between myself and my participants. I use triangulation methods, I confirm my analysis with my participants, and I search for robust patterns across my data gathering methods. You quantitative digit-heads think that qualitative researchers have no quality control or credibility, but it is not true!

Digit: Validity is really important to my work – it's important to me to be always certain that my instrument measures what it is supposed to measure.

Also, reliability is important too. I have to statistically determine if my instrument measures things consistently across multiple administrations.

Do these terms mean anything to you?

Fly: What these terms mean to me is that you are stuck in the academy. You are detached from your subjects and you live in a highly controlled environment. You are not creative, you are not willing to think outside the box. Your lens is so narrow and so controlled that you wouldn't notice a new idea or an authentic experience if you stepped on it!

Digit: But, I *am* creative. My pie charts always have lots of colours on them!

[Wendy walks in, shaking her head and smiles like she has heard this debate many times before]

"Wait a minute."

"Wait a minute."

"You two will NEVER agree. You will be having this argument when you are retired and grey and too old to walk."

"Can't you see the world is shifting? Many, many people now realize that these approaches do not have to be in opposition. They work with each other, not against each other."

"This new approach is called ... Mixed Methods!"

"Try it, you will like it!"

THE END

Appendix B: Qualitative vs. Quantitative Research Summary Table

FOCUSING YOUR STUDY: Distinctions between Quantitative and Qualitative Research

	Qualitative	Quantitative
PURPOSE: “Goals of Inquiry”	• seeks to understand concepts, phenomena, perspectives	• seeks to explain causes • prove definitively through hard data, explain social changes
EPISTEMOLOGY: “Study of Knowledge” “Role of Science”	• focus on description • sympathetic to participants' frame of reference • focus on unique as well as commonly-held perspectives particular to the case	• focus on explanation and prediction • search for generalizable “natural laws” (that explain and predict) • there are regularities and causal relationships that can be definitively established
ONTOLOGY “Nature of Reality” “Assumptions about the World”	• reality is socially-constructed, socially-defined, open to more than one opinion • multiple realities exist • focus on relativism	• reality exists external to and independent of the individual • social world is concrete like the natural world—there are natural “laws” that govern it • behaviour can be explained through objective facts, one reality • focus on realism

METHODOLOGY “Methods of Inquiry” “Scientific Procedures”	• use of inductive approach • acquire first-hand knowledge • situational and related to inquiry and environment • do “field work” • rely on “life histories, intensive interviewing, participant-observation, field notes, journals/ diaries • primary focus is on “textual”	• use of deductive approach • test hypotheses • use of established procedures, focus on observable variables, sees other variables as noise, addresses other variables to minimize impact on results, • use “systematic protocols” • rely on “standardized tests”, “surveys”, “instruments” • primary focus is on “numeric data”
RESEARCH DESIGN	• “emergent”, unfolds depending on context	• “highly-controlled”, prescriptive, conforms to established norms
ROLE OF THEORY	• use of inductive approach • theory generated from the data	• use of deductive approach • data used to confirm theory
FOCUS OF INQUIRY	• focus on “depth” of discovery and explanation	• focus on “breadth” of explanation

ROLE OF THE RESEARCHER	• interactive with “participants” • subjective • value-laden • report “faithfully” multiple perspectives • understand the context • focus on individual interpretations and perspectives	• independent of “subjects” • objective • value-free • discover objective truths • de-emphasize individual judgments • control for context
RESEARCH SETTING	• naturalistic	• applied or laboratory
RELATIONSHIP TO SUBJECTS	• immersed within setting • collaborative where the researchers are interested and often emotionally involved with the participants, sometimes even the participants are emotionally involved	• detached, clinical relationship with subjects, subjects become data rather than individuals in a context
STRENGTHS	• description and exploration	• causation and prediction
SAMPLING PROCESS	• purposive, convenience	• random, representative
RESOURCES	• uses everything at disposal	• highly-controlled • rely on established procedures

ROLE OF VALUES	accepted, acknowledged, articulated	de-emphasized or removed by methodology and language
USE OF LANGUAGE	- informal, descriptive, “rich”, active and personal voice (1st person sometimes) - tell story, use language of participants - report perspectives, beliefs, observations - use accepted qualitative terminology	- formal, prescriptive, detached, neutral, impersonal (3rd person) and passive voice, - report “facts” - use accepted quantitative terminology
ANALYSIS OF DATA	- coding and categorizing using comparative methods and grounded theory - search for robust patterns	- statistical techniques and tests - striving to test statistical hypotheses
QUALITY CONTROL/ CREDIBILITY	- minimize distance between researcher and participants - strive for “trustworthiness”, “authenticity” and “consistency” - use triangulation, confirmations with participants, rival explanations and hypotheses	- control for “bias” and “error” - strive for “validity” and “reliability” - use statistical and operational methods to control error and variability, increase generalizability
RELATED NAMES	constructivism, post-positivism, interpretive theory, phenomenology, naturalistic inquiry, postmodernism	positivism, empiricism, experimentalism

Appendix C: The Chair as an Object-Subject of Research

The Chair (researched from different perspectives)

	Positivist	Interpretivist
Epistemological <i>What we see and understand about the world—our theory of knowledge</i>	We know this is a chair because we can see it, touch it, and if it's old, we might be able to hear it – it is tangible (Independent).	We know this is a chair because the people who have called it a chair have told us it is a chair or we have observed them sitting in it (Interactive).
Ontological <i>How we view reality—our sense of being in the world</i>	The chair “just exists” and its existence is separate from the people who use it. It's existence is independent of any uses –it is an object outside of our own existence.	The chair only exists because we have decided through our inter-subjectivity that it exists as a chair. It is only defined as a chair because we have agreed, probably tacitly, that it is chair because we sit in it.
Methodological <i>How we conduct research in specific ways – the rationale and framework for our specific research approach</i>	Survey Research – analyze frequency of use, classification of different uses. Quasi-Experimental Design – test out a theory of “chair use” by altering the “sitting conditions” or comparing objectively-measured comfort levels between different groups. Correlational Study – compare two variables to see how they inter-relate, e.g. height of chair seat and reported feelings of comfort (using a rating scale)	Narrative Inquiry – gather and analyze people's stories of how they used the chair. Phenomenological Research – interview different people to determine their “lived experiences” of using the chair – what meaning does the chair have in their lives? Ethnographic Research – observe how the chair is being used in a defined cultural setting, gather other artifacts that help to understand its <i>in situ</i> use.

About the Author

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Doug Hamilton is Professor and Head of the MA in Educational Leadership and Management (International) program at Royal Roads University. He is a scholar, program developer, international speaker, and workshop facilitator. His scholarly interests include research into various kinds of learning innovations that bridge the gap between academic study and the professional workplace. He is particularly interested in the role that technology, collaborative forms of engagement, action research, and reflective practice can play to enhance and support professional learning.

SECTION IV

ENGAGING STUDENTS IN
DATA GATHERING

15. Using Photovoice to Engage Learners in a Deep Exploration of Social Justice Issues that Impact their Environment

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Rationale

This chapter focuses on a Photovoice project which was used as a form of assessment within a Masters-level course entitled Leading for Social Justice within a Master of Arts in Educational Leadership and Management program at Royal Roads University. The Photovoice project was used early in the course and was integrated to support a reflection, on the part of the students, around social justice in schools. The project eventually led to the drafting of a more traditional research paper on the ways educational leaders can use critical pedagogy to transform the school environment. The difficulty faced by many students within this course was to make personal connections to the concepts of oppression and marginalization in education (Parkhouse, 2016; Thurber, et al, 2019).

It is generally very difficult for graduate students to identify social injustice in schools and draw up an institutional action plan

addressing these injustices—a task which their final assignment, a more conventional research paper, requires—if they are not able to connect the conceptual content of the course to some of their lived experiences with inequities in the classroom. It is a central premise of critical pedagogy that students within the banking model (Alam, 2013; Kaya & Kaya, 2017) are usually unaware of their status as disenfranchised learners (Katz, 2014). The educator themselves must create conditions that trigger a phenomenon of conscientization (Macedo, 2017; Villanueva Vargas, 2019), and I hoped Photovoice would support students through this process and do so in congenial and appealing way. This activity was created in the very first year this course was launched, and the instructor reflection presented here and the use of Photovoice were at the heart of the course design.

Photovoice is a process which draws from popular culture initiatives developed by photographers with marginalized youth groups (Leung & Flanagan, 2019; Sitter, 2017). It has since been adopted widely in various sectors of education and is frequently now integrated as a form of assessment (Behrendt & Machtmes, 2016; Hunter, et al, 2020). At its roots, this remains a very simple process: individuals who may feel disempowered, marginalized, and oppressed, or simply stigmatized and voiceless, use visual processes—mostly photography but increasingly video—to gain recognition and showcase their lived experience (Drainoni et al., 2019).

The past experience of the instructor within similar courses involved challenges described by Freire (Caldas Chumbes, 2019; Cochran-Smith et al., 2009; Freire, 2020): students introduced to concepts of social justice in the educational setting felt interested in but simultaneously distant from the concepts introduced in the course. They could conceive of social inequities in the classroom, but seemingly had never experienced these themselves. Finding a voice and identity as potentially marginalized or oppressed individuals was also a hurdle (Holtby et al., 2015). The aim of this first assignment was to encourage the students to create a direct

affective connection between the inequities discussed in class and their own lived experiences, particularly with regard to gender, sexual orientation, race, socio-economic status, disability, and family status. Once this visceral connection to the individual lived experience was in place, it would be far easier and organic for the students to identify issues they might want to select, explore, and research in their final paper within the course: the school action plan.

Overview

The main objective was to draw in students who at first may have a conceptual and rather distant understanding of social inequities in school, and encourage them to identify, record and analyze instances where social justice issues have affected them in an educational setting. They were invited to use any or all of their perspectives and lenses as individuals, learners, educators, or leaders. They would later return to this work and focus on one of these themes for their final research project: a school action plan for systemic change. The process sought to create a practical, hands-on, and highly personalized pathway to the research process which unfolds more formally in the second half of the course, in order to guarantee the learner's immersion and connectedness to the social justice issues being explored. The aim of the activity was to focus on the affective connection of the learners to the issues they have identified, and it therefore required a delivery format that would not distract from this highly personalized process of reflection. Photovoice is an ideal tool to support this activity as it enables students to showcase their lived experience of the concepts and issues at play without requiring them to get entangled in formal academic requirements or writing outcomes. Fluidity and immediacy can hence be preserved and showcased once affective connection to the central themes of the course has occurred.

The project takes place early on in the course in week two of an eight-week course. Students were invited to create a Photovoice project within which they would identify their own experiences with social justice issues in school, either from their lived experience as a person impacted by discrimination and oppression, or as a stakeholder having observed such oppression directly. Submissions were accepted both in photo and video formats. Captions and voice-overs were allowed but it was made clear the message had to be primarily visual. The assignment was preceded by a class on the history and objectives of Photovoice as a movement. The course also included several readings on the possible uses of Photovoice in educational settings and on the rationale behind its use in the classroom. The activity is highly personal in nature but also involves a lot of group work: the Photovoice project are shared in an open forum on the Learning Management System (LMS). Students avidly watched each other's offerings and commented abundantly on each other's work; the feedback targeting both process and their experiences themselves.

The students' level of comfort with the process was at first not high across the classroom. Some students took to the idea quickly; others needed some reassurance and clearly felt more comfortable with traditional written formats of submission. The instructor provided examples of Photovoice projects and remained available for one-on-one discussions about the project. The students who were at first reticent to explore the process eventually became aware the aim of the activity was to create a personal, lived, almost visceral connection to the key concepts of oppression and marginalization. They came to appreciate that in order for this affective connection to take place they needed to worry less about traditional academic requirements and had to trust the process. The unease the students initially felt is conceptualized within the wider literature on Critical Pedagogy and the process of conscientization (El-Amin et al., 2017; Jemal 2017). The strength of the banking model is such that, when asked to embrace processes that challenge traditional education, learners may often experience transitional

friction i.e. feel that everything pressures them into maintaining status quo. By the time the assignment was submitted and the activity completed, however, the students expressed satisfaction with the finished project. They expressed enthusiasm not just for completing their Photovoice project but also in viewing their peers' projects– the assignment was shared within the class in an open format. It generated extensive discussions on the nature, frequency, and intensity of occurrences of oppression and marginalization in educational contexts.

The ultimate objective of the activity was to enable the students to develop an awareness of inequities within educational contexts, which in turn would lead them to the creation of an in-depth action plan for their school. Although the students were at times initially ill at ease experimenting with the Photovoice format, which was new to them (Liebenberg, 2018; Strack et al., 2018), by the time they started their final assignment and began designing a school action plan, they were excited, comfortable, and empowered to discuss and identify inequities in their school context. The first Photovoice activity had successfully allowed for the development of a personal and authentic connection on the part of the students to the central issues of the course and more broadly to the graduate research process.

Students mentioned, within the course itself, their pleasure at discovering and exploring the Photovoice process. It was repeatedly mentioned in the course evaluation, as well as the asynchronous class forums themselves. They tended to mention both the pleasure they experience at carrying out this activity, and the unease they originally felt. They articulated that it pushed them out of their zone of comfort and forced them to relate to the central concepts of the course in a way that was not solely conceptual or academic. This, in turn, created depth and authenticity when they reached the final project and were tackling a research process. Some students volunteered to have their Photovoice projects featured within the program's open WordPress site, which showcases program activities to the public.

The course was launched in 2019 and this activity was included in its first iteration. The voluminous discussions that took place within the class and in the forum where the projects were shared enabled the instructor to gain a good understanding of the successes of the activity, while also allowing for some improvements. The preparation and week leading up to the activity was substantially further developed and strengthened to avoid any discomfort or hesitancy on the part of students. Further practical examples of the use of Photovoice in other contexts were added as support to ease the students into the activity. The activity is now a regular fixture of the course.

Reflection

I was extremely satisfied by the integration of the activity within the course and it will remain a feature of its design in future years. It served the purpose of supporting students while they created affective connections to the course content, which in turn enabled them to develop their awareness of inequities in school and served as the basis for the final research component of the course. Furthermore, the activity served to develop conscientization among students with regard to marginalization and oppression (Bradley-Levine, 2012; Sleeter, et al, 2004). It allowed them to shift their mindset from that of passive observer and listener, to a position of active, connected, and implicated stakeholder in relation to social justice. All students, in the end, successfully and poignantly showcased in their projects inequities they had either observed or experienced. Most students in fact did describe their own lived experiences as victims of marginalization and oppression.

The activity has also been instrumental in easing students into an active learning process (Sewagegn & Boitumelo, 2018), a state of mind which is sought to then be maintained through the program. Active learning is a cornerstone of the institution's learning,

teaching and research framework (RRU, 2020). The difficulty of transitioning students who have not yet experienced active learning into this mindset is, however, often underestimated. There can be considerable transitional friction when encouraging students to make this shift (CHERPP, 2019; Roberts, 2019). Banking model learning—originally defined by Freire (2000) as passive, rote learning subject to hierarchical in-class power dynamics—can feel very safe to students who have not engaged in a rich reflection around their own learning. Active learning can appear to them initially as more demanding, less rewarding in terms of grades, and requiring them to step firmly out of their zone of comfort (Hakkarainen, 2011; Tharayil, 2018). Supporting students while they explore and embrace active learning is a task that can, as a result, be daunting for an instructor. Using the Photovoice activity at the beginning of a course seamlessly encouraged learners to experiment with the production of content and with the use of tools (photography, video, media montage, music, etc.) which gave them autonomy and supported their creativity (Margolis & Zunjarwad, 2018). It gently placed them in the driver seat and sowed the seeds of student-centered research which later blossomed into the final action plan for a school.

Similarly, while the notion of applied research in graduate school is appealing, it can be difficult for instructors to successfully create this mindset among learners who are used to either more passive roles in the classroom, or who may consider research as a mostly academic and abstract process (Smell & Packard, 2019). Students can also find the osmosis with community engagement—an essential part of applied research—difficult to navigate, embrace and master (Blanford, et al, 2020). The final assignment of this course is designed from an applied research lens: students identify social justice issues in their own context; they seek solutions that align with the key concepts discussed in the course content; they apply these solutions in context; and produce a school action plan that is pragmatic, evidence-based, and of immediate value to leadership in their professional environments. It would be difficult

to support students to achieve a sufficient level of comfort in relation to this task at the beginning of a graduate degree if they had not had access to this Photovoice. The project is a user-friendly and playful activity that creates a space for students to develop their curiosity, autonomy, hands-on ability, and affective connection to the central concepts and issues identified for inquiry.

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Appendix

Recommended resources include:

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,What%20is%20Photovoice%3F,and%20share%20them%20with%20others.

About the Author

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Frédéric Fovet is an Assistant Professor in the School of Education at Thompson Rivers University and teaches on the MED program. He has held, in turn, the positions of Head of Accessibility Services at McGill University, Assistant Professor in the Faculty of Education at the University of Prince Edward Island, and Associate Professor in the School of Education and Technology at Royal Roads University.

Fovet is an inclusion specialist with a specific interest in emotional and behavioural difficulties (EBD), critical pedagogy and universal design for learning (UDL). Fovet also has a strong grounding in Disability Studies, and has served as a teacher and principal in schools with a focus on the successful inclusion of students with EBD. He acts as a consultant, domestically and internationally, both in the K-12 and post-secondary sectors, in relation to the integration of UDL and to management of change in the context of inclusive pedagogy.

Fovet's research portfolio includes: change management and the integration of technology as a tool for inclusion in K-12 schools; the strategic implementation of UDL in the K-12 and post-secondary sectors; professional development design for teachers on the topics of EBD and using UDL with international students; mental health as a strategic issue in education; and using the social model of disability in schools to develop inclusive practices.

16. Engaging Research Participants through Photovoice

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Rationale

One of the requirements for the Master of Arts in Leadership (MAL) program is to undertake an action-oriented and engaged leadership capstone research project or thesis in collaboration with a partnering organization (e.g., the public, private, or non-profit organization, department, or unit where the student works). As mid-career professionals, many students complete the capstone requirement in the context of their own workplace. During the second year of their studies, faculty encourage students to find the methods and processes best suited to the context and culture of their partnering organizations. Therefore, aligned with this book's theme of "engaging students in data gathering," this chapter describes a workshop designed to introduce arts-based research in general and explore one method, Photovoice, for possible use in students' capstone research. Moreover, this chapter demonstrates how offering a Photovoice experience in the classroom models its potential use as an applied research method for students, as well

as a teaching strategy to deepen the conversations with students about the change process in organizations.

Arts-based methods draw upon symbolic ways of knowing. Rather than an overt description of reality, the symbolic images found in poetry, fiction, theatre, paintings, photographs, and so on can bring to the surface thoughts, concerns, desires, or insights that were not previously conscious (Davis-Manigaulte et al., 2006). When facilitated skillfully, arts-based processes can also serve to build trust, empathy, connection, and community (Etmanski, 2020). As students begin exploring research paradigms, methodologies, and methods, many are surprised to learn about the range of options available beyond the better-known surveys, interviews, and focus groups. Most graduate students in this program have never been exposed to arts-based methods, including Photovoice.

Scholars are increasingly calling for “research that more closely follows the imaginary and improvisational processes and practices of artists, poets, and musicians as compared with inquiry that is commonly associated with the logical-rational approaches in the sciences and social sciences” (Garoian, 2011, pp. 157–158). As Clover (2014) identified, “symbol, metaphor, and imagery play an important role in reasoning, explaining, and understanding the world enabling new connections between things concrete and things abstract” (p. 142). Such arts-based and arts-informed approaches to research have been gaining momentum in the academy and opening opportunities for creative processes (data collection and analysis) and products.

The method of Photovoice can be understood as a “process by which people can identify, represent, and enhance their community through a specific photographic technique” (Wang & Burris, 1997, p. 369). Photovoice promotes social change through both photography and a structured group process (Chonody et al., 2012; Langdon et al., 2014). It promotes “critical dialogue and knowledge about important issues through large and small group discussion of photographs” (Wang & Burris, 1997). In so doing, “Photovoice broadens the nature of photography from being a fine art form to being central to

socially and politically engaged praxis” (Sutton-Brown, 2014, p. 170). This intent is in alignment with the engaged and action-oriented leadership capstones promoted in MAL (Etmanski et al., 2022).

As a research method, Photovoice enables “researchers and decision makers to visualize issues from participants’ point of view” (Kelly, 2016, p. 64) by putting “cameras in the hands of research participants, giving them a ‘voice’ to document their surroundings, [and] empowering them to construct the knowledge and representations of their own environment” (Falconer, 2014, p. 2). Wang and Burris (1997, p. 170) identified three key objectives of Photovoice that have been rearticulated in diverse ways over the years (Castleden & Garvin, 2008; Clover, 2006; Falconer, 2014; Gallo, 2001; Sutton-Brown, 2014; Wang, 1999; Wang & Redwood-Jones, 2001). These are:

1. to empower participants to identify for themselves their community’s assets, challenges, needs, or concerns;
2. to create a space for participants to critically dialogue, using the photos as an entry point; and
3. to have an impact on policy makers and enact community change.

Kelly (2016) identified the primary reasons for using Photovoice as follows: (a) the visual display is more impactful for audience members (especially decision makers) and can call attention to the issue more powerfully than a standard report (see also Heykoop et al., on knowledge translation in this collection), and (b) participants often find the method engaging and fun (p. 68). A transformative potential emerges from creating the conditions that allow people (in this case members of an organization) to see in new ways.

Photovoice is typically, though not exclusively, used with “marginalized populations that have been silenced in the political arena” (Sutton-Brown, 2014, p. 169). Examples are primarily found in health contexts (Falconer, 2014; Kelly, 2016; Wang, 1999; Wang & Burris, 1997), in the Global South (Falconer, 2014), and with youth

(Dixon & Hadjialexiou, 2005; Holtby et al., 2015). There are exceptions, such as Massengale's et al., (2016) account of using Photovoice as a pedagogical tool to support students preparing for helping professions. However, it is difficult to find documented examples of Photovoice used in organizational change contexts, despite increasing calls for creativity and innovation in leadership and change management (Amabile, 1988; 1996; Clerkin, 2015; Goldman et al., 2016; Henry & Mayle, 2002; Rickards, 1999). As such, this workshop introduced students to Photovoice; supported them in discerning whether this method was appropriate to their specific organizational context, audience(s), and topic; and explored whether it could support members of their organization to engage in a process of change. Students were invited to consider whether elements of community change documented in the Photovoice literature were transferrable to organizational change.

Overview

In preparation for this workshop, I asked students to bring a digital camera (phone; tablet, etc.) with them to class and come prepared to go outside.

We then engaged in a brief exercise in seeing from diverse perspectives. The image below (see Figure 1) was projected onto the classroom screen and students were asked: "What do you see?"

Figure 1

Sample image used in Photovoice workshop



Responses to this question ranged from: “blood,” “an oil spill,” “concrete,” and “a dilapidated neighbourhood;” to “a flower blossoming,” “the tenacity of life force,” “Leonard Cohen’s ‘there’s a crack in everything,’” and “hope.” Even that the image was not in sharp focus became symbolic of blurred reality or confusion.

The purpose was to demonstrate not only that people see the same image differently, but also that paying attention to how others see the world (in this case, an image) can help to expand our own perceptions. When I asked: “Who is right?” not surprisingly, responses illustrated there was no one right answer and, therefore, truth was difficult to assess—a topic to which we returned in later conversations about epistemology and ontology.

I then asked students to go outside, camera in hand, and take

a photograph that responded to the prompt: “the journey ahead.” Although many students interpreted this as related to their upcoming capstone project or thesis, the prompt was intentionally open-ended and left to interpretation.

I asked that students email their photos directly to me so that by the time everyone returned to the classroom I was able to project the images onto the screen.

Upon returning to the classroom, we then engaged in a similar dialogue about each photo as with the introductory activity. I invited others in the room to speak first about what they saw before inviting photographers to share their intended meaning. I inquired further into how hearing others’ interpretations of their photos affected them or changed their perspectives.

Based on David Diamond’s work (2004), as a facilitator, I often use the question: “What’s inside this for you?” to invite conversation. This question works on two levels: first it asks them to describe their experience of the learning activity, and second, it invites them to consider how their experience of the activity might represent larger lessons about the topic we are exploring. In so doing, it invites them to consider the symbolic potential of the activity (see Etmanski 2007, pp. 103–105 for more on this question). Through this process, we deepened our conversation about how knowledge and truth can expand and become co-created through an arts-based method such as Photovoice.

Aligned with the MAL program goals of conducting an action-oriented and engaged leadership capstone research project or thesis in collaboration with a partnering organization, we explored the contexts in which this kind of a method would be beneficial in supporting applied organizational research for change. We closed by discussing how this kind of method could be integrated into an overarching change process.

Reflection

I selected Photovoice as an example of an arts-based method for two reasons:

1. Now that mobile phone or tablet cameras are ubiquitous among Canadian students, it is a reasonably accessible activity to conduct; and
2. Having engaged with theatre-based research for my doctoral research (Etmanski, 2007), I am aware that some arts-based methods (e.g., theatre) can be perceived as more threatening than others. Indeed, even “the word art evokes [fear] in some readers” (Etmanski, 2020, p. 255). Given the ubiquity of cameras, I see photography and/or Photovoice as perhaps the least culturally threatening to the broad range of organizational settings where students work. Whereas facilitating a workshop about a theatre process may be powerful and intriguing, through teaching in this Master’s program, I have come to understand that it is less likely that students would have the skills or desire to apply it in their own contexts.

Although the method did not resonate with all students, some opted to take it forward in their capstone research contexts. I have adapted this workshop to show how photo elicitation (e.g., with Visual Explorer TM cards from the Center for Creative Leadership) can offer new ways of seeing and understanding the world.

The role of arts-based methods in building trust, empathy, connection, and community has become a key point of reflection for me. Over years of facilitating various experiential and arts-based activities, I have learned how essential it is to create an appropriate container for this kind of learning (see, Ahenkorah, 2021 on accountable spaces; Arao & Clemens, 2013 and Jones, 2021 on brave spaces; Bishop et al., 2019 on spaces of grace; or Etmanski, 2014

on creating the learning space). Whenever I facilitate an arts-based method, I spend some time discussing the sense of vulnerability that can arise when working through the arts. As described elsewhere (Etmanski, 2020),

creative and arts-based methods are deceptively powerful. On the surface, engaging with creative or arts-based methods may be perceived as fun, lighthearted, and playful. But make no mistake: the arts are powerful methods—more powerful than one might initially imagine. Although deep, personal, or emotional responses may not necessarily emerge through a creative or arts-based practice, should you engage with the arts, it is best to be prepared for a range of emotions or mental states to emerge. (pp. 257–258)

Therefore, in closing I will offer that, as researchers and educators, we have an ethical responsibility for the welfare of participants and need to be well-prepared to support individuals and groups respectfully, compassionately, and professionally through difficult emotional responses. In addition to this ethical preparation, the potential for vulnerability through arts-based methods can lead to trust-building and a deeper sense of connection among participants. This alone can be integral to any efforts to bring people together in support of positive change.

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Author note: Thank you to graduates of the MA Leadership program: Nikki Bade, Alison Kyte, and Michelle Cassidy for their contributions to my understanding. See Etmanski, Kyte, Cassidy, & Bade (under review) for further information.

Appendix A Resources

Since Arts-Based Research has been a topic of great interest to me for nearly two decades, I began keeping track of resources several years ago. Please see this Special Issue of the *Engaged Scholar Journal* for several articles on this topic. Check out the reference lists for the articles that interest you most and book reviews at the end of the issue. See introduction of this special issue (and others listed below) for general framing of Arts-Based Research.

The following journal is open source so all articles available online free of charge:

Bishop, K., Etmanski, C., & Page, M. B. (Eds.). (2019). Engagement through the Arts. [Special issue]. *Engaged Scholar Journal* 5(2). <https://esj.usask.ca/index.php/esj/issue/view/5122>

See also this new open-source resource:

Clover, D. E., Dzulkifli, S., Galderman, H., & Sanford, K. (Eds.) (2020). *A feminist adult educator guide to aesthetic, creative and disruptive strategies in museums and community*. Victoria, Canada: An initiative of Gender Justice, Creative Pedagogies and Arts-Based Research, University of Victoria. <https://onlineacademiccommunity.uvic.ca/comarts/feminist-adult-educators-guide/>

Other Special Issues of Journals related to Arts-Based Research.

- 2020, *Canadian Journal for the Study of Adult Education*, 32(2), Learning and Teaching: Artful Narratives of Transformation
<https://cjsae.library.dal.ca/index.php/cjsae/index>
- 2012, *The International Journal of Lifelong Learning*, 31(3)
https://www.tandfonline.com/toc/tled20/31/3#.U3rD_CjzCBo
- 2011, *Action Research*, 9(1) <http://arj.sagepub.com/content/9/1.toc>
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<https://journals.sagepub.com/toc/adua/16/2>
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<http://onlinelibrary.wiley.com/doi/10.1002/ace.v2007:116/issuetoc>
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- 2002, *The Alberta Journal of Educational Research*, 48(3)
<https://journalhosting.ucalgary.ca/index.php/ajer/issue/view/4440>

SAGE Handbook on the arts in qualitative inquiry

Knowles, J. G. & Cole, A. L. (Eds.). (2008) *Handbook of the arts in qualitative inquiry: Perspectives, methodologies, examples, and issues*. Los Angeles: Sage.

Other Helpful Books

- Barndt, D. (Ed.) (2006). *Wild fire: Art as activism*. Toronto, ON: Sumach Press.
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community-based research; reconciliation and transformative learning; and bringing spirit, presence, and mindfulness into the classroom. She has served on the board of several local and global non-profits.

17. Shifting to Digital Research Methods for COVID-19 Pandemic Times and Beyond

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Rationale

Given the risks of COVID-19 transmission, researchers were required to postpone or modify any in-person data collection. However, online data collection using digital methods is now a common practice. As these methods become more commonly used, digital researchers need to be aware of the rapidly changing nature of the field and the critical ethical issues the use of digital methods pose to researchers and participants.

This resource was originally compiled to support students in the School of Leadership Studies (SLS) and is now being shared more

broadly to support and enhance the use of digital research methods during pandemic times and beyond.

Overview

Just as online learning is not a simple translation of a face-to-face classroom to an online classroom, online research using digital methods is likewise not a simple switch. The purpose of this chapter is to provide a brief overview of key considerations for research using digital methods. However, since digital tools are constantly changing, researchers likewise need to stay alert and attentive to new considerations in this rapidly shifting field.

Some considerations for digital methods

1. How might the online environment change the nature of the communication with participants?
 - Online interviews are easier to record but give you less data about non-verbal cues, and turn-taking during conversation is less natural;
 - Email interviews allow participants to think more deeply about their answers but may also take more focused effort on the part of participants.
2. What unintended impacts might a digital method have on you and/or your participant(s)?
 - Are you or they experiencing screen fatigue?
 - Does it make a difference that you can only see someone from the shoulders up?

- Who uses or has access to the tools you have selected and who will automatically be excluded?
 - How does internet access, distractions in the location from which people are joining and access to technology like headphones impact your participant(s) or potentially bias your study?
 - How is trust-building impacted by the digital environment and what can you do to account for that?
3. What unintended impacts might a digital method have with respect to online bullying/trolling/harassment?
- If you or your participants are engaging in any kind of online public discourse, what are you doing to prevent or mitigate possible harassment from bad actors?
4. How are you keeping yourself and your participants safe throughout the research process? How have you mitigated risks associated with privacy and user surveillance?
- Do the tools/platforms you have selected track and store user data as a means of earning income? (Please note: many do.)
 - If you are asking participants to participate via Zoom, and do not take precautions to password protect your meeting, you may be opening up participants to a hacking event.
 - If you are asking participants to share Facebook posts, you may be compromising the privacy of others in their friends list.
5. What are the limitations of data collection imposed on the platform?
- Some platforms do not want you collecting user data at all for research purposes (e.g., Facebook); others allow you to collect some data, but you may only store it for a certain

amount of time (e.g., Twitter). Do you know about platform-specific policies?

- Does your platform require that you make use of the platform Application Programming Interface (API)? If so, you may need specialized tools or you may need a knowledge of coding.

6. Is your use of a platform safe?

- At the beginning of the pandemic, several instances of “Zoombombing” (Yuan, 2020) were brought to the public’s attention. This has now been addressed by the waiting room and password features in Zoom. Have you taken steps to prevent other kinds of hacking? A basic safety measure is not posting the URL of your online event in social media.

7. How can you make the most of the digital platform you have chosen to use?

- Since digital interviews offer different opportunities than in-person interviews (e.g., the use of chat and/or screen sharing) are there ways you can make use of this new functionality in service of your research question?

8. How can online methods be presented in the most accessible way for those who are deaf, hard of hearing, or have visual impairments?

- Accessibility and universal design (National Disability Authority, 2020) features are slowly becoming recognized as important in a world of diversity, equity, and inclusion.

9. Can you conduct your research in another way or supplement with other methods?

- Can you use a phone or email or document analysis?
- Sometimes it's easier and more straightforward to work with non-digital technologies or with asynchronous digital technologies like email.

Suggestions

Survey tools

There is a range of on-line survey tools such as Survey Monkey, Zoomerang, SurveyGizmo, JitsuTech. You will need to check where data is stored for the tool you select and include a line to this effect in your research ethics consent form; for example, if the data is housed in the United States, you should add “This online survey will be hosted on the [name of tool] and data is stored in the USA. Data stored on servers in the USA may be subject to examination by the US government under the USA Patriot Act. While this likelihood is small, I am required to let you know this possible risk.” Individual researchers should double check to ensure they are following any relevant organizational, provincial, national, or other legislation related to freedom of information and privacy protection for data stored on servers outside of Canada.

Group methods

Interviews and some group methods can be conducted through telephone, BlueJeans, Go To Meeting, WebEx, Microsoft Teams, Adobe Connect, Blackboard Collaborate, Zoom, Skype or some other online video- or tele-conference technology that both you and the participants can mutually access. Recordings can be made

of the calls that can be transcribed by the software itself, by the researcher, or by a professional service. *Recordio Pro* (www.Recordiopros.com) is a service that can be used to make a telephone recording. Transcription of audio files is available through www.transcriptheroes.ca or simultaneous machine transcription is available through <http://www.otter.ai>. Again, check where data is stored and include a line to this effect in your consent form if the data is stored in the United States: "This online [method] will be hosted on the [name of tool] and data is stored in the USA. Data stored on servers in the USA may be subject to examination by the US government under the USA Patriot Act. While this likelihood is small, I am required to let you know this possible risk."

Group tools

Online group inquiry activities, such as World Café Method, or 1-2-4-ALL Liberating Structures, have been successfully done using video conferencing technologies that allow for break-out rooms (check the platform you're using to see how many people can join the conference at the same time and whether it allows for break out rooms). Participants can, of course, add comments in the chat, but this flips by very quickly. However, at the end of the session the chat can be selected, in whole or in part, and copied and then pasted into a Word document as data.

There is an excellent set of guidelines for how a virtual world cafe may be run on the World Café Community blog (2020). A virtual whiteboard, such as Google Docs, may be used as a virtual tablecloth simultaneously to the online video conference, allowing participants to take notes or jot down ideas while they are in their breakout rooms. The Google Doc needs to be prepared in advance as a template with the questions of the rounds and spaces to write in for as many small groups as you have break-out rooms. The URL for the Google Doc is then shared with participants via email ahead

of the event (or in the chat during the event) and run simultaneously to the Zoom room. The person tracking the conversation would first find an empty group spot, and in their first note, identify the first names of the individuals in their small group so they can all participate in the same place in the Google Doc.

Ethical considerations

The essential Tri-Council ethical principles of respect for persons and concern for welfare and justice continue to apply to inquiry in an online context (Government of Canada, 2018, Chapter 1, Core Principles). The ease of recording the call on many platforms means video can be captured in addition to audio. This brings advantages for the researcher but raises ethical concerns for the usual anonymity accorded participants in academic inquiry. Although it is certainly possible to only keep the audio track to preserve anonymity of participants, participants may be advised not to turn on their camera if they wish to remain fully anonymous. Participants may also need to give additional consent if the researcher intends to create a video for further distribution.

Institutional Research Ethics reviews should be designed or modified to account for the potential of digital research and engagement methods to be used as an alternate strategy to the in-person methods researchers might have initially designed. For specific guidance on the ethics of digital research please see the Association of Internet Researchers' (2022) Internet Research Ethical Guidelines.

For online group methods, the information letter/informed consent is sent to participants as an email attachment when they first indicate they are interested in participating in the event. Participants need to return the consent document to you (or your third party) before the link for the event is sent to them. This way,

you are not trying to complete the informed consent process during the event.

An anonymous online survey does not normally have an informed consent document to be sent back to the person conducting the research. Instead, the letter of invitation, which may be in the form of an email, may attach information about all the ethical considerations for participation in the anonymous survey. This attachment would also include the link for the actual online survey. The first 'landing' page at the link for the survey would then contain a preamble, containing the key statements of the information letter, and include a statement at the bottom, along the lines of: "I have read this preamble and/or the information letter for this inquiry, and, by pressing the link below, give my informed consent to participate in this online anonymous survey." Immediately below this would be the link to the separate web page where the survey questions start. This is considered an implied informed consent.

Universal Design (National Disability Authority, 2020) features include adding captioning to graphics, creating a transcript of the video session, or a text-only version of the presentation, providing a safe space for students to share their disability needs, educating students about ableist language, and becoming an advocate for greater inclusion of all students in the classroom (Craven, 2020; National Association of the Deaf, 2022).

Reflections

The level of meaningful engagement when using digital research methods during the COVID-19 pandemic has surprised many students and faculty alike. Online research can offer new challenges and considerations that impact the way we conduct our research; however, it also offers new opportunities for innovative methods and connections with people who would otherwise be inaccessible to us. To take advantage of the opportunities while minimizing the

challenges, we must keep learning as we go and always be aware of potential challenges. Digital technologies change frequently, and researchers must adapt. For this reason, the authors of this chapter recommend approaching digital methods for applied inquiry as lifelong learners. Rely on resources such as The Association of Internet Researchers (2022), The World Café (2022) community forum, the SAGE Handbook of Social Media Research Methods (Sloan & Quan-Haase, 2016), The Media Manipulation Casebook (Harvard Kennedy School & Technology and Social Change Project, n.d.), Richard Rogers' book *Doing Digital Methods* (2021) and Zoe Glatt's (2020) digital ethnography reading list. These are just a few of the many great digital research methods resources available, and it is imperative that researchers stay on top of the digital trends that impact their own areas of research expertise. It is true that digital research is qualitatively different from similar research conducted without the aid of digital tools. This does not preclude rich knowledge sharing and a relational, high-quality experience. The pandemic and climate emergency are existential crises that are reshaping how some people view the world and their/our place in it. If digital methods can support a shift to more sustainable research practice where needed (Grogan et al., 2021)—while continuing to be vigilant about issues of equity, justice, access, safety, and privacy—then our work will have been of service.

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18. Using an Interview Matrix as an Action-Oriented Dialogue and Research Method

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Rationale

Educators are often looking for effective and efficient ways to engage students in meaningful dialogue. This desire for meaningful engagement, creative dialogue, and effective use of time also extends to research. How can educators support students in engaged inquiry with self, teams, and systems (Short, 1998)? One effective approach is using an interview matrix. The interview matrix was developed by Harrison (as cited in Sante Plus Research Associates, n.d.) and expanded on by Chartier (2002). Within Royal Roads University, thesis students have used the interview matrix as a method within their action research projects (Boronowski, 2014, Just, 2016; Khattrra, 2011; Leven-Marcon, 2013; Martindale, 2010; Plaizier, 2013; Prinsloo, 2011; G. Smith, 2014; V. Smith, 2004, Wright,

2019). Faculty have also used it within the classroom to enable deeper dialogues as well as offer an experience of a research method. The interview matrix can be used for both education and research. It is “one of the more powerful ways to get the whole group engaged in dialogue, with equal airtime, focus and consensus building as the main elements” (Chartier, 2002, p. 70).

Using an interview matrix in class enables students to (a) practice and improve active listening, interviewing, and cooperative learning skills; (b) demonstrate reflective practice skills by communicating reflections, opinions, and thoughts; (c) demonstrate critical thinking by comparing and contrasting key themes related to collective conversations; and (d) co-construct a collective understanding that identifies key course concepts and applications. They can carry this learning into their research projects and tailor their objectives and implementation accordingly.

Overview: Interview Matrix Preparation

The following steps may be used to facilitate an interview matrix:

1. Decide on a topic to explore (e.g., leadership, learning, a specific management area). See Appendix A for sample question sets.
2. Develop four questions that are relevant to the topic. Each student will be responsible for asking one of the four questions to other students and collecting those responses. They will also be interviewed on the other three questions.
3. Using the Interview Results Templates (See Appendix B), insert Question 1 in Template 1, the next question in Template 2, and so forth.
4. Anticipate the approximate number of participants who will attend the session, divide the number by four, and print off the corresponding number of handouts. For example, if 40 people

will be attending, 10 copies of each template will be needed (10 copies of each of Templates 1, 2, 3, and 4). If participant numbers do not evenly divide by 4, then some students can be partnered to interview together.

5. Bring pens for the participants, a timer, and a chime.
6. To set up the room, place flipchart paper at four stations, where participants will gather in four equally sized groups.

An interview matrix is typically 60–90 minutes long. For example, at the end of the first week of a face-to-face in-class or online intensive, the students attend a scheduled session titled: “Exploring Your Leadership and Learning So Far,” in which we facilitate an experiential interview matrix. We have prepared for this activity by defining a relevant set of questions and printing off the *Interview Results Templates* (see Appendix B). We use the following questions:

1. What has been your best leadership experience this week?
2. What has been the most powerful insight or learning that you have experienced?
3. What course reading has been most valuable to your leadership development?
4. What might be the most courageous act of leadership you take this upcoming week as a result of your learning?

This question set was inspired by Kolb’s (1984) adult experiential learning model. The step-by-step facilitation instructions are captured in Table 1.

Table 1

Experiential Interview Matrix

Step	Activity
1	Distribute your <i>Interview Results Templates</i> (either randomly or by inviting each participant to take one). We ask participants to organize themselves into four equal sized groups first and invite partnering when numbers are not equal, and then hand out the <i>Interview Results Templates</i> .
2	Inform participants there are four groups and each group will have a different question.
3	Explain to the participants they are responsible for collecting data for their question during paired interviews that will be occurring with different participants in the room, so they are to take notes of each interview.
4	Let participants know that they will be going through a series of interviewing rounds in which they will either be interviewer or interviewee for the duration of the round on the topic being explored. (The rounds process is included in Appendix B, which includes the <i>Interview Results Templates</i> . Each template has a different interviewer–interviewee order). Review the structure of Round 1 with the participants so that participants understand what happens in their first conversation. For example, in Round 1, individual members of Group 1 will each identify an individual from Group 2 to interview. Similarly, a member of Group 3 will identify an individual from Group 4 to interview.
5	Remind the interviewers for that round they are seeking to objectively obtain the information from each person rather than getting into a conversation. They are welcome to ask follow-up or probing questions related to their topic.
6	When switching rounds, it may be helpful for the facilitator to request that participants hold up the same number of fingers that corresponds with the number they have been assigned on their interview results template so the interviewers who are looking for them during the switch can identify them.
7	Rounds can be 3–5 minutes long. Before starting the timer, the facilitator can inform participants that the chimes will be rung to signify the next round.
8	To keep everyone on track, encourage people to conclude their interviews and move into the next round each time the chimes ring. We allowed approximately 30 minutes, which included sharing instructions (5 minutes) and completing the interviews (24 minutes) with each other.
9	Once the interview rounds have been completed, invite participants to assemble in their question groups at a flipchart area. Inform them they have three tasks: (a) discuss and theme what they learned in their interviews, (b) determine an appropriate headline to summarize what they found, and (c) appoint a person to report their data and give their headline.

Step	Activity
10	The facilitator can set the timer for 20 minutes and leave the groups to complete the tasks.
11	At the 15-minute mark, circulate to see if participants have completed theming their data and are beginning to think about their headlines. If not, let them know the deadline is pending and they may want to shift their attention to identifying their headline. If students ask for more guidance on an appropriate headline, some criteria could include the headline is a reminder of the key themes that were identified and that it is memorable.
12	When the 20 minutes are up, invite each group to report out by restating the question that they were provided with, sharing the key themes identified, and concluding with the headline they developed.
13	After each group has reported out, debrief the activity with the larger group.

Interview Matrix Debrief

We typically take 30 minutes to debrief the activity. Borton (1970) developed a process model of education based on three simple questions, which Rolfe (2014) focused into a framework for reflective practice (p. 489). Despite being simple to implement, the framework is comprehensive in that it provides a complete cycle of recalling what happened, analyzing it, and then generating future possibilities, choices, or options. In this way, reflection does not get stuck in self-absorbed navel gazing or negatives of a given experience. It enables the debrief with three easily remembered questions from Borton (1970): What? So What? Now What? See Table 2 for an example. As a result, students can gain awareness and question what, why, and how things were done and consider future choices.

Table 2
Reflective Practice Questions (based on Borton's (1970) questions)

Reflective Practice Element	Reflective Practice Question
The What? Question prompts students to describe what happened.	What did we do?
The So What? Question requires students to analyze what happened.	Why is this important?
The What Now? Question offers students the opportunity to consider what they will do as a result.	How might we use this process to further our learning?

Appendix C includes sample debrief questions related to identified learning outcomes. Depending on the time allotted for the debrief, the facilitator can select the questions that are most appropriate for the lessons they wish to emphasize, or develop alternative debrief questions. For example, depending on the questions, the facilitator can go deeper into how people feel or their reactions to course content, experiences or ideas. As our course content is related to leadership, we also discuss how this process can foster collaborative leadership, support collaborative learning, and explore what resonated with people and what they plan to do as a result.

Students have told us how effective the interview matrix was for making connections with different people and getting different perspectives over a short period of time. This leads to a shared understanding of content covered in the class as well as deepened relationships. This activity provides students with an opportunity to synthesize their learning collectively and individually, which informs subsequent assignments.

Using the Interview Matrix as a Research Method

When our students return to campus for their second-year residency, we conduct another interview matrix structured with a different question set. In the debrief, we further discuss how it could be used as an effective research method (see O'Sullivan et

al., 2015). In our program, students over the years have applied the interview matrix to their research. For example, Leven-Marcon's (2013) inquiry focused on developing a sustainable environment with full volunteer engagement at a youth-serving agency by using an interview matrix along with a conversation café. Likewise, Wright (2019), who conducted research with an animal welfare organization, used an interview matrix as his first method and followed it with design thinking (p. 46). Finally, for her inquiry into enhancing shared accountability with regards to discharge planning at a local hospital, Just (2016) started with a qualitative survey and followed it with an interview matrix. Considering the issue of "power over," Leven-Marcon had none, being a volunteer in the organization; however, Wright (2019), who sought "to have the whole system in the room" (p. 47), noted, by having participants interviewing each other, the risk of coercion or "power over" was minimized because, although he was regional manager of the organization under study and facilitating the process, he was not asking the questions, which enabled participants to talk freely among themselves (p. 51). On the other hand, Just (2016), as clinical services manager, employed a third party for recruitment and facilitation. These three examples offer a range of examples of how the interview matrix can be implemented and sequenced with other methods as well as how issues of power and coercion may be mitigated. They also show the usefulness of this method across various topics and fields.

Conclusion

The interview matrix enables inquiry, collaboration, and inclusive engagement (O'Sullivan et al., 2015). As a peer-facilitated process, it enables a balance of information, opinions, or ideas on specific issues to be consolidated (Chartier, 2002, p. 70). Individuals ask and respond to questions, come together in small groups to identify

themes, and then discuss in the whole group. In addition to the opportunity to view the responses and themes of others, this method creates ownership and buy-in from the participants. This encourages participants to become invested: as they engage in the inquiry it in turn becomes an intervention enabling change and furthering action research (O'Sullivan et al., 2015).

A key lesson learned is this approach results in high engagement. Recognizing the efficiency of data collection and experiencing its effectiveness in their first year, several students in their second year have gone on to use the interview matrix as a research method.

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Appendix A: Sample Question Sets for Educators

Human Resources:

Below is a sample question set if you are using the Interview Matrix to explore human resources opportunities and challenges:

1. Describe an HR experience you had that captures the excitement you have for this topic?
2. What reflections do you wish to share on your current understanding of Strategic Human Resources?
3. What strategic human resources literature and/or theory has piqued your interest and why?
4. What actions can you take starting now in your strategic human resources practice?

Organizational Behavior:

If you were exploring the role of individual, team and organizations as elements of Organizational Behavior, a sample question set could include:

1. Describe a team experience that you consider a highlight in your group work?
2. What reflections do you have on what makes for a great team experience?
3. Based on your reading of the three domains of Organizational Behavior (OB), how do they work together to achieve team and organization purpose?
4. What action will you introduce the next time you work on a group assignment?

Strategy:

If you were exploring strategy, below is a sample question set:

1. Describe a time where you experienced a shift in strategy?
2. What are your reflections about the external drivers that are requiring a review or change in strategy?
3. Based on the reading to date, what are the key elements of a good strategy?
4. What is one future action you will take when your organization chooses to implement a new strategy within the organization?

Appendix B: Interview Results Templates

Interview Results

Your number ____1____

Your question: Describe the characteristics of the successful change leader?

(1-2), (4-1), (1-3), (3-1), (1-4), (2-1)

Rounds	Interviewer	Interviewee
Round 1	(1-2)	
Round 2		(4-1)
Round 3	(1-3)	
Round 4		(3-1)
Round 5	(1-4)	
Round 6		(2-1)

Remember

- You always ask the same question
- You are listening only and responsible for getting the other person’s idea recorded

First Interview

Second Interview

Third Interview

Interview Results

Your number ____2____
Your question: What are the biggest organizational barriers to successful change?
(1-2), (2-3), (2-4), (4-2), (3-2), (2-1)

Rounds	Interviewer	Interviewee
Round 1		(1-2)
Round 2	(2-3)	
Round 3	(2-4)	
Round 4		(4-2)
Round 5		(3-2)
Round 6	(2-1)	

Remember

- You always ask the same question
- You are listening only and responsible for getting the other person’s idea recorded

First Interview

Second Interview

Third Interview

Interview Results

Your number ___3___

Your question: What one story can you share of a well navigated change?

(3-4), (2-3), (1-3), (3-1), (3-2), (4-3)

Rounds	Interviewer	Interviewee
Round 1	(3-4)	
Round 2		(2-3)
Round 3		(1-3)
Round 4	(3-1)	
Round 5	(3-2)	
Round 6		(4-3)

Remember

- You always ask the same question
- You are listening only and responsible for getting the other person’s idea recorded

First Interview

Second Interview

Third Interview

Interview Results

Your number ____4____

Your question: Describe a time or moment that you were involved in a successful project? What contributed to the success of that experience?

(3-4), (4-1), (2-4), (4-2), (1-4), (4-3)

Rounds	Interviewer	Interviewee
Round 1		(3-4)
Round 2	(4-1)	
Round 3		(2-4)
Round 4	(4-2)	
Round 5		(1-4)
Round 6	(4-3)	

Remember

- You always ask the same question
- You are listening only and responsible for getting the other person's idea recorded

First Interview

Second Interview

Third Interview

Appendix C: Sample Debrief Questions Related to Identified Learning Outcomes

1. a) Practice and improve active listening, interviewing, and cooperative learning skills;
 - What did you learn about actively listening to your colleagues?
 - What was your experience of conducting interviews?
 - What was the value for you in doing this with the whole group?
 - How has this developed your ideas and/or skills?
1. b) Demonstrate reflective practice skills by communicating reflections, opinions and thoughts;
 - What did you learn about yourself as you participated in this activity?
 - What did you experience as you interviewed others?
 - What was the key advantage you experienced as you participated in this activity?
1. c) Demonstrate critical thinking by comparing and contrasting key themes related to collective conversations
 - In identifying the key themes, what process did you use?
 - Are there alternative processes that you thought of that were not used?
 - Was there data that wasn't included as you themed the information?
 - What criteria spoken or unspoken determined what was included and what was excluded?
1. d) Co-construct a collective understanding that identifies key

course concepts and applications.

- What did you learn about creating a shared understanding?
- What further opportunities exist to use this activity?

Is there anything else that needs to be said to sum up this course module?

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19. Mini Field Research Pilot Study: Authentic Assessment

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Rationale

The mini field research pilot study offers graduate students in a research methodology course at Royal Roads University's MA program in Tourism Management (IHMN 550) the opportunity to practice a research method of their choice. Typically, the students select a research method they are considering for their major research project or thesis research. The mini field research pilot study is the final assignment and functions as a capstone assignment for the course. This assignment is suitable as a capstone assignment for students who have already completed a proposal which includes a preliminary literature review, identification of a research question, and potential research methodology and methods.

This assignment contributes to student learning by taking the student from an understanding related to 'learning about' to practice based application and 'learning to do.' The intent of this assignment is to support the development of 1) planning skills for actual field research; 2) practice in conducting a research method; 3) basic practice using an analytical technique; and 4) the development of reflective capacity as a researcher.

The development of this assessment was informed by Mueller's (2005) work on authentic assessment and the application of knowledge and skills to perform real-world tasks. The assessment takes the student into the activities of a researcher: specifically, the planning and thinking that occurs prior to using a research method. The assessment also takes the students through the practice of the research method and the reflection on this practice with others. Bridging the knowledge-to-practice gap, this authentic assessment also encourages self-awareness, decision making, and reflection (Boud, 2007). Furthermore, the mini field research pilot study builds the student's capacity to receive and integrate feedback, adapt, and continuously improve after the course ends (Boud, 2000).

The final step of this mini field research pilot study includes the opportunity for peer learning. Students each share a voice-over presentation in small pods of three or four students. The opportunity to find out what two other researchers learned in their mini field research pilot study enriches the learning possibilities in this assignment. The students' learning is expanded outside their own pilot study to the practice-based learning of two other peers.

The learning outcomes associated with this assessment are:

1. Effectively uses research methodologies, data sources, concepts, and theories to investigate, evaluate, and analyze findings that inform planning, decision-making, and actions.
2. Demonstrates integrity and ethical behaviour when collaborating, synthesizing findings, problem solving, conducting research, and reporting findings or recommendations.
3. Effectively gathers, analyzes, synthesizes, prepares, and presents written materials, accurately utilizing the American Psychology Association (APA) style.

Overview

The mini field research pilot study creates authentic engagement as learners practice a research method of their choice. All learners are asked to develop an invitation to participate in the study that includes a participation information sheet and consent form. Through application, the steps for ethical research practice are understood more deeply. The assignment is a confidence builder as learners connect more deeply with their proposed study and build their skills as researchers. A course ethics review is in place for this assignment. Instructors who wish to adopt the mini field research pilot study are advised to complete a course ethical review at their institution for this assignment before proceeding.

The intent of this assignment is to provide students with an appreciation and understanding of actual field research and practice in conducting research. Furthermore, the assignment encourages students to consider and practice reflexivity as a researcher. In advance of starting this assignment, invite students to watch this short video from Sage Publications on Pilot Studies. In this video Eva Mikuska (2018) reflects on piloting ideas and research methods and she shares a useful overview of what she learned from her own pilot study. She raises some useful considerations that students may wish to think about as they reflect on the purpose and practice of a mini field research pilot study.

Step 1: Select a Research Method

Ask students to select a research method and carry out a mini-research pilot project for that research method. If your students have written a research proposal, advise them to consider selecting a research method that was included in their proposal. If students have not completed this step, I recommend setting aside time to

review different research method choices. Be sure to provide students with the research consent form (Appendix 1), and the introductory letter (see Appendix 2). These supporting documents are customized by the student and the instructor.

The research method could be a pilot design for a survey shared with a small number of respondents. Alternatively, the method could be practicing a semi-structured interview design with one or two participants or some form of observation. Students might also like to try a creative method such as visual explorer, or a collaborative group method.

Step 2: Research, Plan, and Pilot a Research Method

It will be important for students to undertake some research on their chosen research method and to follow the key steps and practices recommended for the method. If you use a particular course text, direct the students to refer to the textbook or associated readings. Ask students to aim to be systematic in their practice and to think ahead to plan out their approach. Advise students to make notes on their learning as they pilot their research method. Were there any surprises? What worked and what did not work as anticipated?

Step 3: Voice-Over Presentation

Explain that on completion of the pilot study students will share their field research project with their peers and instructor through a short voice over presentation (maximum 12 minutes). Advise the students to share: 1) the research method they chose and why, 2) their experience with the process, 3) the data they collected, and

4) their reflection on what was learned from practicing a research method.

Ask students to consider and explain how they would analyze the data and if any adjustments are needed to their data collection method. Encourage your students to be reflective and share what they learned openly (e.g. what worked, what did not work, what you would do differently next time). Direct students to refer to the assignment rubric for further details and prompts (Appendix 3).

In this final step the students create a voice-over presentation to share with small pods of three or four students. Invite your students to share their thoughts on the value of peer learning. Emphasize the opportunity to learn and share with others, and the benefits of reciprocity.

Student feedback on this assignment is resoundingly positive. Students share that they enjoy the freedom to pursue their own research interests in a hands-on way, and that through practice they can situate themselves as the researcher.

Reflection

The following common distinguishing features of authentic assessment held some congruence to the mini field research pilot project assignment.

1. Aligned: Authentic assessment aligns with the course instruction and learning approaches; the choices are intentional in these areas (Lindstrom, Taylor, & Weleschuck, 2017). The mini-field research pilot project offered students the opportunity to apply their learning in the course to pilot a research method of their own choice. With support from their instructor, each student made their own choices. This decision making mirrored the decisions they will make as principal researchers in their own major research project, and this is a

confidence builder. This assessment also builds on the previous 'draft research assignment' that precedes the mini field research pilot project.

2. Integrated: Authentic assessment provides the space for students to receive and integrate feedback; to reflect and continuously improve after the course ends (Boud, 2000). The voice-over presentation delivered to a small group of fellow students offers the possibility for integration of feedback and questions from peers. This step can be further supported by including a peer feedback forum immediately after the presentations.
3. Supportive: This assessment is learner-centred and creates linkages between previous assignments and future courses (e.g., a major research project or thesis). By providing choice and student discretion in the final assessment, within a framework of clear expectations (Appendix 3) the students can drive their own learning bus and identify their own stops, starts, speed and progression.
4. Contextual: This assignment takes the students outside the course into the real world of research practice. The students plan and practice a research method that relates directly to their draft research proposal. The two assignments work together to support active engagement in research in a real-world professional context. The students think, plan, apply and reflect – all important aspects of the research process.

I have used this assessment in several research methodology courses over the past four years, and each time I reflect, refine, and improve. In the most recent iteration, I placed more emphasis on identifying and practicing an analytical process. This has rounded out the learning available in this assessment. Students now identify and apply an analytical technique to a small data set thus gaining applied experience with data analysis.

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Appendix 1: Sample Consent Form

RESEARCH CONSENT FORM

Mini Field Pilot Research Project - IHMN 550 (Research Methodology)

My name is [your name here] and I am a graduate student in a Master of Arts Program in Tourism Management at Royal Roads University. I am currently taking a course in research methodology, and the final assignment is a *Mini Field Research Pilot Study*. The intent of this assignment is to practice a research method. The

research method I have chosen to practice is [your research method here].

My credentials with Royal Roads University can be established by contacting my course instructor, [name and contact information here]. The Research Ethics Board can be contacted via [name and contact information here].

Thank you for your interest in supporting the development of researchers at [institution name here].

This document constitutes an agreement to participate in my *Mini Field Pilot Research Project*. If you choose to participate, your anonymity will be protected, and no names or distinguishing data will be associated with the data collected.

On completion of this project I will submit an assignment to my course instructor. The assignment will not be publicly accessible.

If you do choose to participate in this project you are free to withdraw at any time without prejudice.

By signing this letter, you give free and informed consent to be included in this project as outlined above.

Name: (Please Print): __

Signed: __

Date: __

Appendix 2: Sample introduction letter

[date here]

To whom it may concern:

Re: Mini Field Research Pilot Study

At Royal Roads University we encourage our students to learn through practice and experience in real world settings.

The student: [your name here] is currently taking a course in research methodology (Research Methodology, IHMN 550). The final assignment is a *Mini Field Research Pilot Study*. The intent of this assignment is to provide the student with an opportunity to pilot (practice) a research method. For example, this could be to pilot a design for a survey shared with a small number of people, or to facilitate a small focus group.

If you choose to participate, your anonymity will be protected, and no names or distinguishing data will be associated with the data collected. On completion of the pilot study the student will destroy the data collected.

Thank you for considering participation in a mini field research pilot study. If you have any questions, please do not hesitate to discuss them directly with the student, or with me, the instructor at the contact listed below.

Sincere regards,

[name and contact information here].

Appendix 3: Sample Rubric

Mini Field Pilot Research Study

The intent of this assignment is to provide you with 1) an **appreciation and understanding of actual field research; and 2) practice in conducting research**. Furthermore, the assignment encourages you to consider **3) your reflective capacity as a researcher**.

Rubric

1. Analysis and clarity /10

Share the choice of research method by providing a coherent explanation of how the research method relates to the research topic and research questions, research design, and other aspects of the study (feasibility, ethics, participant sample etc.).

2. Research /10

Situate the research method in the literature related to your research method. For example, if you used a survey, what data and processes did you refer to (secondary sources) before you decided on the survey design and distribution? What sources did you use to help design your survey?

3. Preparation and planning /20

Share the planning and preparation completed in advance of conducting the research – how did you prepare and plan? What skills did you need to think about? How did you introduce the study to the research participant etc.? If you were to scale this up with more participants, what would you need to do? Provide our preparation documents if relevant (for example, interview schedule, participant information sheet, field notes, or consent form).

4. Practice a research method /20

Explain what you did, and how it went. Review the data you collected and comment on it. Did your practice go as you expected? How did you record your data? Did you count or interpret?

5. Identify an analytical strategy and practice /10

Select an analytical strategy and complete some initial data analysis.

What analytical strategy did you choose and why?

6. Reflect on learning /20

Reflect on and share what you learned from the pilot. This assessment promotes learning through practice. What did you learn about yourself, the method, the research topic?

7. Presentation, Composition, APA /10

Consider your audience: your instructor and your fellow researchers. Create the presentation for them and think about their interests and questions. Present professionally: visual, written, spoken etc.

The learning outcomes associated with this assessment are:

1.2: Effectively uses research methodologies, data sources, concepts and theories to investigate, evaluate, and analyze findings that inform planning, decision-making and actions.

1.4: Demonstrates integrity and ethical behaviour when collaborating, synthesizing findings, problem solving, conducting research and reporting findings or recommendations.

3.1: Effectively gathers, analyzes, synthesizes, prepares and presents written materials, accurately utilizing the APA reference method.

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Rebecca Wilson-Mah (EdD) is associate professor in the School of Tourism and Hospitality Management and program head for the MA in Tourism Management. Drawing on her education and personal and professional experience, she strives to create authentic and participatory approaches to learning and problem solving. Rebecca is an award-winning case writer and reviewer and associate editor for tourism and hospitality cases for The

International Journal of Instructional Cases. She researches and writes cases that convey real life; factual, organizational problems for students to analyze and then aim to resolve. Rebecca's research interests include informal learning in organizations, and faculty communities of practice in higher education.

20. Using Social Media to Apply Research Skills in Real-World Contexts

TYLER NAGEL AND CHASETEN REMILLARD

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“You know my methods. Apply them...” — Sherlock Holmes,
from Arthur Conan Doyle’s *The Sign of the Four*

Students need to learn research methods, but often these methods are presented in the context of academia only. Application of research skills in solving real-world problems can be one of the most important professional skills a student can learn.

In our undergraduate social media course in the Bachelor of Arts in Professional Communication at Royal Roads University, students are required to research, compile, and contextualize best practices for social media strategy and production using only sources found publicly on the internet. Students learn to critically evaluate a variety of non-scholarly “alternative” sources of research, including blogs, social media, and corporate sites. They then interpret these sources for professional contexts, mirroring the work they might perform as practicing social media professionals.

Rationale

The internet has become a default space for academics and lay audiences to begin research. Despite access to traditional scholarly sources through institutional libraries, the first places many researchers visit when researching topics for assignments are the web and social media. Conducting effective internet and social media searches and discerning reputable sources are important research skills for undergraduates (Poore, 2014).

Discernment is particularly important in an environment outside the borders of the traditional university library. In a library (physical or online), a student is less likely to encounter unauthoritative or maliciously misleading material. Indeed, librarians are on the front lines in the fight against misinformation (Sullivan, 2019). But as students research independently on the web or on social media, material may come from sources that mistakenly publish incorrect material (misinformation), or seek to intentionally mislead the audience (disinformation) (Jack, 2017; Leeder, 2019).

For some, an expedient solution might be to direct undergraduates to university libraries as their primary source of information. In fast-moving technical fields, however, scholarly articles may lag mainstream, web-based resources by months or years (Brock, 2019) and social media is becoming an important part of the academic research workflow (Greenhow & Gleason, 2014; Rowlands et al., 2011).

Two frameworks inform our solution to these problems: a scholarship model by Boyer (1990) and a communication model by Berlo (1960). In answer to previously narrow views of research, Ernest Boyer (1990) proposed a four-dimensional model for scholarship: discovery, integration, application, and teaching. These are appropriate descriptors of various types of scholarship that our students (and graduates) must apply in their research activities. Especially in applied and technical domains, students must learn to search for, evaluate, and discern the authority and accuracy of non-

scholarly sources on the internet: Boyer's *discovery*. As graduates transition from student to professional, they must know how to integrate newly discovered information with their previous learning: Boyer's *integration*; applying the synthesis to solve real-world problems: Boyer's *application*. Boyer's *teaching* category stands apart and will be discussed at the end of this chapter.

Boyer's four-dimensional model for scholarship also has strong links to a communication-specific framework: Berlo's (1960) sender-message-channel-receiver model of linear communication (SMCR). Berlo describes a process through which information is communicated, starting with information gathering by the *sender*, then information translation and synthesis to create the *message*, and information broadcast through a *channel*, where it eventually reaches the *receiver* (1960). Boyer's *discovery* is parallel to Berlo's *sender*; Boyer's *integration* parallels Berlo's *message*; and Boyer's *application* parallels Berlo's *channel* and *receiver*. Our learning activity applies Boyer's and Berlo's frameworks to a student research assignment.

In the realm of our course, Advanced Digital Communication, where students form social media strategy and produce social media content, three specific challenges emerge as we seek to simultaneously equip students with professional skills in social media and develop their professional research acumen.

The first challenge is discernment. In the discipline of social media content creation, the chance of encountering misinformation or disinformation is magnified because of a preponderance of bad actors keen to provide dubious social media management services to unsuspecting or naïve organizations and individuals. Exacerbating matters is the nature of social media as a distributed medium, where "flat" information may flow not from a handful of accredited and authoritative sources, but an algorithmically-moderated ecosystem of diverse views composed by a wide variety of contributors (Gayo-Avello, 2015).

A second challenge is that graduates will cease to have access to institutional libraries upon graduation. Although open resources

exist in the panoply of scholarly writing, a study by Piwowar et al. (2018) found more than half of scholarly literature is only accessible through purchase or subscription. To be effective professionals in fast-moving fields, students must be equipped with skills needed to find information online, from non-scholarly sources.

A final challenge lies in information ownership and attribution. Just as it is expected in academia, it is essential for professionals in non-scholarly settings to acknowledge and credit the sources of their interaction. Students, too, must learn this. This need is further magnified in social media environments, which are notoriously (and correctly) sensitive to members that “steal” information from others (Bailey & Trudy, 2018).

We have attempted to address each of these challenges by implementing an assignment that simultaneously develops search and discernment skills through praxis. Students are asked to find authoritative non-scholarly literature online, then evaluate, adapt, and summarize it for use in a particular industry sector to make useful social media posts (crediting the original source) that contribute to the professional discourse.

Overview

In our activity, students are first primed with internet search acumen. They learn about the various types of non-scholarly information that is available on the internet, including blogs, videos (from YouTube and other sources), and “pure” social media posts from social media sources such as Facebook, Instagram, Reddit, and Twitter. Critical thinking is encouraged, using frameworks such as Potter’s cognitive model of media literacy (Potter, 2004) and the Stony Brook IMVAIN model for news media literacy (Fleming, 2014; Stony Brook Center for News Literacy, n.d.). The Stony Brook model prompts students to consider the following dimensions/points:

1. **Independent** sources are better than self-interested sources.
2. **Multiple** sources are better than single sources.
3. **Verified** sources (citing evidence) are better than sources who assert.
4. **Authoritative / Informed** sources are better than uninformed sources.
5. **Named** sources are better than unnamed sources.

In the learning activity, which runs for the duration of the semester, students are placed in teams of three or four, which form notional communications consultancies. Each team is assigned a sector of general industry to focus on. For example, a team might be assigned to be a communications consultancy focusing on serving not-for-profit organizations or small retail businesses.

Teams participate in a branding exercise for their notional consultancies, including formulating a *vision, values, mission, community, and contribution* brief. These briefs ensure that students have a firm idea of the characteristics of their audience, and how best to address their audience's needs. They complete the setup by creating social media accounts for their communications consultancies (currently Twitter and Instagram, but the activity can be adapted for posting on nearly any social media platform).

Students are then provided with a list of topics or categories about which they must make posts. Over the 10-week semester, student teams must make 48 social media posts, divided between two social media platforms. Examples of categories for which students must make posts are presented below:

- Hashtags: Find two different pieces of content on how to better research or use hashtags, on any platform. Post a link to the content, follow the creator on Twitter or Instagram and mention the creator in the tweet or post.
- Broadcast or engage: Find and post two pieces of content that discuss the difference between using social media as a tool to broadcast information versus a tool to engage with audiences.

Post a link to the content, follow the creator on Twitter or Instagram and mention the creator in the tweet or post.

- New platform: Find an article or blog post on a “new” social media platform, (introduced within the last two years) that discusses the applicability of that new platform to public relations or professional communication.

When students find appropriate sources to fulfill these categories, they create social media posts to interpret the information for the specific sector that their communications consultancy is targeting. These posts must be spaced out at the pace of no more than one per day, mirroring professional practice of creating a steady stream of social media posts, instead of an “information tsunami” followed by a drought. The source must be acknowledged and linked. This translational activity demonstrates an understanding of the source material, comprehension of the interests of a sector targeted by the student teams, and a contextualization skill essential for communications professionals.

Students submit a social media debrief for evaluation twice during the course. The debrief document (a Microsoft Word template) reports each social media post made by the team, the source of the information, and statistics on any real-world engagement generated (likes, retweets, etc.). Teams receive feedback on the quality of the sources, their ability to translate it for their targeted sector, as well as the praxis of the social media posting techniques.

There is an evolution in the social media posts made by teams throughout the course. Because of the relentless pacing requirements, students are forced to become efficient with their time. The beginning posts reveal the greatest time spent finding appropriate sources and interpreting them. As the semester evolves, we observe an increase in post quality as students develop research skills and have more time to devote to the development of the actual social media presentation, including the graphics associated with the posts.

Teaching evaluations and informal feedback received directly

from students suggest they enjoy this activity and learn a great deal from it. Combining research acumen with active, real-world learning appeals to students in a program with a professionalization focus.

Reflection

Revisiting the Boyer (1990) and Berlo (1960) models reveals that by the end of the exercise, students have performed activities at many levels. First, they discover and vet information (Boyer's *discovery* and Berlo's *sender*). They then integrate, apply, and adapt the information to a specific purpose (Boyer's *integration* and Berlo's *message*) and then broadcast this information to their audience (Boyer's *application* and Berlo's *channel* and *receiver*). Students simultaneously practice scholarship (à la Boyer) while they practice professional communication (à la Berlo).

Although the student feedback and the predictable evolution in the quality of the posts shows that the exercise is effective in achieving the desired learning outcomes, we did make some changes and continue to improve the course and activity. Initially, the marking load was onerous, with instructors evaluating hundreds of individual social media posts over the course of the semester. This prompted a transition from individual work to a team-based assignment.

The team-based approach has yielded benefits beyond marking load reduction. Distributing the workload across a team has given students more time to focus on branding their consultancies; better defining their mission, vision, and values; and developing a communication strategy suited to their sector. An additional benefit is the teamwork skills students develop, mirroring a professional work environment. Transitioning to a team-based assignment has also allowed enough “space” to expand from a single social media platform to two platforms.

A final opportunity lies in moving the student social media posts from a linear model of communication to a transactional one such as that proposed by Barnlund (1970). Students could actively engage with real-world audience members of their target sector on social media. Beyond the scope of the current assignment, such an addition would replicate an essential task of the social media professional: authentic engagement with the audience. Receiving feedback from a real-world audience could provide students authentic opportunities to gauge the impact of their research activities. In fact, the reflection resulting from such audience feedback has the potential to address learning in the fourth category in Boyer's model of scholarship: the scholarship of teaching.

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Tyler Nagel is an Associate Faculty member in the School of Communication and Culture at RRU, a full-time journalism instructor at SAIT in Calgary, and a PhD student at the University of Groningen. A communications scholar with a focus on journalism, Tyler teaches a variety of courses ranging from technical journalistic skills, to social media techniques, online storytelling and portfolio development, where he strives to blend traditional journalistic practice into contemporary online media. Nagel strongly believes in student-focused learning and employs teaching techniques that emphasize mentorship and collaboration over traditional lecture. As well as his teaching duties, Nagel has an active research program that includes rural community media, social media, fake news, misinformation and disinformation.

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Chaseten Remillard is an Associate Professor in the School of Communication and Culture at RRU and communications scholar interested in questions of social and environmental justice. With expertise in visual and professional communications, Remillard's research includes topics as varied as homelessness, Canadian artist Bill Reid, hockey art, the Alberta Oil Sands, and shark films. Despite this eclecticism, he consistently interrogates how images gain and

transmit meaning and how these meanings serve to reinforce particular “ways of seeing” ourselves and the world around us.

2I. Journalistic Field Study on the Disappearing Dan'jia Culture of Hainan Island in China

QING WANG AND DOUG HAMILTON

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Rationale

This field trip activity featured a trip to a rural area outside of a large Chinese city to study the ways of living of a local Indigenous culture, the Dan'jia culture. Its purpose was to help graduate and undergraduate journalism students, via their voluntary participation in the Summer Countryside Practice program, learn about the applications of the key principles and methods of cultural anthropological field work to their journalism practice, especially those aspects relevant to conducting interviews for current and contemporary news stories. Another purpose was to increase awareness of the need for government-sponsored preservation efforts of the Indigenous culture through the preparation and publication of the students' news reports and video representations.

The students were studying journalism at Hainan Normal University in Haikou, China.

This hands-on activity was intended to help students develop a more open-minded, inquiry-oriented approach to field-based interviewing to counteract any unconscious biases formed in doing the preliminary research and preparatory information gathering that may lead to faulty assumptions, skewed evidence gathering, and manipulated conclusions. One of the challenges I¹ faced was to help students become more aware of their own assumptions and to nudge them to construct a semi-structured interview design that followed a much more balanced data collection and analysis approach during the news interviewing, thus making their news production more impartial and less biased. Helping students become more aware of their own assumptions and biases is an important facet of learning to become a skilled researcher in the social sciences (Thomas, 2013).

The learning outcomes associated with the field-based research focused on helping students apply the cultural anthropological approach to field study, master more unbiased data gathering and analysis skills, and explore and present the current living conditions of the specific marginalized Indigenous cultures in an authentic and creative way. The tasks I provided to students in support of these learning outcomes differed by the level of study. The group of graduate students was required to make an in-depth news report and the group of undergraduate students was required to produce a mini television documentary.

The work of journalists and anthropologists can often be quite similar. Both anthropologists and reporters can view themselves as “observers of the human condition” and representatives of both professions often immerse themselves into the field setting as observers and interpreters using proven methods of data collection such as notebooks, tape recorders and cameras (Grindal and

1. The first author was the instructor for this activity.

Rhodes, 1987, p.4). According to Carvalho and Evangelista (2018), “Literary journalists and anthropologists conduct their fieldwork with similar tools and goals. Both use listening and observation to establish contact with the Other—the group being studied—and therefore identify, understand, and interpret daily interactions and scenes” (p. 798).

Compared with anthropology, however, journalism has some limitations. As a reporter commented in a 1985 seminar funded by the Florida Endowment for the Humanities, “An anthropologist is a journalist with a two-year deadline.” (Grindal and Rhodes, 1987, p.11). However, other more profound differences between the two fields exist. For example, journalistic reporters usually work out the story details that are only relevant to a particular event or person. It is generally limited to an explanation and reporting of who did what, when, where and sometimes why. As a result of its limited and restrained perspective, journalism has been also often blamed as “fragmentary” and “incomplete” (Grindal and Rhodes, 1987) and suffering from a lack of in-depth and contextual interpretation, while anthropology is often dedicated to taking a more holistic, comparative, and pluralistic stance (Herzfeld, 2001). For this reason, journalism students can learn the methodology from anthropology to make their news production more complete, well-rounded, and less biased while taking into consideration the broader social context associated with the investigative topic.

Engaging in ethnographic research is a distinguishing feature of the anthropologist’s approach to understanding culture and its dynamics:

Ethnographers immerse themselves in a society to collect descriptive data via fieldwork concerning the culture of its member from the perspective of the meanings members of that society attach to their social world, and render the collected data intelligible and significant to fellow academics and other readers. (Bryman, 2001, p. 1)

Journalism students can learn a lot about fieldwork from anthropologists, especially regarding “questions of interpretation,

representation, subjectivity and intersubjectivity” that are debated amongst ethnographic scholars (Melhuuis, 2002, p. 70).

Currently, field study forms part of the curriculum of university courses from a broad spectrum of sciences including geology, biology, archaeology, and history as well as from various social sciences (Vassala, 2006). Field study provides an opportunity for students to apply previous knowledge to real situations as well as to become familiar with the rigours of applying methods of practical and proven investigation to authentic situations in the field (Wilson, 2011). As such, it is a rich source of authentic learning that connects “what students are taught in school to real-world issues, problems, and applications” and the “learning experiences should mirror the complexities and ambiguities of real life” (Pearce, 2016, p. 1). Journalism is an applied discipline with a strong connection to professional practice. Therefore, field work is one of the crucial and common methods of learning about real issues in society that journalists address. It helps enculturate students into the discipline of study by exposing them to the dispositions, methodologies, complexities, and problem-solving strategies of the professionals that they aspire to become (Lombardi, 2007; Levy and Murnane, 2005; Lave & Wenger, 1991). Furthermore, because fieldwork helps shape the knowledge, skills, and attitudes of aspiring professionals (Rogers 1996, Knapp 2000), it is an effective way to affect and transform the mindsets of journalism students to support more open-minded inquiry and less biased reporting practice.

Overview

The following steps were taken to implement the activity:

1. Participating students conducted online research to obtain related literature and references to news articles.
2. Groups of students performed collective brainstorming to

determine several possible research topics related to Dan'jia culture and to assist in preparing a semi-structured interview protocol.

3. I arranged administrative and ethical approval (with the relevant local government authorities) for the students to conduct the interviews.
4. I contacted potential respondents to arrange interviews in advance.
5. I arranged for the three-hour trip from the city to the host community, including the booking of transportation, catering, accommodation, and acquiring a small first-aid kit. I made adjustments at the last minute to the mode of transportation (from a train to a private vehicle) to permit more flexibility in carrying out the field visits.
6. The students were split into the undergraduate and graduate groups to undertake their respective interview tasks along with the gathering of supporting documentation (i.e. photographic, video, and audio records) during the field visits.
7. I organized a mid-visit meeting during the evening of the first day to assess, review, and debrief the groups' experiences and to modify the plans for the second day's visits and interviews. This enabled interview protocols and questions to be modified to better fit the actual circumstances as they emerged.
8. I held a final meeting at the end of the second day to review the two-day experience and to clarify each group's assignment: (1) an in-depth report for the graduate students and (2) a 3- to 5-minute video for the undergraduate group. The assignments were a tangible and measurable way to assess student performance. Also, they were designed to provide students of each group with a concrete outcome of their activity which helped to maintain a realistic focus for the activity.
9. I reviewed each group's product and provided feedback to assist in the revision process.
10. The two groups published their work on social media such as WeChat and TikTok.

11. The groups' products, as well as a my summary report of the project were provided to the related department of the sponsoring school.

One of my key roles during the visit was to accompany each group on its interviews to observe and record the students' interactions with the community members, respond to their inquiries, provide them with timely support, engage them in ongoing problem-solving and decision making, and to provide an example of how to interview informants on site. At the after-dinner debriefing meeting, my role was to listen to each group's report of their first day's work, encourage students to share their experiences, ask them clarifying questions, formatively assess their achievements, assist them in their problem solving, and help the groups plan the next day's field visit activities.

A key addition to the fieldwork project that I did not use in earlier versions of this activity was the end-of-day debriefing session in the evening of the first day. The groups of students were able to debrief their day's work each evening and improve or adjust their working schedule for the second day. This gave me the opportunity to provide coaching and advice to the students *in situ* before the end of the activity. As well, this addition mirrored the kind of session that teams of journalists might organize to adjust their interview schedules and approaches to better suit the actual context in the field.

Reflection

Many lessons were learned in designing, organizing, and carrying out this activity that help in assessing its value as an active learning strategy and in making subsequent revisions to the activity for future use.

First, the students had rarely experienced an active learning

process in their university studies prior to this field trip so they were not accustomed to taking more ownership over the learning process. They were more accustomed to a more traditional, lecture-based style of learning focused on listening to their professors and passively consuming the required knowledge. This became problematic and uncomfortable for them when they were given more autonomy and freedom to make decisions “on the fly” in this activity. At first, they were waiting for my directions and not taking active steps to manage the activities required in the field setting. From observing students on the field trip, it was obvious that a significant degree of dissonance emerged between the students’ comfort with a more passive approach to learning and the active learning methodology required for success in attaining the desired outcomes. Initially, it was difficult for me to stimulate their interest and confidence in using the active learning model in the field to replace the former passive one. It took time for the students to adjust to a more student-centered rather than teacher-driven learning style, but the resulting observations and reports suggest the students were able to make the necessary psychological and cognitive shifts to a new mode of learning and were excited about the benefits of this new orientation.

The mid-trip debriefing helped students to make the transition to a more active role in the learning process. However, I could have provided more preparatory activities in advance that would support the autonomous learning required in the field setting and could help students make the necessary psychological and cognitive adjustments to a more active learning approach.

This activity is also significant because it points to a need for more institutional support for student field work and the training of faculty members to support this kind of authentic learning experience for students. The financial and resource support from institutions and government are critical to implement this kind of field work (Academica Group, 2015; Cooper et al. 2010; Higher Education Quality Council of Ontario, 2016). Currently in China, however, the institutional and governmental support infrastructure

for these kinds of field-based learning experiences is quite immature and undeveloped (Yang et al., 2016). There are no full-time tutors for guiding student practice or an institutional office to manage student off-site learning activities. Thus, the teacher must be prepared to shoulder all the responsibilities of organizing, coordinating, and carrying out the required field work.

Furthermore, from a logistical perspective, it can be difficult to obtain the proper permissions to engage in these kinds of activities without considerable advanced preparation. Through the emergent design of the field study interview process, it became apparent that an interview with a representative of the local municipal office would contribute significantly to the student's experience. When invited to participate in the interviews, however, the local municipal representatives refused because I did not have a recommendation letter from a higher authority. This ended up being an important learning opportunity for the students that is highly transferable to their future professional contexts, but it is helpful to be mindful of the need to seek these kinds of approvals in advance.

Finally, the challenges of conducting this kind of authentic learning activity in a reasonably discrete and isolated context reinforces the need to expand these kinds of activities to more courses and programs to better prepare students for applied learning that is relevant to their future careers. Imbedding this kind of approach more systematically, consistently, and comprehensively across the national education system would help build teacher capacity to guide students in transitioning to this insightful mode of learning. Furthermore, it would facilitate offering these kinds of field-based learning experiences in a cross-course, interdisciplinary milieu which can help students acquire more well-rounded expertise and professional competence.

For journalism students, this kind of field study is invaluable not only for the development of transferable and highly marketable skills but also for enabling a more caring, sensitive, and appreciative disposition towards the individuals, groups, and cultures that are under investigation.

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Acknowledgments

The authors would like to acknowledge Shao Jiawen, a postgraduate student from School of Journalism and Communication, Hainan Normal University of China for her assistance in data sorting and preliminary analysis.

This article is one of the publications of the research project of Reformation on Teaching Methodology for Local Undergraduates Majoring in Communication in Digital Media Era funded by Hainan Provincial Education Department.

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22. Emergency Interview Lesson

LES WISEMAN

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Rationale

In the real world, all successful non-fiction stories, journalism, technical writing, government writing, and public relations (PR) writing involve primary research. This means talking with strangers. Such an effort often terrifies students. In my experience, if you want to create an authoritative piece of narrative or expository writing, you must step outside your comfort zone to where the magic happens. Successful writers capture some elements of the magic. Readers want expert opinions. Students can no longer fake it by cobbling together library and web research with opinion. Thus, you must interview the people who know what they are talking about. If you want to be read by real-world audiences, you must venture into the real world.

Even if you are interviewing someone you have been a fan of for years, it can be nerve-racking to finally meet them face to face or have them on the other end of the phone. Even professionals can go blank while doing a task they have done daily throughout their entire career. To be fail-safe you must be prepared for anything: an interviewee's bad mood, or lack of time for preparation. The smart interviewer comes with insurance beyond even extensive research

on the subject. In primary research, the wise interviewer has fallback: the emergency interview.

Overview

Setting the context

I created this list of questions long ago and I have used it as the basis for over a thousand interviews over 35 years of journalism and PR. This is a real-world tool that professionals in a communication field will use throughout their careers.

I illustrate with the following anecdote how the emergency interview has helped me. During a horrible time in my life, I was working about 18 hours a day as producer of three daily radio talk shows, while still fulfilling my writing commitments. I was a stressed mess. One afternoon, I tried listening to a meditation tape and I promptly fell asleep. The phone ringing woke me, and I groggily answered it.

The voice on the other end, said, “Hi, it’s Pamela Anderson. We’ve got an appointment to do an interview.” I had completely forgotten. However, on the corner of my desk was my emergency interview list. I grabbed it, clicked on the tape recorder and started asking intelligent questions as if I had been preparing for this interview all morning. As an editor, I have also sent an inexperienced reporter to interview Arnold Schwarzenegger with my emergency interview as his only preparation.

Another tool I use to increase class engagement is to point out many students do not take this tool seriously. I have had many students get a job in communications and then call me in a panic: “I’ve got to interview someone in 15 minutes, and I vaguely remember you supplying our class with a list of questions for

interviews. Do you still have that? Can you send that to me ASAP?” Of course, I still have it; the question is why don’t you? If you throw out all your notes (which should be tools and techniques) as soon as you get your marks, you might as well not have gone to school.

Preparing your emergency interview lesson

Step one: Discuss the interview as the basic tool of all research-based writing, be it journalism, PR, technical, or business. Stress how important it is to be prepared for unseen circumstances that will allow you to collect a valuable interview without prep time.

Step two: Instruct the students that they have 20 minutes to open a word-processing document or take a pad and pen and brainstorm key words that will become question triggers for every interview situation they can think of: basic, music star, sports personality, politician, movie star, businessperson, author, artist, chef, architect, or anyone who would be the basis for an interesting profile. For example, a basic feature profile must include age, marital status, correct job title. Reiterate they do not have to write complete sentences, just key words.

Step three: Compare and assess. When they have completed step two, each student is asked for their best question, which is then assessed by the instructor in front of the class. The qualities that make a question great do not necessarily make that question your choice to lead your interview. Some questions — age, marital status, recent allegations — may often be best left until a rapport with the interviewee has been established. (In some cases, the question that might get you a kick in the shins or a demand to exit the premises might reasonably be left until the end of the session. Thus, giving you time for a head start.) If another student uses their question before a student is called on, the student must pick another question from their list. In an online situation, a wiki may be used. Provide feedback on each question, pointing out open-ended

questions are best to ask. Assign or show Chris Farley interviewing Paul McCartney on Saturday Night Live, as a perfect, and hilarious, example of how not to frame your closed-ended questions. Students add classmates' questions to their lists.

Step four: Reveal My Emergency Interview in class or posted and previously hidden on the class Moodle page or via the Instructors Forum/Class Announcements.

Step five: Either in class or for homework, invite students to add questions from My Emergency Interview to their list. Then, they must collate their list and divide it into categories: basic questions, politician questions, business questions, movie-star questions, rock-star questions or a category that pertains to their research interest.

Step six: Urge the students to print out the file and keep it on their desks, computer desktops, smart phones, or in their bag, always. This is now a document they will use all their writing lives. It will enable and empower them to walk into interviews and ask intelligent questions at short notice.

Evaluation: Ask the students how they did on the brainstorming. Did anyone get 100 per cent of the questions on the instructor's list, 50 per cent, more? Did anyone identify interview categories other than what the instructor listed? Each student reports to the class.

Reflections

The learners have now created a tool that they can use for the rest of their writing life. The emergency interview gives a sense of accomplishment that they are now wielding a tool of the professionals.

Any question list is not definitive for every subject. Each interview offers possible questions to add to the list.

The questions are in no particular order and should be reordered based on their intended use according to the subject. This can be

done in two minutes. Not all questions are relevant to all subjects. Still, as insurance against disaster and embarrassment, this list is a safety net that will allow the novice or unprepared interviewer to enter any situation with increased confidence.

Appendix A: My Emergency Interview

General

- What is your current project?
- How do you see your work evolving?
- Who are your peers? Assess them.
- What do you aspire to?
- What motivates you?
- What is your opinion on the current state of your industry or field of endeavour?
- Who are your heroes, influences?
- How do people perceive you? What do you represent to the public?
- What is the most widely held misconception about you?
- What is the biggest obstacle you have had to overcome in life?
- How do you handle stress?
- Do you have any philosophical or scientific views that influence your life? Describe your philosophy, spirituality, religion.
- Describe your most rewarding professional moment.
- Describe your most rewarding personal moment.
- What tradition do you see yourself a part of (e.g., racial heritage, profession, family)?
- How did success affect you?
- How has money been of use to you?

- What do you do in your free time?
- Describe your home life.
- Describe your significant other. How did you meet?
- Where have you lived?
- How would you like to be remembered?

TV/Film

- Who are your role models?
- How do you feel about roles you have played?
- What roles would you like to play?
- How do you feel about particular genres?
- Describe upcoming projects to air, to shoot.
- What about a project usually appeals to you?
- How do you feel about violence in media?
- What you watch (television, movies, videos)?

Mini-Profile/Dossier magazine style

- What kind of car do you drive?
- Describe your fitness regimen.
- Describe your diet.
- What is your favourite restaurant/kind of food?
- Do you have a favourite clothing designer?
- What kinds of jobs have you held?
- What is your favourite drink?
- Tell me about pets in your life.
- What are your religious beliefs or philosophy?
- Do you have a recurrent dream?
- What is your current bedside reading?
- What is your pet peeve?

- What is your astrological sign, and how does it reflect you?
- Will you share vital statistics (e.g., age, weight, clothing size, shoe size, height, eye colour)?
- Describe a moment of high drama in your life.
- Who is the most impressive person you have ever met?
- Who is the worst person you have ever met?
- What were your parents' occupations?
- Describe your education.
- What is your favourite television show and movie?
- Is there a culinary specialty that you cook?
- Do you have hobbies?
- If reincarnated, what you would choose to come back as?
- What are your favourite books?
- Describe your best and worst drug experience.
- What upsets you?
- What is your earliest memory?
- Who are your heroes?
- Describe your routine/schedule.
- What charities do you support?
- How do you cope with stress?
- What is your political leaning?
- What is your biggest fear?
- What is your favourite holiday spot?
- What indulgences do you enjoy?
- How would you like to change the world?
- What would your friends say about you? What would your enemies say?

About the Author

Les Wiseman

Les Wiseman has chronicled the pop-culture industry for over 35 years. He wrote for *Vancouver* magazine for 11 years, eight of those

as associate editor. He was also Western Canadian editor of *TV Guide* (Canada) for eight years. Wiseman left a position as senior editor at Canada Wide Media after nine years, during which he specialized in sustainable architecture, green design, as well as the hospitality and sport industries. He and the publications he has edited have been nominated for, and won, numerous magazine awards. Wiseman has written for television and produced talk radio. He has also written PR and corporate profiles for dozens of major companies. He taught at Royal Roads University for 11 years.

SECTION V

ENGAGING STUDENTS IN DATA ANALYSIS

23. The Parameterization of the Thought Process: Act like a Statistician

HANY FAHMY

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Rationale

Graduate students engaging in quantitative research need to transform a verbal statement or a process (their research question and hypotheses), W , into a set X of concrete measurable variables, $X_1, X_2, X_3, \dots$, which might have some kinds of relations among them. The student researcher must quantify and test the empirical validity/reality of any relationships that might exist. Therein lies the significance of statistics as a powerful analysis tool for working professionals who are doing action-oriented applied research.

I feel the two best places to start learning about data exploration are descriptive statistics and regression analysis. These two subjects remain among the most popular subjects taught in graduate business programs due to their importance and vast applications in applied research (Rose et al., 1988). My choice of one foundation subject (descriptive statistics) and one application subject (regression analysis) is intended to emphasize the importance of

including a proper business statistics sequence in graduate business and social sciences and humanities programs.

Overview: Descriptive Statistics and Regression Analysis

Once random variables pertaining to a particular process W are defined,¹ the next step is to perform a preliminary analysis, known as descriptive statistics, to present and summarize the data. This description could be in the form of graphical representations of data, e.g., bar charts, pie charts, and histograms, or through summary statistics, e.g., means, standard deviations, or pairwise correlations (Thorndike, 1982). The descriptive and summary statistics reveal patterns among the variables which are often useful, but not sufficient, in hypothesizing the relation among these variables.

Hypothesizing relations among research variables is not an easy task. Although descriptive statistics as a subject is useful in suggesting the type of the relation, e.g., linear or non-linear, the researcher should develop their knowledge of various applied statistical techniques such as: regression analysis, time series analysis or analysis of variance, in order to select the proper way of modelling the relation under consideration. Therein lies the importance of introducing graduate students to applied statistics as part of their quantitative training in graduate programs. In any of these forms of analysis, the student's intent must be translated into a measurable research question. This process is an active learning exercise that requires a sound thought process from the student

1. See Chapter 15 for more on the thought process of parameterizing a researchable question.

and much-needed guidance from the instructor. The student is expected to conduct a thorough literature review on the subject before selecting a particular technique of analysis.

Linear regression analysis is a statistical technique used to estimate linear relationships among variables (Fahmy, 2017; Gujarti, 2003; Johnston and Dinardo, 1997; Pindyck and Rubinfeld, 1998; Studenmund, 2006). My intent here is not to discuss regression analysis per se, but to use the subject to demonstrate how this thought process can be translated into a measurable (and solvable) research question.

Application: assessing the performance risk of search and rescue operations in Canada's polar regions

This case addresses a Canadian helicopter company that provides aeronautical and maritime Search and Rescue (SAR) in Canada's polar regions.² To reduce the cost of crew transportation, the company seeks to extend the scheduled tour of duty for crews beyond the normal 14-day duration for a period up to 30 days. The company, however, is keen to maintain a target SAR call-out dispatch time of 29 minutes.³ To better understand the performance risk of extending tour duty beyond 14 days, the company has tasked its safety, quality, and flight operations department to conduct an empirical study to determine the risk of

2. I would like to thank Chris Burt for providing this case as part of his dissertation.
3. SAR call-out dispatch time, also known as "wheels-off time," is a time metric measured in minutes from the time a SAR Dispatch call-out is received from the Rescue Coordination Center to the actual aircraft airborne time

this enhanced performance on the 29-minute-target SAR call-out dispatch time.

The thought process: defining the key study variables

This case study, part of a doctoral dissertation by Chris Burt in the School of Business at Royal Roads University, seeks to assess the impact of extending the scheduled on-call duty beyond 14 days. This broad statement is considered the process W . The two key variables that map W into a meaningful relation are *performance* and *dispatch time*. The latter is properly defined and has a measurable scale, i.e., minutes. The former, however, is too broad and not clearly defined. In this case, the researcher should think of a proxy variable that captures performance. Since SAR performance may be influenced by increasing the duration of the on-call shift beyond 14 days, it is sensible to use the on-call duration in days as a proxy to measure the fatigue level, and hence, performance of the on-call team. Let $D_0 = 14$ days be the original on-call shift duration. Define $d = D - D_0$ as the number of days, D , in excess of $D_0 = 14$ days. The previous thought process, therefore, suggests two key study variables: The excess on-call shift duration in days, d , as a proxy of performance, and the SAR call-out dispatch time in minutes, which will be denoted by T . We can now formally specify the research question (RQ) as follows: Will d have a negative impact on T ? This is the mathematical formalization of the process W . The RQ simply examines whether extending the duration of the on-call shift by more than 14 consecutive days will negatively impact the performance of the on-call team, which will result in a SAR call-out dispatch time that exceeds 29 minutes.

The previous thought process (as well as the parameterization exercise and the statistical analysis that will follow) is the added

value the instructor brings to the teaching of statistics. Active learning is achieved when students attempt to apply these processes in their own research.

The parameterization exercise: linear regression

As mentioned above, the result of the thought process is a clear definition of the study variables and the RQ. The next step is to use data and statistical analysis to examine the RQ. At this stage, Descriptive Statistics can be used to deduce patterns and infer relations between the study variables, i.e., d and T , in the present context. If a linear relation is suspected, linear regression analysis can then be used to see if a linear model will capture the relation between the variables.

In the present case, one way to capture the causality from T to d is to fit a simple linear regression model, where T acts as a dependent variable (the variable that changes due to changes in the independent variable) and d as the independent variable (the variable that changes due to the circumstances of the study, in this case the extended shift duration).

After specifying the model, the next step is to see if it fits the data. In this example, the data pertains to a particular company and, therefore, is not publicly available. Burt, however, was able to simulate the performance of one SAR crew and record the SAR call-out dispatch time, T , every time a call was made and the corresponding number of on-duty days more than 14 and up to 30 days, d , pertaining to the crew under study. By doing that, he was able to obtain a sample of 25 observations on d and T .

Using this sample data, Burt, following my suggestion, was able to estimate the following equation:

$$T_t = 29 + 0.3d_t, t = 1, \dots, n. \quad (1)$$

The results in Equation 1 show that when $d_t = 0$, dispatch time is predicted to achieve the target of 29 minutes; that is, an on-call

crew with an excess shift duration of zero days, is predicted to take 29 minutes to respond to a SAR call. This is precisely the target SAR response time under the standard 14-day shift. The 0.3 estimated value of the parameter next to the variable d_t means an increase in the shift duration by one additional day (in excess of the standard 14 days), will increase the SAR dispatch time by 0.3 minutes (20 seconds). This value is significant, for it represents a quantification of the marginal performance risk as a result of extending the crew shift by one more day, which is the objective of the study.

It is worth noting that quantifying the parameters of the model does not only capture the effect of excess duration on dispatch, but it also provides a concrete way of predicting/forecasting this effect. For instance, it is easy to predict from Equation 1 that an increase in shift duration by 5 days will result in a SAR dispatch time T of $29 + (.03 \times 5) = 30.5$ minutes. Thus, the risk of this extension is a 90-second delay in dispatch.

Reflection

During the development and execution of the thought process pertaining to any appropriate applied study, it is essential that the critical thinking stage (the stage where the researcher is contemplating how to approach a research problem) be used to define the key variables of the study and the relation that ought to be tested empirically. This mapping, from a general statement or process to a more precise set of measurable variables, is founded on mathematical reasoning. I find it challenging to teach how to think like a mathematician, for it is a learning-by-doing skill. Nevertheless, only a solid foundation of elementary algebra and a bit of mathematical logic is needed for this process to be successful. You do not need a degree in mathematics to think like a mathematician; however, you need to know the tools of the trade.

Once variables and relations are defined, the next step is to carry on the statistical analysis. A thorough review of the literature on the subject, coupled with mastering the statistical applications, should enable the researcher to identify which technique is suitable to carry on the analysis. Mastering the applications, however, requires clear understanding of the statistical foundations. Hence the importance of the business statistics sequence in graduate programs (Rose et al., 1988).

To sum up, approaching any quantitative study requires the thought process of a mathematician and the actions of a statistician. Acquiring these skills is challenging, especially for graduate students who lack the proper foundations. Despite this challenge, it is not impossible to acquire this knowledge and carry out credible research.

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24. The Importance of Playing with your Qualitative Data—Get Messy!

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Helping novice graduate students relax about analyzing their qualitative data is the aim of this workshop; while the activities may appear elementary, that is the essence of its charm.

Rationale

This activity can bring your novice researchers closer to understanding their qualitative data by engaging and asking questions and working with themes and categories in a highly visual and tangible manner. I have used this workshop to help novice graduate students make sense and ask questions about their qualitative data, while learning from their peers, and having fun understanding their data. I first experienced this playful qualitative data analysis in a workshop led by Dr. Jude Spiers. Focusing on novice graduate student qualitative researchers and inspired by Morse and Field (1995), Spiers (2019) shared her ideas for better understanding qualitative data through inductive analysis and

cognitive processes. Getting everyone to relax and fearlessly engage is an essential part of this active learning experience.

The tools you will use and the process involved should make this powerful visual activity resonate with your students long after the workshop ends.

Overview

The workshop is three hours in length and requires students ideally in small groups of three to five people. You may design your groups in any size that suits your needs, but smaller may be better. Gather something to use to represent the data that is “the same but different.” In this example, I use a large bag of assorted buttons (Spiers, 2019); buttons represent the data. When you have an assortment of buttons of many shapes, sizes, designs, to help students begin the activity, you will also need to include objects that might not be a button. You may include a paperclip, or a string, or other items that do not appear to be a button. At one stage in your workshop, as the instructor, you will learn from students why they did not include these objects in their groupings. Or, if they did include the string or the paperclip, what were they thinking about when playing with this ‘data.’ The grouping of buttons and the non-buttons become a part of your inquiry as you engage with the students about *how* they sorted what you gave them, their ‘data.’

Preparatory step

Begin by using the guiding questions handout in Appendix A to warm up the students for the activities. These guiding questions will prompt the students to reflect on what makes them anxious about their research journey; for example, your students might be

anxious about their data analysis for a major research project, thesis or dissertation. Once you have allotted approximately five minutes to this activity from Appendix A, move to the second preparatory activity. This activity can be found in Appendix B. The handout includes guiding questions pertaining to their coping strategies. These handouts are personal, and the students will keep them to themselves. There is no need to share their thoughts and concerns with others, but you will ask the students to return to what they wrote when the workshop ends and to keep their handwritten notes available for that time.

Step One: setting the stage

Now that the preparatory step is complete, introduce your visual data tool. In my example, I present a large bag of assorted buttons as the visual data tool. I tell a simple story on how I came to have accumulated or collected so many buttons. It is important to keep the story simple and authentic and remove any possible suspicion about perceived hidden meaning about the visual tool items. Other visual data tools could include sea glass, bottle caps, stamps, anything that can be shared freely with your students that are variations of the same thing. Include in your assorted items some things that may not be traditionally identified as belonging. In my example of assorted buttons, I will include items such as paperclips, random pieces of string, or other small artifacts. These items, included in my assorted buttons, are typically not viewed as a traditional button in our frame of reference. These ‘non-buttons’ will find their way into your visual data for students to see and take some action. Whatever visual data tool you choose, create a relaxed and familiar atmosphere for your students to speak freely throughout the workshop.

A brief interruption

Some students will have fun and question each other during Step Three regarding how the string or paperclip function might be the same as the button and how our contextual understanding shapes our understanding of the data analysis – might a paperclip also be a button? Stand by for that excellent conversation when you are overhearing explanations during Step Three! If students do not question the non-button, this is where you can invite that conversation in Step Six. There is a flow to these steps, and opportunities will arise that you will take as key learning and teaching moments.

Step Two: organizing the data

The instructor produces their bag of things, in my case it was assorted buttons of different shapes, sizes, colours, textures, and some essential non-buttons, as mentioned earlier. The instructor uses a cup to scoop from the bag, placing the contents onto the desks for each team. With the randomly poured cup, you will attempt to have at least one non-button in the data. Invite your students to sort their buttons in a way that makes sense to them (see Appendix E). This instruction allows for minimal direction from you and enables student viewpoints. Each team will then actively organize their buttons/data in whatever groupings they would like to use. This process is fun and engaging. Students will be overheard explaining to each other why the groupings are being sorted in this way or that way, as they go about the process of sorting. Sometimes, there is a level of suspicion and attempts to overthink what “sort your buttons in a way that makes sense” might mean. In Step Two, students may choose to observe what others are doing to get a sense of the instruction you provided. Observation may occur when

a group member feels this exercise is too simple or they might be looking for the ‘trick’ that lies ahead. The simple approach to the practice is part of the charm. After about four or five minutes, while students continue to sort, move to Step Three.

Step Three: surfacing assumptions

As the instructor, you can move freely from table to table to overhear student explanations. Make mental notes of what you hear.

After you have walked from table to table, you invite the students to report out and share with their peers how they sorted their buttons. Examples might be if you hear a student from one team declare, “put all the gold buttons in this pile,” you will be able to ask that team precisely what they mean by the term *gold*. Is it real gold, a colour gold? How did they define this word? What assumptions were they making? Sometimes a student can be overheard saying, “Put the cool-looking buttons in this pile.” By asking the student what they mean by the term “cool,” you are helping the student understand the subsets of their qualitative data, paradigms and perspectives. The conversation you engage them in helps make sense of their findings and construct meaning; Denzin and Lincoln (2017) describe this as the interpretative approach that qualitative research uses. In this instance, the student is learning to question and interpret. As you move to Step Four, you will have the opportunity to probe and question further.

Step Four: presenting interpretations

After ten minutes, invite each group to share their qualitative data sorting process and resulting groupings. This can be best done as you move from group to group, inviting each group to report out

how they sorted their data. During this exchange, you will have opportunities to refer to earlier conversations and probe further any conversations you overheard when you were moving freely from table to table. Student responses to your probing will again present opportunity for students to make sense of their data, as described by Denzin and Lincoln (2017).

Step Five: collapsing categories

Once you have travelled the room and all teams have shared their qualitative data sorting process and resulting groupings (as in Step Four), invite the students to take their piles and re-sort them but this time, sort down from, say, five piles to three. Ask them to take notes on how they made their re-sorting decisions. When they finish, ask them to sort again but this time into two piles and again take notes on how they made their resorting decisions. This step allows them to rethink their understanding of their data and categories. By taking notes, they will be able to report out to the room of students, which is the next instruction. To achieve maximum engagement and understanding, ask all students to stand and gather around each table as peers share their sorting explanations of what they did to create the smaller piles of buttons.

Step Six: Debriefing and next steps.

The workshop's essence is to show how messy data analysis is, and that evolving and changing codes and categories is fine as novice researchers comprehend and synthesize and recontextualize their qualitative data analysis (Morse & Field, 1995; Richards & Morse, 2013). To carry out the debriefing, remind students of the notes they took when they were reorganizing their piles. In this instance

they were abstracting and “theme-ing” or “thinking up” from the data (Richards et al., 2013, p. 13). The researcher is interpreting the data to construct meaning and it is here that novice researcher can be made aware of their assumptions, limitations, and delimitations during the debrief.

Step 7: Getting feedback on your workshop: the student experience

Invite students to return to what they wrote in the first two preparatory exercise handouts (Appendices A and B). This process helps situate the student where they were when they began and where they are after the workshop. At the end of the session, I use a simple handout titled, *The Muddiest Point(s)* (Appendix C), which I invite students to hand in before leaving. The premise of the handout is to garner areas that are still unclear or require more information, resources, or practice. Based on your practice and teaching style, there are many ways to structure your feedback and amplify this conclusion to the workshop.

Conceptual Underpinnings and Methodological Viewpoints

The workshop’s conceptual ideas are from Richards and Morse (2013), regarding inductive analysis’s cognitive processes. The intention is to have the novice qualitative researcher actively connecting terms and concepts with what they are doing while also demonstrating the importance of playing with data. As mentioned earlier, the workshop’s essence is to engage in data analysis’s messiness and share the insight that evolving and changing codes and categories is part of the process. These processes can hinder

and freeze novice analysts, according to Spiers (2019). Involving students in the visual and tactile activity and getting everyone to relax and feel playful is essential for this active learning activity.

Making this a remote learning activity

I have made modifications to this activity to include a remote delivery modality. Using a shared file resource (such as Google Slides or Microsoft Word), have each team of students use graphics of buttons on a slide filled with buttons. Students can use the drag and drop feature to sort as a team. Appendix D offers a visual example of a Google Slide for remote workshop delivery.

Reflection

In conducting this teaching and learning activity in the workshop setting, some teams start quickly and with enthusiasm while others hold back, unsure of what to do. When the instructor invites students to play with the ‘data’ (buttons, bottle caps, sea glass), they become engaged in a qualitative analysis process involving coding, questioning, describing, and interpreting. This activity of inquiry and description is highly memorable for adult learners. As described by Spiers (2019) it is okay to make mistakes, encounter dead-end lines of inquiry or coding, to code all sorts of pieces of data, or not to code at all, depending on your stance as a researcher, your research question, and your method.

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Appendix A

Activity One Handout: What makes you anxious about your research journey?

In your experience, which cycles of deliberation are the slowest and most frustrating?

- The hardest part at the moment is...
- Why is this so hard for me?
- The hardest part I anticipate is...

- Why is this so hard for me?

Appendix B

Activity Two Handout: Coping with Research Distress

Identify your 3 dominant coping strategies

1. __
2. __
3. __

- Are these strategies beneficial or not?
 - How do you know?
- When do you move from constructive to non-constructive copying?
 - At what point does a bad coping strategy undermine your progress?
- When stressed, do you withdraw or reach out?
- Is it difficult to help you? Why?

Appendix C

The Muddiest Point Handout

Thank you for participating in this workshop. Before leaving, please take a moment to share any concepts or information you would like more clarity and assistance in the future. What resources do you need for your next steps? How can we help?

Appendix D

Remote Learning Adaptation

A visual example of adapting this workshop to a remote learning activity is shared here.

Also available on a google sheet for simultaneous group activity.

And an MS PowerPoint slide is included for your ease of use.

Appendix E

Please sort your data (buttons) by organizing into groupings that make sense to you



About the Author

Moira McDonald

Moira McDonald joined Royal Roads University in 2016; with twenty years of experience in academia and the hospitality and tourism industries, her senior-level hospitality experience and teaching experience provide exciting classroom discussion, problem-based learning and discovery, relevant topic analysis and inquiry. McDonald is passionate about teaching and supporting a sense of belonging for undergraduate and graduate students. Her research interests include intercultural education, leadership in tourism and hospitality, women and mentorship in the workplace, niche tourism, internationalization of curriculum, and adult learning theories as applied to experiences and transformational learning theory.

25. Business Analytics: An Approach to Develop Applied Research Competency

DEBORA LINEHAN AND NICOLLE BOURGET

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Rationale

How might graduate students gain research competencies for application in the business organization environment that enhances their professional management skills? Increasing emphasis is being directed to problem solving based on scientific practice and evidence-based decision making (Davenport & Harris, 2017; Rousseau, 2006; Watson, 2013). Further, companies are beginning to use data analytics to predict the future rather than rely only on historical information (Rippert et al., 2021). The capacity to store and use big data sets has presented an opportunity to optimize and understand how data management may provide a competitive advantage for innovation and effective management (Davenport & Harris, 2017). Like data scientists, business managers also need to develop analytic capabilities to harness and understand data; graduate business students can learn the skills of applied research

and data analytics to enhance their management competencies (Anderson & Raine, 2012).

Organizations have failed to develop practices based on scientific evidence: aptly described as the “research-practice gap” (Rousseau, 2006). Researchers and educators could play an important role in building those capabilities and practices (Watson, 2013). Business analytics represents a bridge to cross the research-practice gap that may easily be adopted in business organizations. A useful definition of business analytics is “The scientific process of transforming data into insight for making better decisions. By analytics, we mean the extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions” (Davenport & Harris, 2017, p. 25). The skills of business analysts include techniques that are quantitative, qualitative, and mixed methods using statistical techniques, systematic reasoning, and working with models (Holsapple et al., 2014). The complex and dynamic nature of organizations and businesses continues to require a systemic approach to analyze complex business issues and develop insights to support the decision-making process. Here, I present an approach using business analytics to develop applied research competencies that build the necessary foundational skills for future managers and analysts.

Overview

At Royal Roads University, the MGMT 580 *Applied Research and Business Analytics* course (delivered in both on-campus and blended modes) for management-based graduate students presents a unique design to teaching research and problem solving in organizations. The course integrates the two approaches of traditional academic research and business analytics and is a prerequisite to the Global Management Project (GMP) which is the capstone research thesis

for the completion of the Master of Global Management degree. There exist many parallels between a business analytics approach (which is taught first), and academic research approaches. The combination thereby provides a solid grounding and practice in basic research concepts. Throughout the course, students develop scholarly attributes that are needed for both academic and professional contexts, define problematic researchable areas, develop and design appropriate applied research, develop data analysis skills and techniques, and develop relevant insights that could be communicated to practitioners and academics.

The following outlines the course scaffolding of concepts culminating in a team assignment (delivered midway through the course) that is an example of business modelling used as a research method. The process is more fully defined in Powell & Baker (2016).

Course outline weeks 1-5

1. Explore problem-solving. Academic readings are augmented by a class exercise that examines real-world issues which move from a complex set of circumstances to well-defined business problems. News stories/issues are selected by the instructor and students. Through a thinking process of diverging and converging problem-solving, students analyze the components of the story – its structural elements, context, stakeholders, and evaluating potential options for analysis. In most cases, several well-structured researchable problems are extracted from the story. Objectives are clearly defined, assumptions are made, and checks are conducted to ensure the necessary data are readily available. The parallel to developing a research project is made.
2. Sketch the influence chart (Appendix A, Figures 1 and 2). Effective modelling takes place within a larger problem-solving process. As a precursor to modelling, an influence chart is

sketched out that further distills a focused objective, and associated variables that may directly and indirectly impact outcomes. Students appreciate this visual way to conceptualize insights about the problem. At this stage students begin to clearly understand the impact of managing project scope to bring clarity to their selected research proposal, through learning to understand key relationships and parameters for data collection. The parallel is akin to deconstructing a problem and developing researchable problems that would lead to a research question(s).

3. Differentiate quantitative and qualitative analysis and define variable types. Students engage in a preliminary review of varied ways that data is presented and practice recognizing nominal and ordinal data in existing journal articles and data sets. This step allows for an understanding of how statistical manipulations could or could not be used and informs business modelling. Further, visual depictions of data analysis are discussed. The ability to present data in a visual way is an important management skill for communication within an organization (Powell & Baker, 2016). We refer to TedGlobal talk by David McCandless for an example of the power of visualization (McCandless, 2010).
4. Business modelling. The student teams begin to translate their influence charts into a diagnostic model. While many technology platforms might be used, most students are familiar with the breadth and ease of use of Microsoft Excel. This provides a familiar and non-threatening introduction to the practice of spreadsheet engineering to build a diagnostic model. Additional Excel tutorials are provided for those with less experience. Spreadsheet models are commonplace in organizations, but not always well designed to solve the problems they are built for (Powell & Baker, 2016). Students find this is a useful exercise to enhance their management skills and frequently comment they will use modelling skills in the future. Student teams have selected their own business

problem and present initial work for instructor feedback before refinement of the research problem and final model design.

5. Student teams present their research problem, research question, method assumptions and business model in class and engage in dialogue, receive feedback, and effectively argue their approaches. A description of the assignment follows here.

Team assignment: Building a decision model

The purpose of this assignment is to work in teams to build a decision model that captures a real-life problem situation. Consider the learning outcomes outlined below for guidance on the objectives of the assignment. For this assignment, students are required to create both an Excel model and narrated PowerPoint video that address the following:

- Select a real-life problem situation. Refer to the course practice in week one to determine appropriate problems and scope.
- Explore the complex issues presented to distill a researchable focus by answering the following questions:
 - o What do we know?
 - o What can we assume?
 - o What could the result look like?
 - o What information/research can be brought to bear?
 - o What can we ask the client?
 - o Are there any similar situations or problems?
- Formulate a problem statement.
- Draw an influence chart for the problem.
- Discuss the decisions, decision variables, potential outcomes, and relationships in the problem.
- Outline the parameters of the problem.

- Create an Excel model for the problem per instructions (Powell & Baker, 2016).
- Discuss the problem model.
- Create a narrated presentation that addresses the points above.

The learning outcome that was constructed for this assessment is to: Effectively use research methodologies, data sources, concepts, and theories to investigate, evaluate, and analyze findings that inform planning, decision-making and actions. The foregoing represents a typical business analytics course framework, and yet there are close parallels to the scholarly research competencies and the practice of applied research.

Reflection

I have taught this course since its inception in 2019 and am continually struck by the breadth and depth of the business problems in many industries that students tackle and their level of engagement in the modeling process. For example, excellent projects have analyzed airline passenger patterns, the efficiency of drone deliveries, real estate investment returns, chocolate sales in retail and virtual distribution channels, and the feasibility testing of new business operating models during the Covid-19 pandemic. In every case, the project is an iterative puzzle to solve. Teams gain confidence when they achieve their final projects, but initially struggle as they muddle through the ambiguity of refining and designing their research. The instructor is actively supervising teams throughout, forming an important relationship and creating an ability to connect deeply in the learning process. At the close of the first five weeks, the class transitions to the next five weeks when they prepare to write a research proposal. In a wrap-up exercise, we assess a list of research questions for effectiveness. Students

demonstrate an ability to identify weaknesses in scope, definition, and clarity. The business analytics process has helped them to translate key research and scholarly competencies into the next phase of their studies. Many of the students comment that they will use the analytic skills in their professional lives. I confess it is a difficult course to teach as it covers many concepts in a short period of time; however, refinements have improved the flow and I have come to appreciate the many parallels between business analytics and traditional research methods.

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Appendix A: Influence Charts

Figure 1

Building an influence chart

Built from right to left

Conventions on types of variables

Outputs – hexagons

Decisions – boxes

Inputs – triangles

Other variables – circles

Random variables – double circles

See Figure 2.3

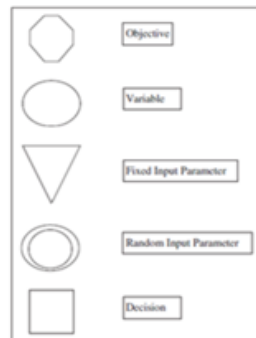


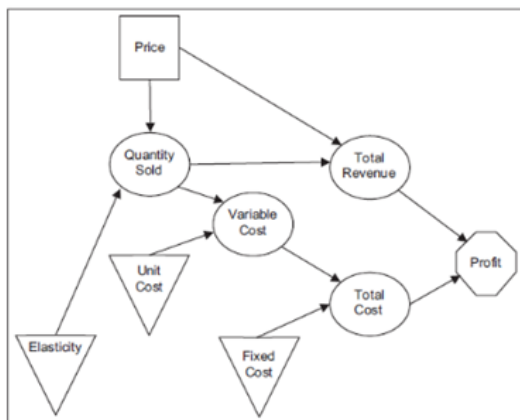
Figure 2.3

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Figure 2

Example: A pricing decision

FIGURE 2.2f Decompose Quantity Sold into Price and Price Elasticity



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SECTION VI

ENGAGING STUDENTS THROUGH SUPERVISION AND MENTORING

26. The Indigenous Scholar in Residence: Supporting Students in Decolonizing Research

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Opening Ceremony

In January of 2020, the role of Indigenous Scholar in Residence

The Indigenous Scholar in Residence:
Supporting Students in Decolonizing

(hereafter, Indigenous Scholar) was introduced into the Master of Arts in Leadership (MAL) program at Royal Roads University, situated on Xwsepsum (Esquimalt) and ɫəᑦʷəŋən (Songhees) ancestral lands. A key purpose was to support the Truth and Reconciliation Commission (TRC) calls to action by centering Indigenous ways of knowing and inquiring, and actively disrupting the ways in which Western knowledge systems have been used as a tool of colonialism. In an effort to model what we are teaching, this chapter introduces ideas in the Rationale, Overview, and Reflections sections in a way that follows the four directions of the medicine wheel and is aligned with teachings from the two faculty authors (Michael and Teara) who have both served as Indigenous Scholars.

To centre Indigenous knowledges as a core part of the program, the two-week intensive residencies at the start of the first and second years of the MAL begin and end in ceremony led by the Indigenous Scholar. Aligning ourselves with this practice, we open this chapter and represent ceremony through the written word with a teaching from the late Richard Wagamese, Ojibway author from the Wabaseemoong Nation:

My people say that there will also come a time when a new flame is lit. A new fire will burn and the human family will gather about it for shelter, warmth, community and belonging. This new flame will be ignited by the embers of those old tribal fires we have in common. There will be a returning to teachings that draw us together instead of pushing us apart. As these teachings are renewed, the human family will gather together and the energy of that joining will heal the planet—if we allow it. (Wagamese, 2019, p. 23)

Teachings from the East: Rationale

In the second year blended residency term of the MAL program, faculty members help students: (a) overcome the fear of doing

research; (b) systematically and thoughtfully plan their collaborative capstone research project; (c) develop a viable support system for their research; (d) think about how to engage a wide range of stakeholders to maximize the impact of their research findings; and (e) engage with the ethical dimensions of research, including researchers' responsibility to be relationally accountable to all to whom their research is pertinent. In this era of truth-telling and efforts toward reconciliation (TRC, 2015), as authors, we see it as a critical responsibility to not only introduce students to Indigenous methodologies, but also to encourage reconciliation through their capstone research.

More than teaching about Indigenous research, this chapter is a story of a group of Indigenous and non-Indigenous people working together to increase our capacity for mutual understanding, decolonizing efforts, and deepening human connection through the energy of love. As we increase these capacities within ourselves and collectively, it is our hope and belief that this work ripples outwards among our colleagues, students, friends, and family. The purpose of our work is to create new learning for all leaders, from all backgrounds, about Indigenous peoples' and nations' past and present realities in these lands that are today also known as Canada. From the deep and multi-faceted wounds caused by the historical and ongoing structures of colonization and racism, this chapter intends to support students and faculty to consider alternate ways of working and being through ceremony and systems thinking. In addition to teaching about Indigenous Methodologies, the role of Indigenous Scholar includes sharing the impact of ongoing racist, cisheteropatriarchal, hierarchical, anthropocentric, and capitalist values that lead to cognitive imperialism (Simpson, 2011), extractive practices, and ways of working that permeate our organizations and communities in Canada. Decolonizing inquiry involves both humility and a commitment to an ongoing collaborative learning process of raising leaders' consciousness about how they and we might uproot and transform colonial ways of thinking, being, relating, and leading.

Teachings from the South: Overview

The Indigenous Scholar is an active member of both the first year and second year faculty teams. A key purpose of the role as it relates to active learning for real-world inquiry is to support leadership students to critically consider their research methodologies, ethics, and methods through a decolonizing lens, as well as to introduce and/or deepen students' knowledge of Indigenous and decolonizing research principles, methodologies and methods (Archibald, et al., 2019; Kovach, 2009; Tuhiwai-Smith, 1999; Wilson, 2008). This includes supporting students to consider Indigenous perspectives as they decide: the scope of their topic; their overarching design and research plan; their research paradigms, methodologies, data gathering and analysis methods; how to represent findings and conclusions; and collaboratively creating actionable recommendations.

Building on Mi'kmaq Elder Albert Marshall Sr.'s methodology of *Two-Eyed Seeing* (Peltier, 2018), the second year, on-campus residency endeavours to respectfully engage students in learning about collaborative and action-oriented approaches that are rooted in both Indigenous and decolonizing methodologies as well as Western participatory and systems-thinking epistemologies. Melanie Goodchild and colleagues (2021) offer the Two-Row Wampum belt as a model for balancing these epistemologies: "the 1613 Two-Row Wampum treaty was formed between the Haudenosaunee Confederacy and the Dutch merchants arriving near Albany NY" (p. 82). In addition,

The two-row wampum treaty explicitly outlined a dialogical Indigenous-European framework for how healthy relationships between peoples from different 'laws and beliefs' can be established.... [It was based on] reciprocity between autonomous powers and serves as a guide for cross-cultural, cross-epistemological research. (Goodchild et al., 2021, p. 83)

In working to bring Indigenous and non-Indigenous approaches to leadership into dialogue through the program, the instructors endeavour to model “relational accountability” (Wilson 2008) that “attend[s] to a deeper level of consciousness that exists in a particular teaching place, a place between epistemologies” (Goodchild et al., 2021, p. 80) or what Ermine (2007) calls the ethical space. Indigenous students are also supported to use Indigenous methodologies and methods without having to position them in relation to Western research methods, recognizing that centering Indigenous ways of knowing is critical practice in disrupting colonial knowledge systems.

In teaching Indigenous leadership, two formal sessions are held during the residency. In the first, the Indigenous Scholar and a non-Indigenous faculty member present collaboratively on decolonizing methodologies using the Indigenous methods of storytelling and talking circles, modeling a dialogical approach to teaching and learning that is consistent with Indigenous relational epistemologies. This gives leadership students the opportunity to experience Indigenous modes of inquiry, giving life to core principles of Indigenous research that are introduced, such as Wilson’s (2008) notion of relational accountability and relational validity. Additionally, students experience first-hand the types of data and outcomes that such methods generate in contrast to the non-Indigenous data collection methods they are exploring during residency. Additionally, the Indigenous Scholar leads a session specifically on Indigenous methods and their use, addressing how to honour Indigenous research participants, Elders, Old Ones, and knowledge-keepers with gifts and other topics relevant to students’ projects.

Teachings from the West: Reflection

First and foremost, it is important that a sacred space for learning is created and nurtured.

Indigenous methodologies can serve to challenge colonial systems with intent and purpose. The Indigenous Scholar also supports non-Indigenous people to consider what it might mean to engage Indigenous knowledges while avoiding cultural appropriation: “Cultural appropriation is an issue that we must engage with all potential non-Indigenous allies. When colonizers appropriate aspects of our culture, this is just another part of a long colonial history” (Waziyatawin, 2009, p. 154). The Indigenous Scholar provides one-to-one or team coaching and facilitates plenary workshops, in addition to lunchtime open sessions and spiritual support or guidance as requested.

By non-Indigenous students learning through a trusting relationship with the Indigenous Scholar and asking questions about, as Michael says, *everything they always wanted to know but were afraid to ask*, leaders from across Canada deepen their approach to decolonizing their thinking and leadership behaviours and engage in research and leadership for change.

Four Arrows (2016) says, “Indigenous worldview is literally rooted in the earth. It is about interconnected relationships across the spectrum of the visible and invisible universe” (p. 135). “Indigenous ways of learning have always been about the inner journey that respects intuition, spirituality, artfulness, interconnectedness, Mother Earth, and situated experience as the ultimate ‘primary resources’ for ‘data’” (Four Arrows, 2009, p. 5). This is an epistemology of learning and inquiry frequently at odds with what many mid-career non-Indigenous students have internalized from their socialization in Canada. However, it is a perspective, as faculty and students have found, that offers a much-needed systems-thinking paradigm for living, learning, and reconciliation based on deep respect for all people and for our planet.

As Teara shared, *an Indigenous Scholar can shine light on the ways that dominant social, political, economic, and judicial structures and systems have overshadowed Indigenous ways of knowing while sharing, honouring, and amplifying the worldviews of Indigenous peoples and communities.* However, to be successful, the Indigenous Scholar cannot be expected to take on the task of changing student and faculty paradigms by themselves. The path must be prepared collaboratively with other Indigenous and non-Indigenous faculty incorporating Indigenous authors and content into the curriculum. Students need to know why this inclusion is essential in the course or program.

The Indigenous Scholar role is new; we are co-creating a process to mindfully harvest good learnings from each term that translate into awareness, advocacy, and action. The key elements of Wilson's three Rs of Respect, Reciprocity, and Relationality are a core part of the culture of this group (Wilson, 2008).

We offer that this role is not just for students; through authentic relationships with colleagues, the Indigenous Scholar has also served as a decolonizing guide for faculty and staff. However, this responsibility does not rest solely with the Indigenous Scholar; we expect non-Indigenous faculty to take responsibility for their own learning about decolonization and we have offered several learning opportunities in the School. We have learned that integrating this role into faculty planning meetings ensures that attentiveness to Indigenous epistemologies and worldviews might become more centred across all aspects of the course. Such awareness among non-Indigenous faculty and staff ultimately better supports Indigenous Scholars in their role, and both Indigenous and non-Indigenous students.

The Indigenous Scholar is a specified role in MAL; we have collectively designed it as a teaching, consulting, and mentoring role, which does not include grading and assessment. Including an Indigenous Scholar on a faculty team does not (and should not) preclude hiring other faculty team members who self-identify as Indigenous. We recognize the diversity of Indigenous cultures in

the land now known as Canada—and globally—and that there is no singular way of being Indigenous or of being a teacher. Three Indigenous scholars have served in this role, and each has been amazing in their own right, as they have shared stories, advised students, faculty, and staff, and have brought their unique gifts, varied teachings, research interests, and different styles to the Indigenous Scholar role, in service of student and teaching team collective learning.

The Indigenous Scholar has contributed to student learning as noted in student evaluations:

It was amazing. Michael was an amazing role model and created the space for us to ask questions without judgement. He provided me with resources to continue learning and encouraged me to do my part! He is inspiring and provided such important information and had the courage to share his story and culture with us. Having an Indigenous Scholar in Residence was very impactful (Anonymous student evaluations, 2020).

Teara did an amazing job of connecting us with Indigenous history and current realities in Canada. She changed my way of thinking from focusing on my immediate system, to focusing on the impacts of my system as well (Anonymous student evaluations, 2020).

Teachings from the North: Closing in Ceremony

Our journey with this integral role in our program continues. The experience we have shared here is but the starting point to a journey of discovery and reconciliation toward a new co-created story that is beneficial to our students and faculty alike. Various fora are being used to capture ongoing learnings from Indigenous and non-

Indigenous students and faculty. There will be challenges, no doubt, but they provide us with our greatest learnings. We hope you have as much joy and discovery in this highly rewarding undertaking as we have experienced from this learning. As an appendix, we have included two resources to support your further exploration:

1. a lesson plan on “Decolonizing Research: Indigenous Ethics and Methodologies” to demonstrate a key session led by the Michael and Rebecca; and
2. a list of recommended readings.

All our relations.

Note: *In the time since this chapter was written, we have expanded the Indigenous Scholar role to the MA-Leadership Health Specialization, as well as the MA in Climate Action Leadership. Please contact the authors to learn more about innovations specific to these two programs.*

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Teara Fraser. I am a proud Métis woman, a disrupter, a bridge-builder, a convener, and a co-creator. Born in the Northwest Territories and with relational ties to Fort Chipewyan, I feel the stories and the wisdom of my ancestors in my heart.

Graduating with a Master of Arts in Leadership degree from Royal Roads University was such a huge accomplishment for me, and the journey of learning now takes me back to Royal Roads as an Adjunct Professor in the same program.

It has been a joy to see the vision of the Raven Institute, Iskewew Air, elibird aero, and the Indigenous LIFT Collective and bring these ventures to life. I believe that together, in sacred spaces, we can reimagine, rematriate, and rebuild systems centering equity, justice, and sustainability.

Catherine Etmanski. I am a descendant of immigrants whose first known family members arrived from Scotland in 1772 in the lands now understood as Canada. They were settlers on Prince Edward Island. Through my mother, I am Irish-American, Dutch, and British. Through my father, I am Kashubian from Poland, and Scottish from Clan MacDonald of Clanranald. I have a deep curiosity for learning and research through the arts and a commitment to decolonizing efforts and reconciliation, within myself and in my identity as an educator. I currently serve as a professor in the School of Leadership Studies at RRU.

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Appendix

Session Outline: Decolonizing Research: Indigenous Ethics and Methodologies

As qualitative researchers supporting and leading change initiatives with organizations and communities, understanding and respecting ethical principles are integral to practice. As you engage in your capstone at Royal Roads University (RRU), you are required to have formal ethical approval from the Research Ethics Board (REB) prior to beginning your inquiry. However, the engaged, collaborative researcher acknowledges that everything you do in a research process is an ethical decision – from the questions you ask, the methods you use, to how you engage your partner and participants in your research. Being aware of the ethical orientation of one's research approach entails being aware of the every day decisions one is making and their methodological reference points, as well as understanding where your research is situated within distinctive knowledge production systems.

In order to make these decisions, one often turns to precedent, evidence-based and established practice either implicitly or explicitly. But what do you do when you learn that the precedents, evidence and established practices are themselves not neutral? Western research is historically embedded in a Western worldview and knowledge systems with particular historical and ethical orientations to the world. As systems thinkers, this session gives you the opportunity to reflect on the contours and features of the systems out of which Western research and scholarship was born, and within which it is still to large degree, historically embedded. It will encourage you to consider Indigenous and non-Western knowledge systems and research methodologies. What might it mean to bring a decolonizing lens to Western conceptions of knowledge, evidence, and ethical engagement? How do Indigenous conceptions of relationality transform engagement, research and leadership?

Across Canada, in response to the Truth and Reconciliation Commission (TRC), universities have been engaging in questions with respect to how to “decolonize” and/or “Indigenize” courses, programs and knowledge. From the vantage point of many Indigenous thinkers, the invitation of reconciliation is not an invitation to participate in *either-or* thinking where only one way of knowing is left standing, nor an act of ‘tweaking’ the existing system. Instead, Indigenous methodology itself invites one to consider how centering Indigenous ways of knowing, being and relating might transform and deepen, enrich and unsettle, Western ways of knowing.

This session will encourage you to critically and self-reflectively consider the ethical and methodological decisions you make in your research in the context of distinctive knowledge traditions. You will be asked to reflect on the ethical, methodological and leadership orientations of your capstone project from the vantage point of questions such as “Whose knowledge, about whom, and for whom?” We will also explore concepts such as “two-eyed seeing” (Peltier, 2018), or ideas about how Western and Indigenous approaches can be brought together in complimentary, enriching but non-assimilative ways, to offer greater depth of insight and understanding in your capstone project. We will discuss relational research methods such as those described in the decolonizing literature on methodologies, and explore their focus on non-extraction, collaborative practice and relational engagement.

Recommended Readings

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27. Co-dreaming New Ways of Supervising: Reciprocal Mentorship and Allyship with Indigenous Students

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Rationale

Navigating the Western academy and undertaking research can be challenging for Indigenous students. They may need to negotiate a number of structural and/or systemic barriers as well as attend to family and community needs while engaged in a post-secondary educational experience over-shadowed by the history of residential schools (Battiste, 2014; Regan, 2010) and Eurocentric research protocols that may differ from Indigenous ways (Atleo, 2004; Kovach, 2009; Kovach et al., 2015; Wilson, 2008). As a way of journeying with Indigenous students through their research projects, non-Indigenous academic supervisors might consider how to co-dream new ways of supervising through engaging in reciprocal mentorship and allyship.

To engage in reciprocal mentorship, non-Indigenous supervisors and Indigenous students can begin by recognizing that each person has practical wisdom that can contribute to the research journey.

As well, they will have a commitment to share and support the other in that learning. Desai, et al., (2018, p. 39) have identified key elements for successful mentorship across different cultures to include: mutual interest, trust and respect, a willingness to engage in discussions related to culture, and a commitment to rise above differences. In this way, reciprocal mentorship encompasses mutual responsibilities and benefits by both parties (Besette, 2015; Ferguson, 2017; Harvey et al., 2009). Non-Indigenous supervisors can mentor Indigenous students in understanding and navigating academic research processes and expectations. Indigenous students can mentor Indigenous supervisors by sharing their vital cultural and community expertise and offering a different worldview. This is not to say supervisors abdicate any of their own responsibility to understand Indigenous ways and/or unfairly burden Indigenous students (Pete, 2016), nor is it about supervisors displacing their own academic expertise. This is about valuing each other's lived experience and knowledge within the respective roles of student and supervisor and as whole people, and how all this contributes to the research process (Webster & Bishop, 2021).

Additionally, knowing that Indigenous students face many structural and/or systemic barriers, supervisors and students may at times deepen their relationship through allyship (Smith, Puckett & Simon, 2015). Allyship "is about locating self, recognizing and working to change inhumane, unjust and inequitable institutions and systems, advocating and offering support, and co-creating meaningful relationships with Indigenous Peoples and communities" (Mitchell & Bishop, 2020, p. 130). Engaging in reciprocal mentorship and allyship is important because Indigenous students come with a history and worldview that is distinct from the dominant Eurocentric view. Therefore, collaborating may be a way to heal past injustices; challenge systemic racism and discrimination; and co-create new ways of thinking, feeling, doing, and relating together to make the world a more just and equitable place for all peoples (Mitchell & Bishop, 2020).

Some learning outcomes achieved through working within a conceptualization of reciprocal mentorship and allyship are:

- support meaningful relationships;
- develop agency throughout the research journey;
- understand different worldviews and how they may, or may not, interconnect;
- extend whole-person, relational, and embodied learning through engaging head, heart, hand, and spirit;
- enhance capabilities to navigate and/or disrupt systemic barriers;
- advance transformative change; and
- expand community.

Overview

Reciprocal mentorship and allyship is not an instrumental activity. Complex relationships do not have a one-size-fits-all model, nor step-by-step instructions. However, supervisors and students embarking on such a journey might benefit from considering some key principles and practices. As a non-Indigenous academic supervisor, my work with Indigenous students started from a desire to be in service to them: to be present to who they were and what their hopes were around research. I was also open to their own knowledge and wisdom and interested in different ways of knowing, being, doing, and relating. In the beginning I drew upon my own intuition: seeking to actively listen and lean into their experiences and support their journey of walking within the academy. In this process, I learned much from them and about myself.

My supervision evolved to presenting and writing with students after they graduated: to further support them as emerging scholars, advance their research and the critical work they do in community, and expand the work we do together. In particular, I wrote on

reciprocal mentorship with Christine Webster and on allyship with Danielle Michelle (Webster & Bishop 2021; Mitchell & Bishop, 2020). In our article, Christine and I proposed a way of reciprocal mentorship that included navigating two worlds, finding a common language, and building upon shared values (Webster & Bishop, 2021). Danielle and I contended that to “foster [Indigenous] critical leadership, Indigenous leaders require ongoing Indigenous-specific leadership development, and non-Indigenous educators can play an important role through allyship” (Mitchell & Bishop, 2020, p. 129). Drawing on our academic journey, we interweaved Danielle’s research findings to highlight three key principles around allyship: the need for self-awareness and self-actualization, taking context into consideration, and engaging in approaches which promote action. At the heart of all my supervisor-student relationships is dialogue. In dialogue, we can articulate our intentions, explore curiosities, troubleshoot challenges, and debrief issues to find ways to move forward.

Reflection

I have come to understand two core insights into reciprocal mentorship and allyship in practice: (1) give students the space to find their own way, buoyed in the knowledge that you are waiting in the wings, and (2) know your role and where your edges are.

**Give students the space to find their own way,
buoyed in the knowledge that you are waiting in
the wings**

When we begin the research journey together, I invite students to

tell me their hopes and dreams for their research. I am interested in where their passions lie and what concerns that they may have about doing the research. In this way, they can provide me insight into how best to mentor them through the process. We review the big picture of their research journey and put tentative dates to when they will complete key research components of proposal, ethics, data collection, analysis, report writing, and final submission. For thesis students, we also discuss the oral defense and final wrap up. Through setting the overall framework for our work and then engaging in it, I share my understanding of the academic research process with students and help them navigate the process. I have found when we have a shared understanding of timelines and deliverables we both can rest easy knowing we have markers to alert us if the student is starting to veer off path. As well, when the journey gets tough, I can remind them of their hopes and dreams for research to offer inspiration once again.

Indigenous students have a responsibility to connect with their community and elders. As a supervisor, I can learn about community protocols which include having witnesses and elders present during different research phases. Elders can be of great support to students in helping make sense of data and how to best represent the information. In her thesis (Webster, 2014), Christine consulted with elders and aligned her knowing, being, and doing as a Nuuchah-nulth woman through reframing academic research terms to knowledge gathered (data collection), sense-making of the knowledge gathered (data analysis), and offering guidance (recommendations). I supported Christine's choice to do so rather than demanding she adhere to strict academic formatting because we shared a common understanding of the importance of navigating two worlds and finding a common language. We also built on shared values, such as the importance of honouring community. In my own doctoral work (Bishop, 2015), I privileged theatre terminology when doing theatre-based research and spoke to data generation (data collection), interpretation (data analysis), and performance (recommendations). Thus, I find giving students the space to find

their way can reveal unique and interesting results as well as shared interests and deeper connections between ourselves and the work.

Know your role and where your edges are

I am always conscious of my privilege (being a middle-class, educated, white woman) and the power I have in the role of supervisor. Privilege and power are inherent in that I have the choice to engage in reciprocal mentorship and allyship or not. As noted in my article with Danielle (Mitchell & Bishop, 2020), allies come from a position of power and need to critically examine their position in relationship to colonialism, privilege, and oppression (Baskin, 2016; Patton & Bondi, 2015). As a result, I seek to unlearn colonialist ways and develop my own learnings through connecting with Indigenous colleagues and reading Indigenous literature (Archibald, 2008; Pidgeon, Archibald, & Hawkey, 2014; King, 2008; Thomas, 2018). I also seek to bring Indigenous wisdom, theory and critical leadership to the attention of my students. I have interviewed Dr. Cindy Blackstock, a member of the Gitksan First Nation, child welfare activist, executive director of the First Nations Child and Family Caring Society, and professor at McGill University on Breath of Life theory and leadership (Bishop, 2021).

I am fortunate to be part of a university that “is committed to implement the recommendations of the Truth and Reconciliation Commission and honour the United Nations Declaration on the Rights of Indigenous Peoples” (Royal Roads University, n.d., para 1). Within Royal Roads University, we have an Indigenous Education and Student Support office and an Elders’ Circle, *The Heron People*, who advise on local Indigenous protocols and projects. Our writing centre also provides the Four Feathers Writing Guide that “respectfully presents traditional Coast Salish teachings and approaches to learning to support Indigenous students develop as academic writers” (Alphonse, Charles, & Bell, n.d., para 1). In this way,

the university, organizationally, seeks to lessen systemic barriers and I, personally, seek to understand my own positionality and power. Then, depending on what might be the needs of the student, I can offer resources, refer them to Indigenous colleagues or scholarship, and/or, advocate on their behalf. Listening to my students' needs and strategizing with them, I have utilized my position as a supervisor, associate professor, and/or program head to clear obstacles that include removing time barriers and finding compromises within the academy to honour both academic standards and Indigenous protocols. In this way, I strive to live the principles of allyship that Danielle and I identified in our article, namely, self-awareness and self-actualization, taking context into consideration, and engaging in approaches which promote action (Mitchell & Bishop, 2020).

Conclusion

In closing, I have often had dialogues with students about being on the journey together and what might be of best service to them. It is not always easy knowing when my own worldview may be encroaching on my student. Once when I was tripping over how we might carry forward on in a good way, I expressed my concern and discomfort to Christine due to the underlying power dynamics inherent in our roles. She wisely counselled me, “walking this journey [is] a process; I appreciate your willingness to lead, follow and walk by my side” (Webster, 2019, p. 6). I now picture reciprocal mentorship and allyship as leading, following, and walking side by side. In considering the student-supervisor relationship as a process of leading, following, and walking side by side, I hope it is a step toward a more just and equitable place for all. My colleague and friend Will Weigler (2012) shared a quote from Lila Morales, Aboriginal artist and activist, who said, “If you have come to help me you are wasting your time—if you have come because your

liberation is bound up with mine, then let us work together” (p. 1). In working together, albeit with different roles, and roles that shift, I contend this type of student-supervisor relationship enables us to co-dream new ways of supervising, which can lead to transformative thinking, feeling, doing, and relating together to make the world a better place.

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Dr. Kathy Bishop is an associate professor in RRU's School of Leadership Studies with over 30 years of leadership experience spanning multi-disciplinary fields including counselling, social services, adult education, not-for-profit, and small business development. She holds a PhD in Interdisciplinary Studies (Leadership and Applied Theatre). She is a committed leadership educator and researcher. Her work focuses on values-based leadership, organizational culture change, and creativity. She utilizes a variety of arts-based, experiential, participatory, nature-based and transformative learning methods. Currently, she is the program head for the Master of Arts in Leadership (Executive Leadership specialization) and Graduate Certificate in Values-Based Leadership.

28. Listening In: Tracking and Teaching Methods Through Supervision

HILARY LEIGHTON

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“Scholarly knowledge is a vertigo, an exhausted famousness. Listening is better” (Rumi & Barks, 1995, p. 242).

Rationale

While important learning can accrue through more traditional methods coursework, meeting on an individual level with graduate students about conceptualizing their research presents an invitation for the supervisor to critically ‘listen in.’ When a supervisor resists the urge to pin things down too quickly, refrains from prescribing a standardized method, and picks up on cues and clues made evident by the student’s spoken and body-held language for what wants to be researched, the supervisor provides necessary time and space to track and trace ‘best fit’ where method of inquiry and topic find congruence. In turn, the student can produce fresh and extraordinary results. Examples in this chapter, used with permission of the students, illustrate what can happen when we pay attention, discern, and respond heuristically to what is already on

its way in the student's life, just waiting to be found. Pseudonyms have been applied.

For the supervisor to make time to be present to the student's passions, longings, fears, worries, and often tears: to hear what is affecting the student most, (including what is confusing or frustrating them about their research) entails having the ability to set aside any preconceptions and just listen. To act as a kind of echolocator for the student so they may hear their own words repeated back to them can seem revelatory. Not least of all, it encourages confidence and enthusiasm toward work they may begin to recognize as their own. To offer authentic, active feedback is to make provision for what is possible but perhaps not yet fully realized by the student. While first meetings are not always fruitful, in my experience students almost always know what it is they want to research, yet it might be only barely surfacing into their consciousness, first appearing as repetitions and bright threads in the conversation. Often, students do not have access to the any sort of 'map' to show them how to get from here to there (for that matter they may not yet know a 'map' exists). By 'map' I mean method. This is where we must slow and listen closely because as poet-philosopher Mark Nepo (2012) suggests, "listening is a doorway to everything that matters" (p. xii). If we can tune into what is alive to the student and what insists on being heard, the supervisor-student exchange can be a vital and instructive way-finding moment.

Research methods courses can offer a wide and rich overview of traditional inquiry, yet they cannot depict an adequate array of what is possible beyond convention, especially when methods can prove to be as unique as the student themselves. Sometimes, methods coursework is offered too early for students to be able to conceive of appropriate methods for research of which they may only have an inkling. This infers a responsibility on the part of the supervisor to resist any sort of early advice-giving before bringing their listening ear to the supervisory conversation and allowing ideas and aspirations to develop into fuller thought. Like fractals that repeat in natural systems, critical information can be

found within the particularities of each student's unique interests, a kind of holograph of the whole of their research represented within the smaller constituent part (Capra, 1996, Oberg, 2003). To be less prescriptive and more of a good guide in this capacity then, is to be discerning of the patterns found in language, to pick up on metaphors, attune to the inflection in tone and timbre of the student's voice, and be attentive to the dialectics found in their body language. Educator Antoinette Oberg (2003) found "The presence of this patterning was signaled by the fact that without a formal research method, each student already knew how to proceed. Each was reproducing a pattern that existed elsewhere in their lives..."(p. 126). However, many students are unaware of this larger pattern or question its legitimacy within academic research. What is needed is a long view from a 'super-visor' (read: over-seer) with a keen ear and perceptive heart.

Overview

Looking deflated, low-slung on a chair in my office, Sara was on the verge of tears. She sensed her classmates had all landed on their thesis topics and methods and as class research presentations loomed, she feared she was behind and worse, lost. She told me that she really wanted to stitch together the stories of the lived experience of other outdoor environmental educators so they might tell firsthand of the benefits of teaching in nature as a counter-argument to dwindling resources for outdoor learning for youth. She didn't know how or even if this could be done. I heard "stitch" twice before asking, "Do you sew?" She nearly leapt from her chair, "I am a quilter!" Well, there it was. The pattern already existed in her life. She already knew what she wanted to do and yet she didn't think quilting could be considered a valid research method at university (see Ball, 2008).

Her skilful means meant she could deftly and imaginatively depict the essence of her interviewee's connections with nature, work, life, and teaching by stitching fabric, while simultaneously crafting a thesis to allow meaning to materialize through an emergent, twinned, highly creative, arts-informed process. After Sara had conducted eight interviews and then designed and sewed each unique and elaborate panel to re-present those individual stories, she carefully placed them together, blocked the quilt and bound the edges, yet found herself blocked too. How could she write this up without losing the aesthetic nature of the quilt itself? I then asked, "Tell me how you make a quilt." Sara's explanation allowed her to realize she could use the quilt as a metaphor to write up and connect the stories (through theming) just as she had repeated colours and fabric themes to connect each of the panels to the whole. She recounted how she had selected fabrics, designed blocks, stitched, tore out and re-stitched the quilt. Now that was being mirrored in her writing process by gathering and theming stories, writing and re-writing, tearing out and rewriting again, moving back and forth from text to textile as complementary forms of expression.

Keeping with the generative nature of arts-based inquiry, her evolving quilt method allowed her research to (in)form itself from the stitching of the blanket to the 'sewing' of the thesis in order for meaning to be "made" (Ball, 2008; Leavy, 2009). Sara's final thesis artfully challenged American Psychological Association (APA) style conventions as text faithfully imitated quilt. Context, methods, and literature sections were left-justified; her own more subjective thoughts, insights, final synthesis, and recommendations were right-justified; and the participant's stories (with thumbnail representations of each panel) were centred on the pages, rendering a quilt-like visual, binding her research all together. When we invite and tend spaces where the patterns that already exist in student's lives can be revealed and reimaged as methods of inquiry, "congruence runs so deep that the topic becomes the method through which the topic is pursued" (Ober, 2003, p. 126).

Stitching was her method. She already had this pattern in her life, she only needed support to honour her hands-on learning style and let that manifest into method.

Most students feel a great pressure to conform to standard methods, to contort or distort their inquiries to fit conventionalized ways of researching. This can be a drawback to a discovery process that encourages (re)search to draw from the deepest aspects of the self. Ethnographer Laurel Richardson (2000) wisely asks the researcher to “consider a part of your life outside of or before academia with which you have deeply resonated. Use that resonance as a ‘working metaphor’ for understanding and reporting your research” (p. 943). If methods can be born from an “education of attention” (Gibson, 1979), then how one sees, hears, and feels things in response to the world becomes their ‘map.’ Sara’s research did not end with her binding off because not long afterwards, she found that the quilt stitched its own epilogue. Youth in her care took turns wrapping themselves in the elaborate comforter when it was their turn to share their own nature connection stories around the fire. In effect, the symbol-laden, story quilt was being ‘read’ for its beautifully rendered “complex stories and meanings” (Ball, 2008, p. 367) and was in turn inspiring others to tell their stories. Stitching outdoor educators’ life stories into a hand-sewn quilt soon became a potent pedagogical device destined to hold more ‘yarns’ and evoke deeper inquiry as it began to take on a life of its own.

Caron, a French-speaking environmental educator, had a desire to effect behavioural change around overt consumption due to its dire planetary consequences. Listening to the thesis ideas of others did not inspire her. She felt adrift in her process and was ready to leave the program early with a diploma instead of completing her graduate degree. After an initial conversation, I found out her first language was, in fact, photography. She told me she was moved by the work of a photographer (Segal, 2015) who shot people arranged with their garbage in a beautiful way. There it was. With permission from the artist to allow his work to inspire her design, Caron’s arts-based study consisted of five families agreeing to collect and

be photographed with their trash over a two-week period. Caron's stunning photos of the families and their refuse (complemented by her own iconic Burtynsky¹-like photos of outdoor markets, grocery store shelves, garbage cans, and used food containers) were blown up and framed for a gallery showing. Feedback from the public and the participating families who saw the show revealed the power that an aesthetic approach to consumption can have when we can see ourselves—our choices, our lives—revealed through our garbage. All the participants reported to Caron they had considered behavioural change at some level through this form of tangible inquiry. Caron's powers of observation, and her proclivity to see the world (in all its forms) as beautiful, offered a lens of inquiry that asked viewers to look *into* not just *at* what and how they consumed (resisting any shame or blame) and to more closely consider, even *befriend*, what it was they were trying to throw away. By performing research true to herself, this provided an opening for Caron to go on to design and teach a continuing education course on aesthetic consumption and to become a university guest lecturer sharing her unique method of inquiry to help inspire other students to take a leap of faith toward more personally authentic and applied research for a change.

Reflection

Theologian Frederick Buechner (1973) gave practical advice when he wrote, “our calling is where our deepest gladness and the world's hunger meet” (p. 118), where what we love and love to do is met by a

1. Canadian photographer/artist Edward Burtynsky is world-renowned for his large photoscapes of industrial sites that depict a kind of strange sensuousness and beauty juxtaposing the physical (and often disastrous) reality of these places.

world that yearns for just that thing. What if (re)search inquiry was designed not only to seek answers, but for the sake of what we love to do as we try to *live into the questions* themselves posed by the world (Rilke, 1934)? As teacher-supervisors keen to help students discern what deep values and patterns lie at the core of their true natures—values that may have been temporarily misplaced in their lives, subjugated by more traditional academic traditions—we can provide a kind of co-inquiry, an entry way of possibility to connect the student’s research with their identity and purpose for more novel contributions.

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A lifelong apprentice to nature and psyche, **Hilary Leighton** is an Associate Professor at Royal Roads University and an eco-psychotherapist and Registered Clinical Counsellor in private practice. Drawing upon the wisdom of ecopsychology, depth psychology, systems theory, and embodied, nature-and arts-based practices, she seeks ways to: extend the notion of the individual psyche to a world ensouled; inspire a whole-human, ecologically intelligent epistemology; and cultivate reconnection with a sentient Earth. She researches the ethical dilemma, suffering and loss of our relationships with wildness and contemplates learning as an initiatory journey toward maturation, regeneration and a more soulful way of belonging.

29. You Are Not Alone: The Online Conference

ANN-KATHRIN MCLEAN AND REBECCA WILSON-MAH

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Rationale

Research projects can be solitary journeys. The online conference learning activity is part of a Major Research Project (TRMN 640) course completed by graduate students in the Master of Arts (MA) in Tourism Management program at Royal Roads University. The Major Research Project (MRP) online conference and learning activity offers graduate students the opportunity to share their research project with a supportive and constructive audience of fellow students and faculty advisors. Organized at the midway point in a nine-month research project, students share their research in an online conference forum. Conducted fully online in an asynchronous format over a period of 10 days, the students are joined by their peer student colleagues and faculty advisors. The conference offers accessibility to students who balance their career and education and who live in different time zones. The online conference is both an active and applied activity that closely mirrors the activities associated with presenting a research project at a conference.

Prior to the introduction of the MRP online conference students had limited opportunity to share their research project with their cohort or with other faculty members. At the graduate level we claim that it is significant for students to receive opportunities that help them to disseminate the work they have been focused on over the last several months. Initially, our completion option for the Master of Arts in Tourism Management (MATM) program did not include an opportunity to share research knowledge with a wider audience. Since the MRP allows for a more flexible research approach and encourages non-traditional research designs, the active and applied format of the online conference supported an open exchange of ideas. For many students this activity also pushed them out of their comfort zone. The online conference created a community of peers who encouraged each other while sharing constructive suggestions and resources. Furthermore, understanding how to share and disseminate research findings to a wider audience is a valuable skill set to develop.

The online conference contributes to the achievement of the following course learning outcomes:

1. Effectively gathers, analyzes, synthesizes, prepares, and presents written materials, accurately utilizing the American Psychological Association (APA) reference method.
2. Applies effective speaking, writing, listening, and feedback skills in online and face-to-face activities.
3. Engages in meaningful self-assessment and self-awareness to enhance leadership skills, positive relationships, and professional goals.

The students are given the following instructions for the online conference:

1. Develop a visual voice-over presentation to summarize your research project to an academic and student audience.
2. Communicate the overall importance of your research to a

wider audience in a voice-over presentation.

3. Practice thinking about and explaining the objective of the research, the research design, research methodology and methods, theory or concepts related to the study, and progress made to date.
4. Use constructive feedback (suggestions, acknowledgements, resources, questions, etc.) from peers and at least one other faculty member to strengthen your research plan.
5. Give, receive, and respond to constructive feedback on your research plan appropriately and constructively.

Overview

Student Participation

To organize an online conference the following instructions outlining six key steps will guide your students through the process. It is important to emphasize the expectation for constructive student peer feedback in Steps 6 and 7. Gentle early reminders to those students who are slow to participate in Steps 6 and 7 are typically effective.

Step 1: Submit a 200-word abstract, along with the working title of your research.

Step 2: Plan out an eight-minute voice-over presentation following the student presentation checklist (Appendix B). Note that faculty advisors use the criteria in the checklist to provide their feedback.

Step 3: Discuss your planned voice-over presentation with your faculty advisor and review and adjust as necessary.

Step 4: Record your voice over the presentation. Name your file with your first name and last name.

Step 5: Upload your recorded presentation to the class online forum (we give students a three-day window to complete this step.)

Step 6: During the online conference, review a minimum of two presentations from your peers and share your constructive feedback in this forum (give the students and faculty advisors 10 days for this step.)

Step 7: During the online conference, read and consider the feedback you receive in the forum. Respond to this feedback constructively in the forum. If you would like further clarification or if you would like to explain your research decisions this is the opportunity to do so. Consider: What is on your mind? What are you unsure about? Are you having any roadblocks along the way?

Faculty Advisor Participation

Faculty advisors have an important role in the online conference. Their involvement includes 1) supporting their student(s) as needed with the development of a voice over presentation; 2) actively participating in the forum; and 3) providing written feedback to two students (as assigned) who they are not advising. Formative in approach, faculty feedback is specific and descriptive (Fluckiger et al. 2010) and follows a simple task-focused presentation checklist (Appendix B).

Reflection

In terms of next steps, we hope to build on the success of the 2020 MRP online conference in future iterations of TRMN 640. The discussion forums have been essential in supporting students to enhance their research projects. The engagement in the forums allowed for a continuous exchange of ideas between students and

faculty, something that is also referred to as “critical friend” theory in the literature (Özek et al., 2012). The critical friend theory not only offers space for constructive feedback and comments, but also “makes it possible to gain immediate access to a colleague’s expertise and feedback, which can facilitate continued professional development” (Özek et al., 2012, p. 70).

This activity gave students the space to reflect on, and speak about, their own research practices. This is linked with an active engagement in a critical friend approach “from the self-study lens, ‘critical friends’ are those who build trusted relationships and share ideas” (Chao, 2018, p. 44). Besides the sharing of ideas, the critical friend approach invites deeper self-reflection and a chance to be proactive in successfully communicating ideas about one’s work (Özek et al., 2012).

The idea and importance of self-reflection are echoed by Chao (2018), who noted that “self-reflection is a lifelong commitment,” (p. 44). and specifically, as a researcher, an ongoing process. The online conference was an essential element of the students’ final element of their MA in Tourism Management research journey. Taking the opportunity to engage in reflection was useful not only to deepen their viewpoints on their project but also their academic journey overall.

Feedback about the activity was retrieved informally via email conversations and the online class forum, and formally via a short online survey. The goal was to provide an opportunity for students to share their opinion about the online conference and in relation to the development of their final research project. The feedback we received from the survey did align with the teaching plan for the online conference and the learning outcomes established for the activity. Overall, the following learning focuses were highlighted the most:

- “developing self-awareness of my skills as a researcher,”
- “reflecting on my progress and making adjustments,”
- “reviewing feedback and considering questions,” and

- “effectively discussing the study with others.”

Students made two suggestions that will be incorporated into future online conferences. Firstly, there is potential to further explore student engagement in learning with, and from, other students during the research project. The students actively engaged with one another in the forums and provided supportive and constructive ideas, suggestions, and comments. One student suggested the development of topic clusters, where students and faculty advisors will be grouped together in smaller clusters of six to eight students. This suggestion will be explored for the next MRP online conference.

Secondly, students found it challenging to share all they want to share in five to eight minutes. The students may need more guidance on how to distill their research project into an eight-minute summary.

In summary, the value of the online conference mid-way through a research project course was supported by the student feedback. The students participated in sharing formative feedback with one another. Formative approaches are used “to encourage and progressively develop the learners’ ability to identify, structure and articulate questions about their own growing understanding” (Robinson & Udall, 2006, p. 93). Furthermore, the connection with other faculty advisors (outside the faculty advisor assigned to the student) added value to the students’ experiences. Faculty participation and active involvement is critical to the success of an online conference. The authors also suggest faculty should be involved early, when the forum opens, as this helps to build momentum and active participation.

The online conference supported applied and active learning approaches and peer learning. Misseyanni et al. (2018) explained “active learning empowers learners, as it helps them to develop more responsibility, participate in the construction of knowledge, and challenge mainstream thinking and opinions” (p. 2).

Understanding how to share and disseminate your research findings to a wider audience is a valuable skill to develop. Not only did the MRP online conference engage our students through a graduate level course, but also mirrored many elements from both Royal Roads University's Learning Teaching and Research Model.

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Appendix A: MRP Online Conference Unit in Moodle

MRP Online Conference (MRP OC)

Monday, September 21st - Friday, October 2nd

-  Step by Step Document Participating in the MRP OC
-  Background Information for the MATM OC Presentations (Sept 21 to Oct 2, 2020)
-  Student Checklist
-  MRP OC - Abstracts & Notes for Submission (submit by Sept 14th)
-  Discussion Forum - Opens Sept 21 to Oct 2
-  MRP OC Student Abstracts
126.7KB PDF document
-  Student and Faculty Advisor List for MRP Conference
-  Word Version of Student Checklist/Faculty Advisor Feedback Form in Word
18.3KB Word 2007 document

Appendix B: Student Presentation Checklist

MRP Online Conference

Student Name:

Faculty Name:

STUDENT'S PRESENTATION CHECKLIST.

After reviewing your posted presentation your faculty advisor and

one additional advisor will give you feedback using the checklist below. This feedback will be emailed directly to you using your Royal Roads email account.

ASSESSMENT CRITERIA	CLEARLY ADDRESSED	PARTIALLY ADDRESSED	NOT ADDRESSED
Presentation is organized and progression is logical			
Research design/approach is explained			
The significance of the study is stated			
Shares most useful secondary sources			
Discussion of theoretical framework (if applicable to your research)			
Provides an overview of your research method(s).			
Ethical Review – share if this is complete and any information about the approval process that is relevant.			
Progress update with data collection			
Next steps for the project...			
Additional Comments for the Student:			

Appendix C: Student Contribution Example

Student Abstract- Deepa Sudame (used with permission)

“A study of the environmental impacts of cruise ships along the coastal areas of Vancouver Island, British Columbia: Cruising through stakeholder perceptions.”

This research explores the environmental impacts of cruise ships on the coastal regions of Vancouver Island as perceived by the key stakeholders in the region. By examining a range of stakeholder perspectives, it is hoped the study will offer significant contributions to future discussions for an environmentally sustainable cruise industry.

The cruise industry in North America has experienced significant growth in recent years and, regardless of the Covid-19 pandemic it is expected to have a positive outlook for the future. However, this growth has not been free of consequences, and many stakeholders have expressed concern, particularly over the environmental impacts of this industry's increasing popularity.

The pristine waters of the Georgia Strait and Island Passage offer cruises the experience of a stunning coastal route that runs along the west coast of B.C. With growing popularity and carrying a huge ecological footprint, cruise ships are considered to cause negative environmental impact and hence there is a need to review its sustainability and evaluate its impact from portside stakeholders.

The researcher will conduct qualitative, semi-structured interviews with 4-5 key stakeholders who are employed by, or whose lifestyles are connected to/affected by cruise tourism in the region. These include representatives from a major port in the area, environmental interest groups, and a local neighbourhood association. *The study is currently in the data collection and literature review phase.*

It is anticipated the research phase will reveal perceived environmental impacts associated with cruising from the

discussions among the key stakeholders. Information of this nature will enable the researcher to draw conclusions and potentially offer some recommendations on future discussions of the environmental sustainability of cruise tourism in the region.

Appendix D: Student Presentation Example



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://pressbooks.bccampus.ca/activelearningforrealworldinquiry/?p=90#oembed-1>

Example Mini Pilot Research Study – This YouTube video of a recorded presentation of a mini pilot research study is provided with the consent of a student, Matthew Shephard (2020)

Appendix E: Student Feedback Survey

The feedback survey was structured as follows:

Survey Question Ideas for MRP student surveys:

Between September 21st and October 2nd, you participated in an online conference as part of your Major Research Project course. You are invited to share your feedback on the Major Research Project Online Conference (MRP OC) with the MATM program. This short

survey will take no longer than 10 minutes. Your feedback will help us inform us of the outcomes of this new initiative.

As with course surveys, your feedback will be used solely to evaluate this activity.

1) Please rate how the online conference for your MRP contributed to your development as a researcher in the following areas:

- Data collection
- Data analysis
- Drawing conclusions
- Preparing a voice over PowerPoint
- Applying APA referencing
- Effectively discussing the study with others
- Reviewing feedback and considering questions
- Reflecting on my progress and making adjustments
- Developing self awareness as my skills as a researcher

2) Do you have any suggestions for the next MRP?

3) Is there anything else you would like to share with us?

All the very best and wishing you future success as a researcher and the future application of these skills in your career.

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SECTION VII

ENGAGING STUDENTS THROUGH AND IN RESEARCH METHODS COURSES

30. The Research Methods Course as a Model for Thesis Research

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For the things we have to learn before we can do them, we learn by doing them (Aristotle, 1994/250 BCE, para. 2).

Rationale

While I have no authority to cite other than my own experience, I'll make the claim that we tend to carry some anxiety about stepping into new experiences, ones which we might feel we are unprepared for. That is, in my experience, what a great number of masters' students feel when they step into their thesis research; they are nervous and aware of their own inadequacy.

When I conceptualized the sole research methods course for Royal Roads University's (RRU) new (in 2003) Master of Arts (MA) program in Environmental Education and Communications (EEC), I was concerned that my course not be a course about research methods, but instead be a course that allowed the students to do research using a variety of methods.

While a survey of research methods could have been one way to

organize the course, I chose to take a different tack, approaching the course from the perspective of doing research rather than studying research methods. I felt that our students, most of whom are returning to school years after they completed their undergraduate programs, might be somewhat anxious as they enter their thesis research; for the most part, they as new grad students would never have done an original research project. My hope was that if we could present an anxiety-inducing experience in the research methods course and then try to ensure that everyone got through that to an experiential understanding of what research involves, they would then be more emotionally equipped to go into the uncertainty of carrying out their own thesis research. They would know they had lived through the anxiety-inducing experiences of their in-class research project and had come out the other side, relatively intact.

My goal in the course was to offer many (if not all) of the pieces of what it takes to do a research project in the context of both qualitative (QUAL) and quantitative (QUAN) paradigms, without getting too bogged down in particular research methods or philosophical investigations of theory. My assumption was that the research method a student would use in their own thesis would be sorted out between student and thesis committee, and the student would have to commit to learning about their particular method as part of the work of developing a proposal. My goal was simply to give them an experience of dipping their toes into the two different approaches to research.

I tried to see the research methods course as a meaningful initiation (Peters, 1964) into all the aspects of doing a master's thesis, including preparing an ethics review, deciding on research approaches to pre-constructed research questions, then doing the two small research projects (QUAN and QUAL), and most of all, living with the uncertainty that is the hallmark of asking original questions. Of course, what was missing in this was having the student develop their own research question. While time would not

allow this in a 10-week course, I knew they would shortly afterwards be creating that question for their own research project.

Overview

The first part of the course was a relatively straightforward assignment which asked the students to compare and contrast attributes of the two dominant paradigms. After a few years, I added a mixed methods paper (Sosu et al., 2008), one which demonstrated a very nice integration of both QUAL and QUAN data to the theme of my program. Reading a good (and relatively straightforward) QUAN (e.g., Vaughan et al., 2003) and an engaging QUAL (e.g., Kovan & Dirkx, 2003) article within the EEC domain, students carried out a comparison of attributes like:

- what kinds of questions they were asking;
- what were the methods used to answer the questions;
- what was the nature of the sample or population studied; and
- what were the ways that answers were justified, and how was reliability and validity demonstrated.

For students with science backgrounds, my first serious problem was finding a way to convince them that QUAL approaches were a legitimate way of doing research and they shouldn't simply discount this methodology out of hand. I also wanted our non-science students to see that QUAN research was not an impossibility, and even though they might believe that "I don't like numbers," (no one was asking them to physically do the math; the computer does the calculations) but they did have to be able to choose a meaningful statistical test and then interpret the findings.

Another anxiety-inducing part of the research process is that of creating an ethical review for a Research Ethics Board, and so I wanted to include the creation of this review as part of my course.

All students had to go through the online tutorial that introduces the Canadian *Tri-Council Policy Statement: Ethical Conduct for Research Involving Human Subjects*. Following the tutorial, the students worked in teams to complete the RRU Research Ethics Board's *Request for Ethical Review for Research Involving Humans*. To keep things interesting, I assigned them Stanley Milgram's famous and controversial study of human obedience (Milgram, 1974) as the basis for their review, having to complete the REB document as if they were Milgram trying to get approval to do his study. This was a challenging exercise and gave opportunity for both discussion about the creation of an ethical review, and the ethics of research broadly-writ.

The last and longest part of the course involved carrying out two projects: a team project using QUAN methods, and an individual one using QUAL methods. At times, the projects were connected as the interviewee in the QUAL might have been a person surveyed in the QUAN project. In all cases, the students had to generate data and then work to make sense out of it. Given the time limitations, it wasn't realistic for the students to go through the full process of developing a research question and then designing the study; but collecting data and carrying out an analysis seemed to be enough to give the students a feel for the aspects that, I expected, carry the greatest worry for them.

Using information in the textbooks adopted over the years (Cohen et al., 2007; Leedy & Ormrod, 2013; Robson, 2011), augmented by Trochim's (2022) *Research Methods Knowledge Base* website and my own materials, I tried to ensure that the students had enough basic information to be able to use tools like VassarStats (Lowry, 2021) to do basic QUAN analyses. Projects would have students compare data using relatively simple statistical tools such as the t-test or Mann-Whitney U, or look at relationships between data using Pearson's r or Spearman's r_s . Nothing complicated was needed to carry out the QUAN study, which most often involved the utilization of an existing survey instrument that was easy to adapt for our purposes. When the course was being run online, the students

distributed surveys to contacts, and later used online survey tools to collect data; when it was done face to face, we engaged in projects at the Royal BC Museum that involved observational data collection and some survey data.

The QUAL study involved the student carrying out a single in-depth interview. While the topics regularly changed, the students were given a general theme or research area that they could work with. The point was for them to have the opportunity to experience carrying out a research interview, transcribing the interview, and then looking for themes in the transcribed data. We used a variety of approaches, including introducing students to the approach developed by Wengraf (2007).

Reflections

As noted, I could have designed a course that presented a theory-based approach to learning about research, and which might have given students a chance to be exposed to a far larger range of approaches than I offered. However, I chose to provide the students with a set of problems which, I hoped, would lead to enriching experiences. For example, I didn't just talk about research ethics but had students create a challenging request for ethical review. Rather than reviewing the mathematical aspects of statistics, I chose to put the students in a situation where they themselves would generate data and then work with it using relatively simple statistical tools in order to see that, even if they weren't 'good' with math, they could do QUAN research. And those who thought that QUAL research would be easy to do found out just how hard it is to analyze thousands of words.

The course got mixed reviews from the students after it was done, but as I noted, the course was meant to induce some discomfort; my concern was not high course evaluation scores, but helping the students to be ready to start their thesis work. The kinds of

things that inspired me were student reactions where I could see an “opening” of their presuppositions about what legitimate research looked like. For example, in my first run of the class in 2004, I became so excited that I called my wife to my computer to show her an online posting where one of my very strong science-focused students wrote that she now saw that QUAL approaches were not simply different from the QUAN approaches she was used to, but that you could ask different and equally important question when using QUAL approaches.

Along with Aristotle, I feel that the way you learn about research is by doing research. More than many things we offer at a university, engaging in a research project becomes an apprenticeship in learning a new craft. Crafts are historically entered into by novices starting with simple tools and projects and moving towards larger and more complex ones within the social context of working with other apprentices all under the guidance of “masters.”

Lave and Wenger (1991) note “learners inevitably participate in communities of practitioners and that the mastery of knowledge and skill requires newcomers to move toward full participation in the sociocultural practices of a community” (p. 29). I saw this course as the first step towards moving into that “full participation” that would continue into and through their graduate thesis process.

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31. Mapping the Action-Inquiry Capstone Process

NIELS AGGER-GUPTA AND REBECCA NELEMS

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The single hardest lesson I've ever had to learn is that the greater, grander plan is not mine to create or know.... When I surrender outcome, all things good and pure and peaceful come to me. My job is to choose what appears. Easy to say but hard to do, to get out of the way enough to allow the energy to flow (Wagamese, 2016, p.64).

Rationale

How might students sequence activities to lead an effective action-oriented capstone inquiry? For the Royal Roads University's School of Leadership Studies (SoLS) Master of Arts in Leadership (MAL) capstone, students choose to conduct a real-world, action-oriented, collaborative change research project or thesis with a sponsoring organization or community to co-generate positive organizational and societal outcome. The action researcher must

design methods along with an emergent process that fosters relationship-building across a diversity of organizational stakeholders through the sharing of stories, perspectives, and hopes for the future whilst engaging them in collaborative data analysis, identifying next-step strategies, outcomes, and associated knowledge products.

What is a successful design for this process, and who needs to be involved with which elements? How can students plan for the emergent and uncharted path ahead? In their second year, students participate in a two-week residency involving a course of study that delves into inquiry methods and capstone planning. Presented halfway through this course, the *Mapping the Capstone Journey* session supports students to visualize, map, and conceptualize the unique terrains, focus, and processes by which they will engage their partner organization and other stakeholders in their inquiry following their residency. This session marks the first time students consider their entire process—either nine months (project) or 12 months (thesis)—and aims to deepen their understanding of collaboratively designed change (Barrett et al, 1995; Gergen & Gergen, 2015; Gergen & Hersted, 2016; Hersted et. al., 2019).

At the end of the session, students have generated an initial visual map of their process and receive initial feedback from their peers and faculty on their design. Students subsequently refine their maps and present them to faculty and peers for further formative feedback. The revised map is included in students' outline of their capstone proposal, and is assessed based on a range of competencies including: selecting a leadership approach appropriate to the partner organization's change context; creating a systematic inquiry that leads to learning and evidence-based action for positive change at the organizational level; and design of a coherent logic and sequence of individual and group methods and engaged actions appropriate and understandable for the intended actors.

Part of the design sequence involves the logistics of when, how, and with whom the data analysis for each of the included methods

are addressed. Is analyzing data a researcher-focused activity, shared with a ‘research team,’ or begun by participants in a ‘harvesting’ activity at the end of the methods? While there are many decisions to be made by the student, the point of this *mapping* activity is for the student to begin by generating a visualization of their whole potential process, no matter how preliminary this may seem at this stage of their capstone design. Methods may include interviews (Roulston, 2010), surveys (Fowler, 2009), focus groups (Morgan, 2019), learning circles (Baldwin, 1998), group methods such as World Café (Brown & Isaacs, 2005), Open Space (Owen, 2008), Liberating Structures approaches (Lipmanowicz & Griffin, 2016), or arts-based methods (Bishop et al., 2017; Etmanski et al., 2016), among other possible approaches. In addition, students are invited to overlay a particular epistemological stance, whether from Appreciative Inquiry (Agger-Gupta & Perodeau, 2017; Reed, 2007; Stavros & Torres, 2018), Indigenous and decolonial methodologies (Kovach, 2010; Smith 2016; Wilson 2008), anti-oppressive (Potts & Brown, 2015), or other approaches to change. Some of these approaches incorporate multiple methods in the change process, such as the 5-D Appreciative Inquiry process (Watkins et al, 2011) or Scenario Planning (Kahane, 2012). Students usually only have enough time in organizational action research to help stakeholders create alignment, as described in the Action Research Engagement model (Rowe et al., 2013). Many students more used to more conventional approaches to research have questions about how change might occur through their project, and this activity and the subsequent dialogue helps clarify this.

However, leadership capstone projects can have deeply political dimensions: projects may be controversial within an organization, and actors may be brought together in new ways in the process. Additionally, projects within one’s own organization can create a range of “power-over” and conflict of interest challenges that students must creatively navigate, sometimes by using a third-party facilitator. The intent of the SoLS principle of “leadership as engagement” (Harris & Agger-Gupta, 2015) applied to the capstone

on stakeholder ownership of the change, can be challenging in tightly hierarchical organizations. Zimmerman and her colleagues (2013) demonstrated greater commitment and ownership of the change design when changes are co-developed with the front-line stakeholders who will implement the change. Creating stakeholder ownership requires ceding control of the process, meaning students cannot simply use individual methods to gain knowledge from stakeholders and then present a report back, as this misses the essential step of stakeholders engaging with one another to determine their own collective next steps. At some point in the process, students must convene and hold spaces for a diversity of stakeholders in the partner organization to come together to learn about each other's experiences and aspirations, and collaboratively generate emergent next-step planning for change.

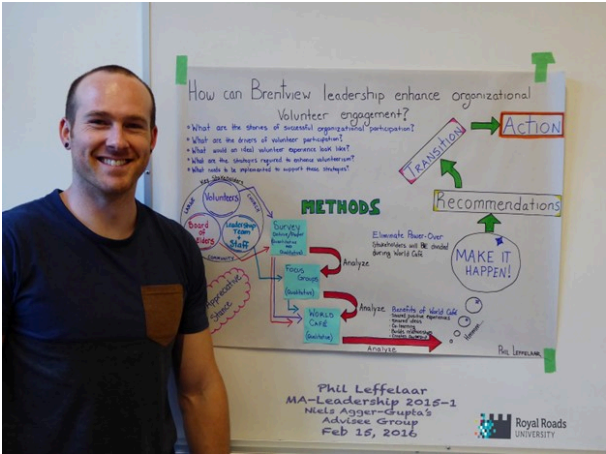
Overview and Observations

The session starts with a land acknowledgement, followed by a short presentation on mapping, including examples of maps to support students' own capstone journey visualizations. Students are asked to create a visual including: their name; their partner organization; their inquiry team; their primary inquiry question and subquestions; the overall project goal; participants and stakeholders; their choice of the sequence of events including their inquiry methods, components, and/or steps in their capstone journey; and an approximate timeline.

Students commence by discussing their sequence of activities in their learning partner groups of two or three students before working alone on their design for an hour. Students with questions may come back to the main room to ask for help from faculty. Students use pencil, pen, coloured markers, crayons, and sticky notes, allowing them to move identified methods around on the flipchart paper.

At the end of the hour, students in the in-person residency return to the classroom and post their flipchart posters on the walls and windows in the room. We then commence what we call a ‘gallery walk’ sharing session, with students and faculty circulating physically around the room, half the class at a time, for about 30 minutes each, to engage in dialogue about the ‘maps’ with the students who have remained with their posters. An example of the kind of flipchart poster we typically see is seen in Figure 1, which depicts MAL student Phil Leffelaar’s flow chart of his intended capstone journey, as part of an in-person cohort in 2016.

Figure 1
Example of a flipchart poster



Photographer: Niels Agger-Gupta . Phil Leffelaar, who appears in this photo, has given his consent for including this photograph in this publication.

The sudden restrictions imposed by COVID-19 in 2020 required moving the *Mapping the Capstone Journey* session into an online version. In keeping with SoLS’ core value of “orientation to possibility” (Harris & Agger-Gupta, 2015), faculty and students co-creatively re-designed this activity for online engagement. In this version, students use what is at hand in their location to support their visualization of the process and then take a snapshot or upload an image of their draft map into an online whiteboard application

that allows the class to view and comment on each other's posts. Requiring more detail than a simple whiteboard permits, we have used the application called, *Padlet*, for this 'gallery walk' activity, but other apps, such as *Mural*, *Miro*, or *Stormboard* could also serve the same purpose. The feedback, from both student colleagues and faculty in the app, enables students to reconsider their own plans based on the feedback they are seeing and giving to others and allows for what Heifetz would call "balcony view" insights into their own plans (Heifetz et al., 2009, pp. 7-8).

Online students went well beyond the bounds of the typical flip-chart page, with one student arranging images, objects, and words on a physical shelf in their home (see Figure 2). Students commonly created visual art. The online space enabled much greater depth and breadth of engagement across students and faculty who post and view the maps online, leave each other comments, ask, and respond, to questions, and then asynchronously iterate their maps long after the session ends. Starting with learning partner breakout groups before moving to individual work, the online session takes about an hour less time than the in-person version. MA-L student Celestine Eagle's photo of her bookshelves is one example of the kind of capstone map, created as part of an online cohort in May 2020 (Figure 2).

Figure 2

Example of a student's map photo shared online



celestine Eagle, MAL - May 15, 2020

MAL student, Celestine Eagle, is the photographer. Celestine has given her permission to include this photograph in this publication.

Reflections, Implications, and Conclusion

Looking forward you constantly acquire moments of arrival, moments of realization, moments of discovery. The wind blows your hair back and you are greeted by what you have never seen before (Solnit, 2006, pp. 22-23).

Maps are sometimes thought of as a tool that was historically used for colonization and empire building. However, maps have been created and used by all cultures around the world and across time. From mapping bird song distributions, Indigenous relationships with the land, or human migrations, cartography can be used in a multitude of ways that reflect a diversity of worldviews and methodologies. The mapping activity is intended to help students visualize the outline of the terrains they hope to traverse, the

stakeholders they hope to engage, and the processes and sequence of methods they hope to use in their journeys. Creating a map is less about knowing the places they might find on the journey and more about clarifying intended trajectories and processes to prepare for their journeys into emergence.

This activity allows students to take the exercise of mapping their change sequence to greater depth with respect to ensuring strong relational accountability, attention to process, and an awareness of ethical considerations, whilst orienting students towards the emergent nature of leading change projects within organizations and systems. In these ways, the activity partakes in what is increasingly being framed as decolonial mapping, or the reclaiming of the map-making process from its historical use to extract and expropriate knowledge and ownership. As Rose-Redwood et al., (2020) note, “mapping plays an important ontological role in the making, unmaking, and remaking of ‘worlds’” (p. 152). At the conclusion of this half-day activity, students are energized and excited about finally being able to see what their capstone inquiry could look like, and the students generally identify this activity as one of their highlights from their second residency. Students also share their maps with their organizational partners to better explain and support their work of engaging the relevant organizational systems.

By creating a capstone journey map, leadership students in the MAL program are engaging in a form of decolonial mapping rather than using maps to lay claim to a terrain of knowledge, as maps were used in the colonial expansion of empire-building. The maps are centred on process, relationships, and the means of meaningful dialogical engagement by which the journey of empowering and working collaboratively with stakeholders will be undertaken. In this way, the maps support students to let go of outcome, as Wagamese (2016) references, in service of emergence, relationship and collaborative design. The engaged participants might be stakeholders to an issue or members of a team, organization, or community, but the focus here is on building relationships and

increasing knowledge about each other, creating an opportunity for the group to think together, which then allows for collective design for a co-created change. The feedback students gain from each other also helps them see how others are conceptualizing their capstones. While this energizing activity is about an action-oriented capstone, the process creates a systems-thinking temporal guide that allows students to be fully present to what emerges along their journey. Ultimately, the temporal map is a plan open to revision based on what the student finds out about the community of interest and their needs.

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Acknowledgements

The authors gratefully acknowledge the Xwsepsum, Ləkʷəŋən, and W̱SÁNEĆ ancestors and families on whose lands we live and work. Thanks to SoLS Associate faculty colleague, Dr. Phil Cady, who has also worked on delivering this seminar and who shared the photo of Celestine Eagle's bookshelf map (with her permission). Thanks to Phil Leffelaar for his permission to share my photo of his capstone map. Thank you to other faculty and staff who have helped in delivering this workshop, and to Lila Linell, for finding space and art supplies for the on-campus version of this activity.

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Rebecca Nelems. As a sixth-generation settler of Irish descent on Coast Salish and Straits Salish lands, I strive to be accountable in all that I do with the Indigenous nations and families on whose lands my family lives. I am Associate Faculty with the School of Leadership Studies and a Scholar Practitioner that advises leaders and organizations around the world on engaged, action-oriented change projects. My academic work focuses on eco-social empathy, decolonizing research, and relational leadership.

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where RRU is also based. With children who are seventh generation guests on these lands, living in ways that are relationally accountable to and with the Indigenous peoples and nations on whose lands we reside is core to all aspects of my personal and professional life. I strive to address the historical and ongoing structures of colonialism through my scholarship on eco-social justice, relational leadership and decolonizing research methodologies. I also strive to do this through my everyday relationships and actions, and creating spaces for sympogogy in academic and non-academic settings. With an orientation of lifelong learning and humility, I am deeply honoured by the teachings that Indigenous communities, colleagues and friends share with me. I am Associate Faculty with the School of Leadership Studies at RRU.

32. An Entrepreneurial Approach to Teaching Research

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In its most basic form, research involves tackling possible solutions to a perceived problem. It is a systematic investigation to validate, negate or establish facts, reach conclusions, and suggest conceivable resolutions (Creswell, 2015). One of the continuing challenges of teaching and undertaking qualitative research is interpretive bias. Leedy and Ormrod (2010) state “Assumptions are so basic that, without them, the research problem itself could not exist” (p. 62). Ongoing challenges for instructors teaching research methodology include motivating students to actively undertake primary research, helping them define a problem worth researching, having them authentically engage in the process by leveraging each learner’s natural abilities while managing bias, and paying attention to qualitative trustworthiness and quantitative validity. The entrepreneurial thinking approach presented in this paper assists faculty members in helping their students overcome the fear of doing research, offers a learner-centered systematic approach to the planning of their studies, and encourages learners to focus on the impact of their research undertakings.

Rationale

The entrepreneurial mindset embraces evidence-based solution-finding that uses a learning-centered approach to incorporate principles of innovation and design thinking to deconstruct difficult, multi-faceted problems. As an emerging signature pedagogy, an entrepreneurial thinking approach can be applied for teaching research in a post-secondary context within a framework which recognizes the principles of pedagogy, andragogy, and heutagogy (Blaschke & Hase, 2015); and strengthens pedagogical value (Egizii, 2021) connected to a self-directed, highly experiential learning activity. As such, it incorporates: the instructor taking on a facilitation role and managing the pace (surface structure), strategic instruction and intentional assessment such that the student discovers how to apply their learning to their professional discipline (deep structure), and the opportunity to apply the moral and ethical standards associated with that discipline (implicit structure) (Lock et al., 2018). Specifically connected to research methodology, the approach embraces the significance of problem identification, data collection, data analysis, added value, and application of outcomes.

Overview

Faced with teaching a portfolio of courses within a condensed undergraduate program which involved the need for important primary research from learners with little or no research methodology background, I experimented with different pedagogical approaches that combined educational theory with discipline-specific theory. In so doing, I realized the constructs that supported an entrepreneurial mindset were similar to those required for conducting any type of primary research connected to value creation.

From a pedagogical perspective, my experience in the classroom reinforced my sense that adult students are highly motivated by being part of a learning community that respects them as co-creators (Mezirow, 1991). This involves integration of their work and life experiences into their learning and the direct application of activities to their lives and to the problems they perceived as being important. To motivate them to fully engage in the research that needed to be completed, they needed to both understand and co-construct the research protocol. That process involved the reciprocal giving of knowledge (sharing of feedback, suggestions, ways of knowing) and taking of knowledge (learning from others' perspectives, receiving feedback, sharing struggles) between instructor and student, and between learners. At a curricular level, it involved learning what to tackle (amongst the many problems that need to be solved), if and how that problem was 'researchable' (i.e., quantifying the problem) and thinking ahead to what was driving the need to research something. Qualitative research is a human-centred endeavor that requires empathy and synthesis. Triangulating and strengthening qualitative findings with quantitative support appears to be an approach students understand and can be encouraged to try.

Experimentation with a variety of pedagogies led me to realize reframing thinking is one way to broaden a learner's own meta-cognition of how they learn, and what works best for them, as individuals. The psychographic profiles of the adult learners enrolled in my undergraduate Commerce courses are individuals who are: slightly older than traditional undergraduate entrants (average age is mid-30s), have significant family commitments (children, aging parents, or other care commitments), come from diverse cultural and socioeconomic backgrounds, and work full-time. The challenge I faced was to design intellectually engaging, experiential learning that addressed curricular requirements, respected the constraints and needs of our adult learners, and provided the highest pedagogical value. The learning outcomes I was hoping to achieve included evidence of: (a) problem-

solving—specifically a demonstrated ability to apply both qualitative and quantitative research methodology to guide the selection of research methods; (b) critical thinking—specifically a demonstrated ability to use a broad range of research methods and conceptual models to make judgements and draw conclusions; and (c) ensuring trustworthiness and validity—specifically demonstration of self-reflection and metacognition that indicated they were questioning their own frames of reference and biases and incorporating the viewpoints of others, including their team members and participants of their research.

Although tested inside a business program, the approach shared here can be generalized to any social science or humanities-based discipline. It is founded on the premise that anyone who has ever “bricolaged” (Lévi-Strauss, 1967) a stop-gap solution to any problem is thinking like an entrepreneur. In other words, most of us have “ma[de] do by applying combinations of resources at hand to new problems and opportunities” (Baker & Nelson, 2005, p. 333). Entrepreneurs are bricoleurs and innovators who are constantly problem-solving. In an entrepreneur’s world, value is a reciprocal requirement. It is for the best interest of all stakeholders that solutions provide the highest benefit possible (Lane, 2012). This is particularly so for social entrepreneurs. Understanding how entrepreneurial, innovative thinkers solve niggly problems by seeking feedback from their stakeholders, analysing this information objectively, and continually asking ‘why’ emulates the research process in an experientially refreshing way.

The conceptual framework that underpins the approach is presented in Appendix A. The traditional process is juxtaposed against the natural bricolage process used by entrepreneurs exploring the idea-to-concept stage of their potential market solutions. There are critical decision-making points along the way. These decision points stand whether the research process is conducted within teams or by individuals.

The approach shared here was used inside a one-week immersive applied business challenge connected to an undergraduate

commerce degree. The course took place over seven days and was assessed as a team project. There were four to five students per team. A description of the activity, learning objectives, pre- and post-assessment checks, and scaffolded assignments are presented in Appendix B. The final grade was comprised of assignment scores (using a weighted analytic rubric, Appendix C) plus participation (observed through captured work on shared workspaces and recordings of online meetings). I met with each group at a time of their choosing for daily check-ins in the online meeting space. The teams would walk me through their work, after which I provided brief feedback, reviewed rubrics, and recommended guidelines. I would grade their work each evening and return those grades within a 12-hour period.

The groups decided how they were going to manage the work, when they would work synchronously (in their online meeting rooms provided by the university) and when they would work asynchronously, on their own. The most important critical decision was deciding when decisions needed to be made and working through that decision-making process. Formative feedback was provided if requested. I was available via mobile text for ‘emergency pop-ins,’ which happened once for most teams, and two to three times for the occasional group. Pop-ins took, on average, about 30 minutes to work through. Often, it was because a team was stuck in bias mode, had gone down a rabbit hole, or were not using the decision-making matrices (Appendix D). A few re-directing questions usually got them back on track.

The daily check-ins, formative feedback, knowledge they could call on me and get assistance within one to two hours of contact, and the weighted rubrics moved the teams steadily beyond their comfort zones each day. The need for support decreased as the confidence levels increased. The first few days were busy and long for all of us; they got shorter, more fun, and more energized as the week progressed.

Reflections

The lessons presented to me through this activity have been many. My continued iterative work with the framework has validated my belief in the power of teachers as enablers, facilitators, and designers of learning. Within an adult learning environment, we all grow when we share accountability and responsibility for our mutual learning. For that, I am grateful. I have learned the risks, for both teacher and learner, are worth the reward. Letting go of the control and the ego can be difficult for learners when the stakes are high, and that responsibility rests on the shoulder of the instructor. Some students remain uncomfortable with the unstructured ambiguity of the entrepreneurial mindset. Gently steered into places where they gained unexpected value, not from process, but by nature of following their natural tendencies, curiosities and learning styles, students eventually recognized an organized structure within the chaos. With each application of this activity, I continue to experiment with different topics, revise and tweak the decision-making matrices and the rubrics, and monitor my level of involvement. With respect for the sharing of voice, I will let the learners speak to the impact of this learning, for themselves.

My biggest challenge was conducting the primary research. I felt a little out of my element as my research experience has mostly been secondary. Once I got more comfortable it became easier. Knowing that observation is a form of primary research made it easier to gather information. The process was transformational for me (Anonymous student evaluations, [2020]).

Over a three-year span, over 80 per cent of learners ($n = 142$) who engaged in this activity continued to demonstrate these skills in several of my subsequent courses.

My biggest takeaway is – the whole process pretty much! From getting that first idea, testing and going through the build measure loop, primary and secondary research. To

trust the processes, and that the work is worth the time and effort for what is revealed Anonymous student evaluations, [2020]).

These lightbulb moments, I would hope, is what every instructor waits for.

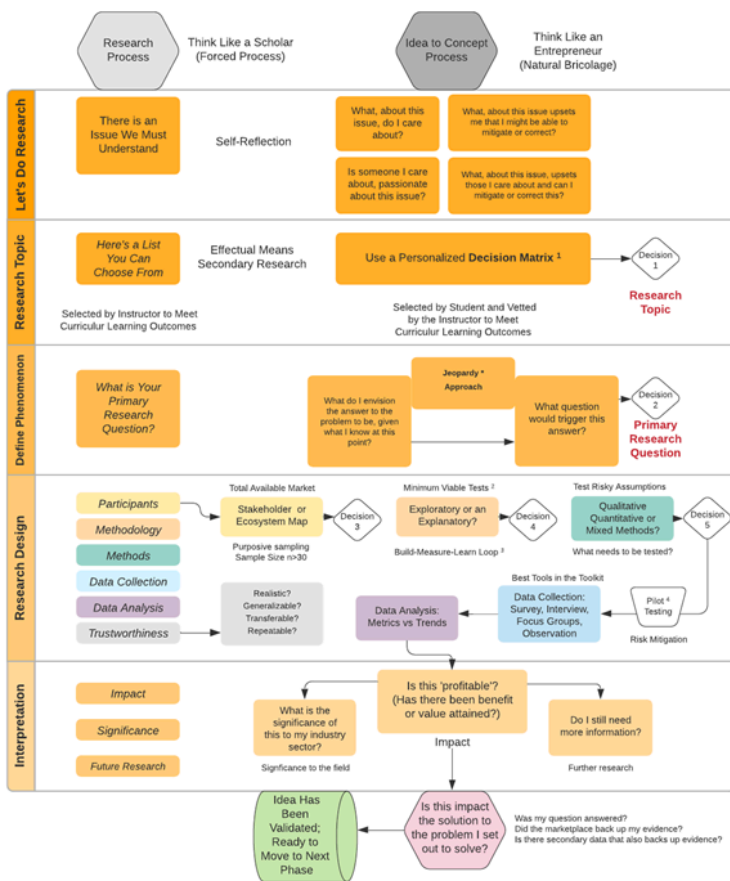
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Appendix A

Conceptual Framework: Entrepreneurial Approach to Teaching Research



Notes to Appendix A

I have used what I call the “Jeopardy Approach” to assist students in deriving their primary research question. This is something that seems to be a huge obstacle for most, causing undue distress early in the process. Emulating the popular American television game, I encourage students to muse on what they envision the solution to their identified problem might be, then frame that knowledge (the possible answer), in the form of a question. It has been successful in getting them over that initial obstacle.

1. A Decision Matrix Framework is presented in Appendix 4.

Students learn the importance of choosing the best fit between the criterion and possible alternatives they are not needing to choose from. This tool has provided one of the most effective methods of pushing through the many decision points connected to research protocol: selecting a targeted participant group from among many possible groups; grouping and sorting responses from surveys (when there is no previous experience or time to engage in data coding); choosing which type of data collection tool to use; and choosing a final best solution to the identified problem.

2. I present exploratory research to students as “Minimum Viable Tests,” similar to Eric Ries’ (2011) construct of minimum viable product (MVP): the minimum effort required to collect the maximum amount of validated learning with the least effort.
3. The Build-Measure-Learn Loop, also coined by Reis (2011), represents one cycle of testing a hypothesis by beginning with the riskiest assumption, gathering primary research to validate/invalidate that assumption, and learning from the results of that feedback. It is a very effective method of removing researcher bias, as it forces the learner to provide evidence (from their participant group) for assumptions often missed by inexperienced researchers. A common one is the assumption of “student” (an often-used participant group). Undergraduate students assume a “student” is someone just like them. When they begin to explore this, they quickly realize how broad the demographics and psychographics of the term can be.
4. Pilot testing of surveys and interview questions is often a new concept to novice researchers. They are often quite surprised and humbled to realize their questions are leading, biased, or not capturing what they had intended. The pilot often becomes an understandable “minimum viable test” that exemplifies the “build-measure-loop.” Once they understand the concept (based on pilot testing), future iterative cycles of data collection become easier and increasingly effective.

Appendix B

Applying Entrepreneurial Thinking to Research Lesson Plan

Topic: Social Issue Challenge
THE TASK You and your group are members of an elite think tank. In this course, you will be applying your entrepreneurial skills to a real-world economic and social problem. You will be helping Think Tank Incorporated tackle an important problem – Global Tracking Systems have left the realm of National Defence and now available and accessible in every other household, by almost any one, worldwide. It is proving to be an excellent tool – for military, civil and commercial use. Every technology breakthrough comes with pros and cons. We have been tasked with unbundling this issue. 1) Where do they start? 2) What do they focus on? 3) How do we wear our entrepreneurial hats to provide solutions to our client base (which is located around the world and spans many types of products/services, including many social innovation organizations).
Learning Objectives: • Demonstrate your ability to think critically: ◦ identify an overarching problem; ◦ develop a problem statement and a primary research question; ◦ demonstrate evidence of a collaborative decision-making process ◦ demonstrate iterative correction of the problem, research question and decision-making • Demonstrate your ability to apply exploratory or explanatory research methodology • Comprehend the nature of consent • Demonstrate the utilization of qualitative and quantitative research methods to develop an evidence-based solution to the problem you have identified. • Explain the impact and significance of your solution.
HOUSEKEEPING and EXPECTATIONS • Rules of the House • Team Agreement • Engagement in-class and how to ‘raise your hand’ • Engagement outside of class: shared work spaces

Pre-assessment: Quick Poll • Who has engaged in scholarly research? • Who likes doing scholarly research? Post-assessment: Short Qualtrics Survey [On a scale of 1 – 4, with 1 being not at all] • Did you enjoy the research process? • Are you more confident about doing research? • Will you incorporate research in your future work? What were your 3 biggest challenges? What were your 3 top takeaways?	Required External Resources: Shared spaces utilized by the teams: • Trello Board • JamBoard • Google Docs (Shared Drive) • Collaborate Meeting Rooms set up for each Team • Main Boardroom set up in Collaborate
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Scaffolded Assignments

Assignment 1:

- What is the overarching problem you have defined? [secondary research]
- How did you determine and develop your primary research question?
- What does the ecosystem, within which this problem resides, look like? [map it out]
- Are you going to try and explore the issue, or, explain the issue?
- Are you going to pursue just qualitative or just quantitative approaches? Why?
- What tools are you going to use to collect your data?
- What were your group's successes, challenges and learnings as you worked through the process?

Assignment 2:

- How did you determine your participant pool?
- What did you learn from pilot testing your data collection instrument?
- What did your first preliminary data results look like? [primary research]
- Did that information cause you to re-consider the problem that needs to be solved? Or the primary research question? Or the participant pool?
- What were your group's successes, challenges and learnings as you worked through the process?

Assignment 3:

- As you have continued to collect data, what possible solutions might be emerging?
- What one solution will you be recommending to the Executive Management Team?
- How did you select this solution?
- What were your group's successes, challenges and learnings as you worked through the process?

Assignment 4:

- 20 minute pre-recorded PPT presentation
- Incorporate a description/use of the research process you used to reach your solution
- Be ready to back up each step of the process with evidence
- Each member of the group must present
- Speak to the successes, challenges and learnings as you worked through the process?
- Speak to how you will use the research process for future solution-finding within your entrepreneurial endeavors

Assessment: Weighted analytic rubric

Examples of Solution Outcomes: which resulted from a 5-day evidence-based exploration of the topic presented.

1. A GPS chip in a fashionable necklace that tracked vital health statistics for the chronically ill.
2. A GPS chip embedded in golf gloves and golf clubs to track and measure athletic performance.
3. The COVID Defender: a customizable neckband with a lighted chip that vibrates when < 6 ft from someone.
4. Occupancy Tracker: a customizable lanyard given to event participants to keep track of proximity and movements.

Appendix C

Sample Rubric: Assignment 1_Problem Definition and Participant Mapping (15%)

Phase	Criteria		
Empathize	● What is the overarching problem you have identified within your assigned industry classification? ● Identify a wide range of users (stakeholders) within this sector ● Systematically document preliminary wisdom from at least three possible user groups within your sector: empathy maps, preliminary primary data collection & secondary research ● Seek to identify and clarify preliminary problems and pains for each of the 3 possible user groups ● Seek to understand and differentiate the beliefs and values of each of the 3 possible user group	/10	/20
Define	● Craft a meaningful and actionable problem statement <i>for each</i> of the 3 possible user groups ● Based on needs/pains, establish decision criteria for evaluating your competing ideas ● Highlight key findings from the empathize phase that led to your definition (how did you decide on the decision criteria?)	/10	/20
Focus	● Choose one user group to carry forward into next phases of design process ● Explain and defend your selection	/10	/20
Methods	● Explain your initial research findings – what preliminary reach out did you do TODAY with your 3 user groups? ● Then, generate a list of primary and secondary research strategies you will employ to develop a better understanding of your selected user group's needs/pains – go beyond the obvious! ● Express methods for understanding what is said and not said so as to understand your user group more thoroughly	/10	/20

Reflective Experience	● Identify strategies or processes you used or will use to suspend your own preconceived ideas, biases and beliefs ● Identify & express significant challenges of the process to date ● Identify and express significant successes to date ● Express potential learnings for the group	/10	/10
Portfolio	● Quantity of evidence illustrates process and practice	/10	/10
			/100
	Weighted		/15

Appendix D

Decision-making matrix

Decision-making process

Define problem statement

Define alternatives

Evaluate alternatives

Identify decision criteria

Make choice

Implement choice

Decision analysis

Decision to be made:

Example		Alternative 1	Alternative 2	Alternative 3	Alternative 4
My Beliefs	Criterion 1	Rate	Rate	Rate	Rate
My Values	Criterion 2	Rate	Rate	Rate	Rate
Secondary Research Finding 1	Criterion 3	Rate	Rate	Rate	Rate
Secondary* Research Finding 2	Criterion 4	Rate	Rate	Rate	Rate
* Replace secondary research with primary research as data is collected and analyzed	HIGHEST RATING	Total rating	Total rating	Total rating	Total rating

Rating scale: 1 = Doesn't meet criterion, 2 = Somewhat meets criterion, 3 = Meets criterion, 4 = Slightly exceeds criterion, 5 = Significantly exceeds criterion

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Dr. Rita Egizii has an eclectic background which includes neuroscience, business, arts and education. She defines herself as social innovator with a scholarly agenda. She has been highly recognized for her work including the: Royal Roads Kelly Outstanding Teaching Award; Order of the University of Calgary; Western Regional Finalist, Canadian Women Entrepreneur of the Year Award; Global Television/YWCA Woman of Vision; Western Legacy Award for Innovation. She has been an Associate Faculty at RRU since 2015. A published author, academic researcher, educational consultant and TEDx speaker, Rita's doctoral work explored the construct of pedagogical value and presents an entrepreneurial method for strengthening learning-centered knowledge utilization.

33. Combined Methods Teaching in a Transdisciplinary Environmental Cohort

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Royal Roads University's Master of Arts or Sciences in Environment and Management (MEM) has been designed as a transdisciplinary program. The concept of trans-disciplinarity that best applies is that of Klein (2004) and Robinson (2008) who imply trans-disciplinarity explicitly requires a coming together of practical, applied, and industry perspectives along with academic and theoretical perspectives. This makes the program a rich place for learning, but a challenging place for devising a teaching approach for research methods.

For those teaching research methods in single or multi-disciplinary contexts there is "a substantial body of literature at the disposal of teachers addressing the 'how to' of research methods, it does not adequately inform the teaching of methods" (Wagner et al., 2011, p. 75), and "very little [that] gives us a picture of what student learning looks like" (Earley, 2014, p. 248). More so is the lack of pedagogical guidance in a trans-disciplinary context.

Students and faculty in the MEM program come from a wide variety of backgrounds and there is little shared tradition in research methods. At one extreme are those with laboratory and

statistical skills, and the other are those with highly qualitative interests and experiences. An indication of the trans-disciplinary nature of topics and methods covered and used by MEM students is derived from the list of theses published at Royal Roads University.

Table 1
Sample of MEM thesis topics and methods used

Title	Methods	Citation
Restoring anthropogenic fires to Garry oak ecosystems: a case study from Tumbo Island North	Ecological field work, remote sensing, wildfire modelling.	Botica (2020)
Urban forest values and willingness to volunteer: a case study of New Westminster, Canada	Case study, survey, interviews, field notes, document review.	Peerless (2020)
A Complex adaptive journey toward sustainability: reframing a federal fisheries program	Socio-ecological systems mapping and evaluation, interviews.	Chestnut (2020)
Determination of the most effective technologies in methane emissions reduction for oil sands operations in Alberta, Canada	Risk assessment modelling, Cost Benefit Analysis	Doan-Prévost (2020)
Creating a procedural framework for restitution between an indigenous family and gold mining company in Northeastern Ontario	Cree medicine wheel methodology, mapping, workshops	Trapper (2019)

Rationale

The challenge is to design a course that helps students advance their research plans ideas whilst recognising that designing a course that will result in each student in the program developing all the skills they need is unrealistic. Based on observing students in the program over 12 years of teaching and supervising, what appear

to unite most students in the program is a pragmatic worldview (Weaver, 2018), one that is focused on experience, the goals of the project at hand and a desire to undertake research than will make a real and immediate difference to the personal and professional context in which it is taking place. This then leads to the primary goal of the research methods course – an embrace of intellectual diversity and pragmatism.

The aim of the two assignments described here are part of a suite of assignments that support the students in the development of a proposal, and how to identify appropriate literature and appropriate methodological direction.

These two assignments take advantage of the diversity of students and the wide range of interests and ideas.

Overview

Assignment 1

The first assignment in the course is a team-based discussion that aims to help student craft a research question. Unlike many graduate programs, a research proposal is not a condition of entry; students in the MEM program do not necessarily start the program with a solid idea of what research they may wish to pursue. The assignment is to frame and critique research questions that are concise and transferable to the research setting. The assignment is in the first unit of the course for which the learning outcomes are:

- understand the concept of the research paradigm;
- have a basic knowledge of the features of complex systems, and how these features might impact the research process;
- differentiate between multidisciplinary, interdisciplinary, and

- trans-disciplinary study; and
- explain why environmental research often requires a trans-disciplinary framework.

There is also a hidden aim: to introduce students to ideas beyond their disciplinary and professional context to challenge assumptions about what makes a good research topic.

The assignment is assessed on the degree to which students support the discussion and provide critical and constructive feedback to the proposed questions of others rather than the quality (or otherwise) of the research question posted, and on the degree to which students take on board that feedback in order to improve their question.

To support this, readings are provided that are both general research texts appropriate to environmental research such as Cresswell (2009) and Watts and Halliwell (1996). The students are asked to post their research question and brief explanation of the problem they hope to address; discuss the question, and those of others in their team.

Students are further advised to use the resources supplied to support the points they raise in the discussion and provide a critical framework for discussions and to complete the discussion with a revised question that addresses points raised by peers.

In order to ensure exposure to as broad a range of perspectives as possible, discussion groups comprise five or six students selected for maximum diversity. This ensures preconceived ideas and assumptions are more likely to be challenged; students with different, trans-disciplinary perspectives are present to discuss real-world problems posed; and the discussion may open individuals to possibilities they may not have considered both in terms of topic and also potential approaches.

Two common outcomes of this exercise are: those students from a quantitative background become open to mixed-methods and qualitative approach, and many students reframe their problem in response to perspectives put forward by colleagues.

The assignment is not assessed based on the quality of the final product, but on the degree to which student can give, receive and respond to critique. However, the assignment feedback provides the instructor with a confidential (non-forum-based) context with which to provide deeper feedback on the research question.

Assignment 2

Later in the course, after two individual assignments focused on literature review and research approach, the second team assignment is built around data analysis. A team approach allows individuals to focus on the type of data they may be collecting in their research.

The task is to analyse two data sets: one qualitative and one quantitative. The teams are presented with two options of each type of data, taken from research projects led by faculty related to the MEM program. The teams are presented with a research question to answer and a suggested analytical approach.

Table 2

Data sets for analysis

Data type	Set characteristics	Question posed	Analysis suggested
Qualitative	Environmental Impact Assessments and official Canadian guidance	To what extent do EIA's ...consider ...cumulative effects...	Matrices Analysis (Thorpe & Holt, 2008)
Qualitative	Interview transcripts	In what types of initiative has [the approach] ... been most effective? What characteristics ... have held the development of...back?	Coding (Pierce, 2008)
Quantitative	Plant growth data	Is there a significant effect of N fertilization on the health of the seedlings?	Set a null and alternative hypothesis and then carry out t-test or U-test (depending on distribution of the data). The guidance for this is present in course notes. ¹
Quantitative	Metal concentrations in soils	Is there any correlation between metal concentrations and soil properties?	Consider for example: ANOVA, Regression Analysis, Pearson-correlation: what assumptions are made by the tests you use, do the data fit these assumptions? The guidance for this is present in course notes. ¹

¹ Teams are advised to choose the best type of data set for the research they are proposing, with teams that are not proposing any quantitative study choosing the plant growth data as this is the straightforward data set.

The benefit of ensuring all teams must explore both types of data is that it exposes those from a physical science tradition to the challenges and requirements of qualitative data and vice versa. Even if those students are not planning on using those data types in their research, it increases comprehension of how conclusions are drawn, and enhances literacy about trans-disciplinary research methods we encourage our students to use.

Students frequently struggle with one or other of the data sets. This is normally aligned with experience, with those from more qualitative disciplines struggling with the statistics, and those with a quantitative background struggling with the qualitative data set. Common responses from students from quantitative backgrounds is they are surprised by the rigor and effort needed to analyse qualitative data, with those from qualitative backgrounds report a greater understanding of the limitations and power of various statistical tests. This increases the appreciation of analysis beyond the previous disciplinary boundaries to which the students had been exposed.

Reflection

These assignments form part of an overall assessment plan to lead students to a draft proposal that supports their goals for research. While some students do report dissatisfaction with the lack of explicit methods instruction, the course serves the purpose of leading students to the methods that work for them, rather than prescribing a narrow range of approaches. This serves to expand horizons and markedly increases the degree of trans-disciplinarity in thesis research. This is most marked in those from quantitative backgrounds who were skeptical of qualitative analysis prior to being exposed to it. Fewer students from qualitative backgrounds end up taking on quantitative analysis, but my assumption is this has more to do with a lack of mathematical confidence rather than

a lack of appreciation of the potential. There are also some key advantages to taking a team approach that take advantage of the transdisciplinary nature of the participants:

- Broadening of horizons in possibility, assumptions, questioning and approaches.
- The building of networks – discussion often results in exchange of contacts and experience.
- Learning from peers – a key component of RRU's Learning Teaching and Research Model (Royal Roads University, n.d).

Teaching research methods to a trans-disciplinary cohort to meet the demands of all students to prepare them *fully* for their research is simply not possible in a single course; but embracing the transdisciplinarity of the cohort and starting conversations across those disciplinary boundaries enriches the students' perspectives and strengthens their ability to devise their own approaches to the questions they wish to raise.

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Acknowledgements

The course described in this chapter was based on a course originally designed in by Drs. Ann Dale, Lenore Newman and Christopher Ling in 2007. It was extensively revised twice, first by Dr. Oksana Bartosh in 2009 and then again by Dr. Christopher Ling in 2015. These exercises are a product of the combined wisdom of those individuals. Thanks also to the many years of MEM students that also contributed to that development.

About the Author

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Conclusion

We began this volume with a metaphor about carrying out a research project being like climbing a mountain; research, like climbing, is exciting, can be demanding, and necessitates skills in the use of a range of tools. Some climbers specialize: they only use one set of tools so they are restricted to the kinds of mountains they can comfortably confront. In the same way, researchers can limit the kinds of questions they ask by limiting the scope of research tools they are willing to use.

This volume invites both novice and experienced researchers to consider other means to ask questions of the world, of people, and of social situations beyond what has been comfortable for them. There are many research ‘mountains’ to ascend and both novice and experienced researchers need to have a broad-enough toolkit to allow them to approach a range of challenging peaks with some confidence they can begin to make progress towards their goals. For novice researchers, we hope this volume will give you the confidence that even though you might be nervous as you approach the start of your climb, you are able to find the tools that will help you attain the summit you seek.

Our intention in preparing this book was to showcase a variety of ways faculty members use active learning/teaching strategies to engage students in authentic forms of learning about applied social research. We based the book on the premise that students who have opportunities to test out and experiment with a variety of meaningful research-related activities are better equipped to address the realities of research in applied organizational settings and are more easily enculturated into the role of a professional or academic researcher. Although this book does not address actual student outcomes of engaging in more active forms of applied research preparation, it does clearly elucidate the wide variety of

approaches that a relatively small sample of faculty members employ to bridge the gap between 'learning about' and actually 'doing' applied research in a range of settings.

We have immense pride in being able to share so many insightful ways to engage, motivate, and support applied researchers-in-training. When we reflect on the strategies shared in the preceding chapters, a number of overarching themes emerge that help to find common ground between the various instructional goals, real-world approaches, and applied research contexts shared by the contributors.

First, we have presented a broad array of approaches that, despite their specific research contexts, are highly transferable between different fields and disciplines with the social sciences. Additionally, we were highly impressed with the authors' application of various creative approaches to actively engage students in learning how to do research that have their roots or genesis in other fields of exploration. Both these observations underscore the value of considering the inherent interdisciplinarity embedded within applied social research that can be further fostered by examining, and potentially applying, a wide variety of robust methods and techniques aimed at enhancing active and authentic learning.

Secondly, the order of the chapters and sections of the book help confirm that active engagement is highly useful throughout the entire research process, from initial formulation of a researchable idea to the action steps that are derived from the dissemination of the findings, conclusions, and recommendations. Although our main intent was to feature articles that are aligned with discrete phases of developing and implementing research projects, readers may find that many of the approaches can be integrated into a series of active learning experiences that extend throughout the planned research project.

Thirdly, the chapters shared in this volume reveal purposeful, outcomes-driven teaching approaches that have been shaped and informed by the relevant literature. Rooted in a clear focus and sound pedagogical principles, the authors provided straightforward

descriptions of their activities and ideas, and the various steps to carry them out. This rich and fruitful range of experiences provides readers with useful starting points to shape their own practices as they adopt, adapt, and refine the approaches presented in this book.

Finally, in addition to the strong evidence-based premises employed by our contributors, the majority of the approaches shared by the authors have been refined over time with the benefit of student input and feedback. For many faculty members, this observation reflects the importance of taking the initiative to try out new instructional strategies while closely monitoring student understanding and engagement to enable meaningful refinements to be made. Sharing ongoing enhancements to the instructional activities helps underscore the commitment of our contributing authors to continuously improving their teaching approaches and the potential impact of these practices on their students' learning experiences.

After reading the contributions to this book, we encourage readers to seek out other helpful sources and ideas. Most importantly, consistent with the OER approach taken in this book, we urge readers to use this book and other resources as they create, revise, reuse and refine their own approaches to promoting students' active engagement in learning about the applied research process and to share their approaches with others.

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