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# *Exploring the Impact of Place-Conscious Pedagogy on Science Education*

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## **Abstract:**

Our research explores the impact of place-conscious pedagogy on science education in the context of small seaport and prairie communities in Canada. Place-conscious pedagogy offers hands-on opportunities for students to become active participants in understanding and applying scientific knowledge and methods in local environmental contexts. Our study is guided by two interrelated questions: what practices do place-conscious teachers offer science students and how do these teachers understand the impact of place-conscious pedagogy on science education? We explore these questions through in-depth teacher interviews and photographic documentation of related classroom practices and outcomes. This information is used to generate case studies that further our understanding of place-conscious pedagogy as a practical means of enhancing science education—a core curricular expectation—and as a support for fostering social transformation and environmental sustainability. Our presentation focuses on two such cases. One case enlisted high school students in a population count of the invasive green crab. The second case engaged elementary students in field observations of owls. A theme we explored in our case studies was the relationship between place-conscious

pedagogy and transformative student agency. Our research indicates that when students actively participate in understanding and shaping the world around them, they learn to recognize themselves as transformative agents of change (Kelly & Pelech, 2019; Pelech & Kelly, 2020). These cases offer practical illustrations of teaching that can enhance prospects for making science meaningful to students and that promote long-term environmental and social transformation.

**Keywords:** science education; place-conscious pedagogy; student agency; case studies; Newfoundland and Labrador; Alberta; science curriculum; pedagogy

## References

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## Biographical Notes

Darron Kelly is an award-winning, SSHRC-funded scholar whose research examines applications of critical social theory in administrative contexts (including communicative rationality, transformative leadership and ethical policymaking) and explores the educational value of place-conscious pedagogy (including student experience, teacher identity, school-community partnerships and transformative agency).

Sharon Pelech is an associate professor in education at the University of Lethbridge. Her research interests include science education, place-conscious pedagogy, ecopedagogy and hermeneutics. Sharon teaches undergraduate and graduate courses in curriculum studies and science education. Previously, Sharon taught science in the Northwest Territories and in both rural and urban locations in Alberta.