A Reflection on Cybersecurity Indigenous Educational Experiences

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BRANDON UNIVERSITY

Land Acknowledgement

Brandon University main campus is located in Brandon, Manitoba, on Treaty 2 territory. This is traditional shared land between the Dakota and Ojibway. The Turtle Mountains and Brandon Area was also home to the Métis peoples. Settlements along the Assiniboine River and into northeastern areas of Saskatchewan created a chain of Métis Communities.

We at Brandon University acknowledge and respect the history, land and the people of this area.

Project Overview

The project came about through a Community Investment Grant from the Canadian Internet Registration Authority (CIRA) for a knowledge-sharing community engagement project aimed at broadening public understanding of cybersecurity.

Objectives

Our two main objectives remained the same throughout the entirety of the project:

1. Indigenize educational materials related to cybersecurity, and

2. Provide workshops to rural Indigenous communities on cybersecurity.

Indigenous in Canada is a broad term to describe one of three groups: First Nations, Métis, and Inuit, the former of which will be discussed throughout this paper.

Indigenization is a process of instilling Indigenous worldviews, knowledge, beliefs, and ways of learning and doing, into academics, organizations, and other structures.

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The Four R's

It is important to include Indigenous peoples in the Canadian cybersecurity dialogue, couched in the Four R's of First Nations and Higher Education: Respect, Relevance, Reciprocity, and Responsibility.

Context

The Canadian national cybersecurity strategy was recently ranked second among 20 countries around the world (with the USA coming in at #1), with the development of Indigenous cybersecurity technologies listed as a common objective among many national cybersecurity strategies.

At the same time, following the Truth and Reconciliation Commission of Canada: Calls to Action, there is much interest in Indigenizing course content in all levels of public education, to develop culturally appropriate educational programming, and to eliminate educational gaps between Indigenous and non-Indigenous Canadians.

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Related Work

- Not much has been done on the topic of Indigenous education and Indigenization in the fields of Computer Science (CS) and Electrical and Computer Engineering (ECE)
- The small amount of literature on the subject is limited and narrow in scope

Workshops

Two workshops were held in Waywayseecappo First Nation in early 2020 prior to Covid-19 lockdowns. Other workshops scheduled for 2020 had to be postponed. The project resumed in 2022.

Workshops

The Cybersecurity 101 notes were presented and pamphlets were handed out at all workshops, to students as well as teachers at each school.

- Birdtail Sioux First Nation: Three workshops aimed at Nursery through Grade 12. Included playtime activity with blocks for younger age group to demonstrate the concepts, and a Q&A period for the older age group with Tanner

- Sioux Valley Dakota Nation: Three workshops aimed at Kindergarten-Grade 6. Emphasis on cyberbullying due to community needs.

- Sandy Bay First Nation: Six workshops aimed at Grades 4-12.

- Brandon Friendship Center- Adult Education: Also featured a slideshow and informal discussion of personal experiences of the audience.

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Conclusion

Our study took us to four First Nation reserves and one urban Indigenous service center where we facilitated a total of 16 workshops. We presented for approximately 200 Indigenous students (from kindergarten to adult education) through an Indigenous framework by not only having the Indigenous outreach workshop facilitators (who they themselves are from First Nations communities) take the lead during workshops but by also affording schools the freedom to choose the participants and contribute topics to be discussed. We found that communities were very welcoming and thankful to be having a workshop of this nature provided to them.

Conclusion

Although the demand for cybersecurity education in rural Canada is still substantial, we believe our workshops and educational material developed will assist in reducing the disparity between rural Indigenous cybersecurity knowledge and the lack of research surrounding the topic.