

Statement of Research Activities

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Research Philosophy and Themes

My research philosophy stems from my aims as an educator and instructional designer to improve access to teaching and learning opportunities for all stakeholders. In preparing this Research Statement for the purposes of a first-year tenure-track review, I reflected upon my research path up to this point and looked ahead to where I see myself going in the future. I identified three interconnected themes centered on the seamless use of technology in education:

1. The facilitation of collaborative learning interactions.
2. Increasing teachers' perceptions of self-efficacy with the use of educational technologies.
3. Reduce barriers to learning opportunities (through the use of assistive technologies and the adoption of Digital Accessibility standards).

Research History

Prior to undertaking a position with Cape Breton University, my research focused primarily on the themes of facilitation of collaborative learning and increasing teacher self-efficacy. These themes are evidenced in my work with instructional design for mobile learning, and my recent research publications.

Mobile Learning, Collaborative Interactions, and Teacher Self-Efficacy

My previous research focused the use of mobile technologies in education. That served as a starting point for my interest in the connections between pedagogical approaches and teacher confidence with technology. This research led to the development of the Collaborative Situated Active Mobile (CSAM) learning design framework, and a survey instrument called the Mobile Teacher's Sense of Efficacy Scale (mTSES). I worked with Ohio State University to investigate the utility of these tools in teacher professional development (Power, 2013, 2015; Power, Cristol, & Gimbert, 2014). Our findings were presented at the 13th World Conference on Mobile and Contextual Learning (mLearn 2014) in Istanbul, Turkey (Power et al., 2014) and the 14th World Conference on Mobile and Contextual Learning (mLearn 2015) in Venice, Italy (Power et al., 2015a, 2015b), and published in the *International Review of Research on Open and Distributed Learning* (Power et al., 2016).

Recent Research Publications

In recent months, I have collaborated with colleagues and graduate students on several publications. Moodley, Cacellier, Power, and Côté (2020) focuses on the design and assessment of an online learning intervention for claims adjudicators in the Ontario insurance industry. Power et al. (2020) was a collaborative response with CBU graduate students to support educators shifting to online teaching because of the COVID-19 pandemic. Kay, Ruttenberg-Rozen, and Power (in press) explores an evidence-based framework for classifying and using educational apps.

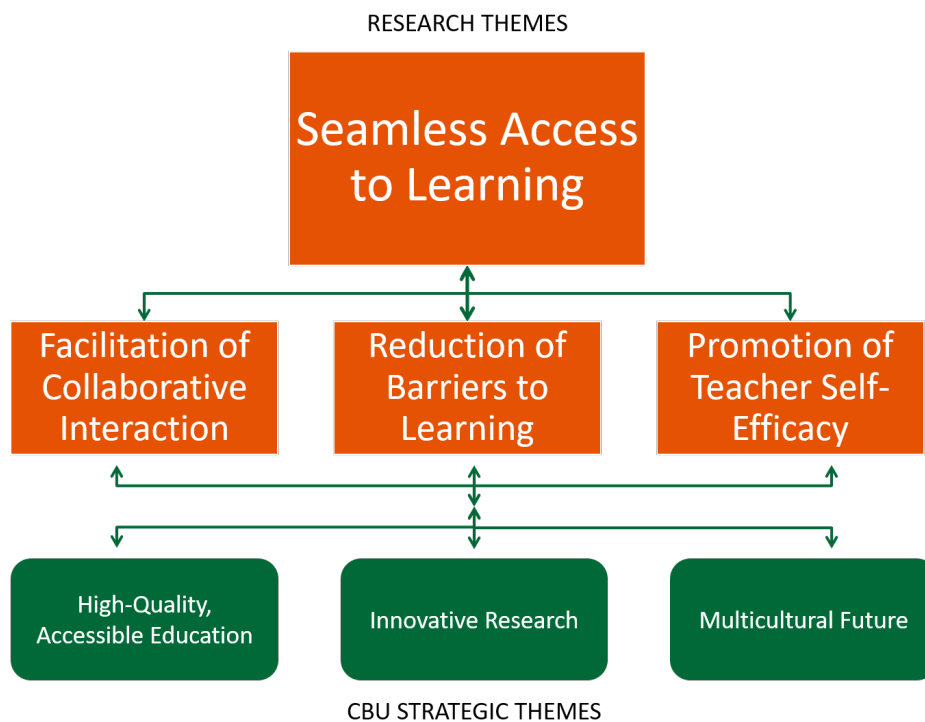
Current Research

My current work leverages new partnerships to build upon my research themes of supporting online teaching and learning, promoting seamless learning, and promoting Digital Accessibility.

The CBU Strategic Plan 2019-2024 stresses that “Cape Breton University is committed to high-quality, accessible education; innovative research; and a vibrant, multicultural future for the Island” (Cape Breton University, 2019, p. 2). The connections between this, my current research agenda, and my overarching research themes are illustrated in Figure 1:

Figure 1

Relationships between research themes



Facilitation of Collaborative Interaction and Promotion of Teacher Self-Efficacy***Online Teaching and Learning***

I am partnering with a colleague from the Faculty of Education at Ontario Tech University to investigate the responses of higher education faculty to the rapid transition to online teaching during the COVID-19 pandemic, the support mechanisms that facilitated that transition, and the impacts of the transition on the current and future teaching practices. We hope to conclude data collection and analysis and present our findings by late 2021 or early 2022. We anticipate the research will be useful to policy makers, faculty support teams, and Education training programs, when making decisions about how best to support ongoing or emergency-response online learning programs.

Seamless Learning

I am a member of an international research collaborative formed in 2018 which has developed a framework for the design of seamless learning experiences in higher education. In 2020, we published an Open Access book about the framework (Hambrock et al., 2020). The second stage of this research is investigating the implementation of seamless learning interventions at higher education institutions from North America, Europe, Asia, Africa, and Australia. This research is ongoing, with plans to disseminate results at various milestones through another open access book, conference presentations, and peer-reviewed journal articles.

Reduction of Barriers to Learning***Digital Accessibility and Assistive Technology***

In recent months, I have collaborated with Dyslexia Canada and Drs Sandra Jack-Malik, Janet Kuhnke, and Christina Phillips from the School of Education and Health at Cape Breton University. We have facilitated a series of open access presentations on supporting children and adults who have Dyslexia. We are now in the early stages of developing a research agenda linked to the development of an elective course that will initially be offered the students at CBU, and that will eventually be offered as a faculty professional development opportunity, and as an open-access public learning opportunity. Research themes under consideration center on the efficacy of technology-based interventions to support children and adults with Dyslexia for which there is anecdotal evidence of benefit.

Future Research Directions

My current research agenda clearly touches on all three of my major research themes. While other opportunities will arise to advance all of these themes, I have identified two initiatives that are closely linked to the reduction of barriers to learning, and the promotion of collaborative learner interactions.

These research directions are closely linked to recent program initiatives and the expressed aims of Cape Breton University.

Reduction of Barriers to Learner and Facilitation of Collaboration

Online Teaching and Learning

As a result of the restrictions imposed in Nova Scotia in response to the COVID-19 pandemic, the 2020-2021 CBU Bachelor of Education program cohort has the distinction of being the first in Canada to complete the coursework components of a B.Ed. program entirely online. The 2020-2021 cohort from the Bachelor of Education program at Ontario Tech University may have a similar distinction in the coming months. Future research will explore the responses of students in such cohorts to the online delivery of their programs, and the effects of this on their preparation to undertake teaching positions upon graduation. The comparison of the efficacy of a B.Ed. program delivered online to the traditional in-person delivery model would be of benefit to policy makers and to future program development efforts.

Micro-Credentials and the Future of Online Learning at CBU

Cape Breton University has expressed a keen interest in exploring models for delivering online learning opportunities to wider audiences, including the use of micro-credentials. Our emerging training and research partnership with Dyslexia Canada offers an ideal opportunity to explore the effectiveness of different instructional design, technology integration, and learner enrolment and participation models for a higher education course. Results from this would be of interest to policy makers and program design teams at CBU, as well at other higher education institutions.

Funding Opportunities

In addition to the use of Start-Up Research Grant funds to support current and future research initiatives, several potential funding sources have been identified, including:

- Monetary and/or in-kind support from Dyslexia Canada.
- SSHRC Partnership Development Grant program.
- SSHRC Connect Program.
- SSHRC Insight Program.
- CBU Research Innovation Scholarship Exploration (RISE) grant program

SSHRC programs such as the Partnership Grant, the Connect Grant, and the Insight Grant, along with direct support from Dyslexia Canada, could be leveraged to advance research related to the efficacy of

digital tools to support learners with Dyslexia. The CBU RISE program may be a good starting point for funding to support research into the efficacy of online program delivery for Bachelor of Education candidates, as well as research into the instructional design and efficacy of the use of micro-credentials to promote innovative online programs at CBU. The future research initiatives outlined here could also be supported through SSHRC's Partnership Development, Connect and Insight Grant programs.

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