Into the Longhouse, Around the Medicine Wheel

Into the Longhouse, Around the Medicine Wheel

MICHAEL CARTER

Hello World

We are a collection of archeologists, student researchers, Indigenous educators, artists and learners on a journey to help you learn about, and physically, mentally, emotionally and spiritually engage with a key part of human history and a key part of the history of the land that is now Canada.

“Spiritual matters are difficult to explain because you must live with them in order to fully understand them” ~Thomas Yellowtail, Crow

These modules were created by a group of people who engaged with the subject matter with a beginner’s mind, most of us know very little about this history. Like detectives, we were able to piece together an experience that is designed from the ground up to be unique, to challenge assumptions and give you a new way to experience our early lives on this land now called Canada. It combines virtual reality experience whereby you can enter a Late Woodland, 16th-century Iroquoian longhouse. The VR, created by Canadian archeologist and researcher, Dr. William Michael Carter, will physically transport you into the proud and rich tradition of First Nations people. You’ll experience how they lived, their daily lives, how they slept and lived communally.

The learning modules will then help you to dive deeper, physically, emotionally, intellectually and spiritually, into the research and study of the

Iroquoian people.

Michael has had an extensive twenty-four-year professional career in the 3D and 2D computer animation and visual effects (VFX) industries, in both the software and production environments. He is a 2015 Team Award recipient for the Ryerson University President's Blue and Gold Award of Excellence, in the design, development, and implementation of the Master of Digital Media program.

His research focuses on Artificial Intelligence (AI) and Culture, both from the perspective of the enculturation of data and in the formation of pre-cultural markers within AI itself. The use of Virtual Archaeology to enhance Art and Archaeological research, as well as the deployment of robotic systems within hazardous archaeological sites. Additional research is in the DNA of 3D points within virtual objects and the representation of providence and provenance data as an actor-network.

Michael holds a Ph.D. in Anthropology (Archaeology) from Western University, a Master's in Education from the University of Toronto, two post-graduate diplomas in Computer Graphics and Computer Animation from Sheridan College and an Honours BA in Anthropology and Visual Arts from the University of Western Ontario. Michael is currently a Getty Foundation Fellow in the Institute of Ancient Itineraries.

In creating these materials, it was our goal to throw away the same-old, colonial approaches to learning. We wanted to dispense with the old teaching frameworks and try something completely brand new. We came to the project with the desire to decolonize the classroom, indeed, eradicate the traditional classroom, in favour of materials that were steeped in principles of anti-oppression and rooted in Indigenous learning principles.

Ewan Cassidy, the project's Indigenous research assistant, noted there were some readings about the work to decolonize the South African educational system after the apartheid system was lifted. In that material, we found some very powerful grounding principles for the project. Fataar (2018) deals with the notion of misrecognition in education[1]. Misrecognition is defined as not understanding who the students are, creating curricula that doesn't reflect them, and institutions that don't support them.

The article also makes the argument that even a South African school system has been co-opted by "techno-modern instrumental reason"; this instrumental reason has replaced racial discipline. The educational experience for Black South Africans has been fraught with "subtle and insidious forms of inequality" (Burke, 2012).

"Misrecognized students develop a complex life" and adopt "survivalist educational navigations and practices" (Fataar, 2018, p. 600).

Contemplating these systemic inequities that students might face, we started discussing some key questions for as we began creating the educational materials:

1. How do we ensure the equitable and informed delivery of VR?
2. How do we deliver the VR intervention in a way that is exciting, relevant and respectful?
3. How do we help instructors and students reflect upon and

1. Fataar, A. (2018). Placing Students at the Centre of the Decolonizing Education Imperative: Engaging the (Mis)Recognition Struggles of Students at the Postapartheid University, Educational Studies, 54:6, 595-608, DOI: 10.1080/00131946.2018.1518231

deepen the learning?

On the first question, we discussed the issue of the digital divide in Canada. Tanya grew up in the North (Peace River, Alta) and we discussed that some classrooms might struggle with access to technology and resources. The following is taken from research Tanya conducted earlier on the accessibility of VR in Canada and some things to consider:

-
  - According to Statistics Canada, currently 25.5 million people in Canada own smartphones. Based on medium-growth estimates, Stats Canada predicts that by 2020 81.3% of Canadians will own smartphones.
  - Currently, iOS devices dominate the mobile phone market share in Canada, differing from global trends where Android devices are leading the market.
  - In Canada, the market share for iOS devices rests at 53.94% and Android devices rest at 45.94% (Retrieved from http://gs.statcounter.com/os-market-share/mobile/canada/2016).
  - However, the Android purchases in Canada, as well as globally, tend to be younger and more price-conscious, whereas iPhone users tend to be correlated to those with more disposable income and older users, according to statscounter by Global Stats, based on May

2019.

Based on Toronto's digital divide, it is uncommon for lower-income families to have a laptop or desktop in the home. However, it is more common for them to have a smartphone. Due to the cost of iPhones and depending on the target population, it might be (if lower-income populations are the target) wiser to focus initially on Android delivery and a downloadable, free app. Some statistics about the digital divide in specifically in Toronto might inform our decision-making:

Digital Divide Statistics

- 58% Canadian households with annual incomes of $30,000 or less with home Internet access.
- 98% of Canadian households with annual incomes of $120,000 or more with home Internet access
- 83.5% of ACORN survey respondents who find high-speed Internet "extremely expensive."
  59% of survey respondents who pay for the Internet by forgoing other household necessities.
- 71% who used food money to pay for Internet

services.

- 64% who used recreation money to pay for Internet services (Retrieved by https://www.thestar.com/news/gta/2016/02/02/anti-poverty-advocates-call-for-affordable-internet.html)

How do we ensure the equitable and informed delivery of VR?

We might consider providing instructors with three ways to access the VR intervention and get the most from it. In this way, we might create a set of easy checklists and instructions for different ways to engage as follows:

- Way to access it with limited gear (offline or via a classroom projector)
- Way to access it with some access to specialized gear, ie. Google Cardboard
- Way to access it via a full experience with specialized VR gear, high-end classroom or museum, with checklist and troubleshooting tips

How do we deliver the VR intervention in a way that is exciting, relevant, informed and respectful? Exciting?

In our earliest brainstorming sessions, the research team came up with the following:

- We could create videos
- We could create podcasts
- We could have some dynamic e-learning materials (modules) for children, families to learn at home

- We could create activities that allow students to create their own longhouses based on styles and features that might be commonly found.
- Could this be an app with presets and drag and drop? It would need to be open source as an OER tool.
- We could create some branching narratives to allow people to decide or make choices about what experiences they wanted to have in the VR intervention.

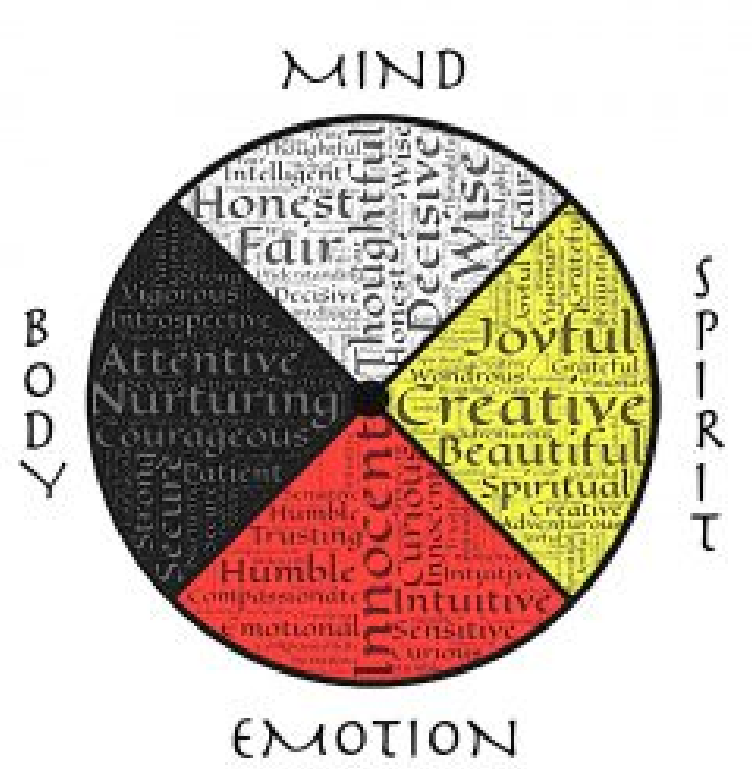
How do we make this subject matter relevant?

We could answer questions such as:

  - What was life like as a child in an Iroquoian city?
  - What was life like for a mother?
  - Young person?
  - Leader?
  - What were the beds like?
  - What was mealtime like?
  - Seasonal celebrations?
  - Trade?
  - How did the garbage collection work?
  - How Western culture has led to climate change, poverty, food insecurity, homelessness, income inequality? We could come up with ways to link this to our current reality of living unsustainably.

In this vein, one of the key 'eureka' moments for our work on this was the suggestion by our Indigenous advisor, Michael Mihalicz, for us to look at the LaFever (2016) piece entitled, Switching from Bloom to the Medicine Wheel[2]

2. LaFever, M. (2016). Switching from Bloom to the Medicine Wheel: creating learning outcomes that support Indigenous ways of knowing in post-secondary education, Intercultural Education, 27:5, 409-424, DOI: 10.1080/14675986.2016.1240496



johnhain (pixabay.com) Retrieved from https://www.needpix.com/photo/223794/medicine-wheel-wholeness-well-being-four-directions-mind-spirit-body-emotion-balance

In our very first meeting, we decided we didn't want to approach this topic the dreary *block and tackle* of creating learning materials against the typical Bloom's Taxonomy. We talked about the checklist of tasks in a traditional set of

learning materials. For those of us on the team steeped in pedagogical frameworks and the right (and wrong) way of doing things. Ewan Cassidy, our lead Indigenous research assistant, looked at us as we cycled through those early possibilities. He slumped back in his chair in the starkly light lab meeting room where we met and said, "you've just described every high school class I've ever taken." This, he explained, wasn't necessarily a good thing.

That comment set the tone for the rest of the work. Ewan pushed and inspired. We wanted to break things, break the mould, and break out of the 'by-rote' approaches to creating learning materials and modules. There's an old Tom Waits quote that sprang to mind, "There's a lot of intelligence in the hands. When you pick up a shovel, the hands know what to do. The same thing's true of sitting at the piano." This intelligence in the fingers, this engrained and entrenched way of doing things, Waits argued, is the enemy of the artist and, we felt, the educator. In the words of Audre Lorde, "For the master's tools will never dismantle the master's house. They may allow us temporarily to beat him at his own game, but they will never enable us to bring about genuine change." [3]

Lorde inspired us with this quote in its entirety, in particular, governing some of our thinking in support of this project:

> "Those of us who stand outside the circle of this society's definition of acceptable women; those of us who have been forged in the crucibles of

3. The Master's Tools Will Never Dismantle the Master's House, Audre Lorde, Retrieved from https://collectiveliberation.org/wp-content/uploads/2013/01/Lorde_The_Masters_Tools.pdf

difference – those of us who are poor, who are lesbians, who are Black, who are older – know that survival is not an academic skill. It is learning how to take our differences and make them strengths. The master's tools will never dismantle the master's house. They may allow us temporarily to beat him at his own game, but they will never enable us to bring about genuine change. And this fact is only threatening to those women who still define the master's house as their only source of support."[4]The Master's Tools Will Never Dismantle the Master's House, Audre Lorde, Retrieved from https://collectiveliberation.org/wp-content/uploads/2013/01/Lorde_The_Masters_Tools.pdf[/footnote

When Michael Mihailicz made the suggestion of the Medicine Wheel and LaFever (2016), we realized we found the framework we've been searching for the Longhouse OER project. LaFever (2016) proposes a reconception of pedagogy away from Bloom's Taxonomy. Most North American classroom instruction uses Bloom's Taxonomy - which divides learning into the mental, physical and emotional. LaFever (2016) notes that secondary and post-secondary ignore the physical and emotional as well, with only some disciplines touching on those aspects such as counselling which deals with emotions and the trades which deal with hands-on physical tasks. The Medicine Wheel proposes a fourth element which is *spiritual.*

4.

> “What good is education without love?” ~ Catherine Adams, Kwakiutl, born 1903 Smith’s Inlet, B.C

In our discussions, we acknowledged as LaFever (2016) does that this fourth aspect is completely ignored in traditional Western/North American pedagogy. We asked ourselves: "How might the spiritual be integrated into the classroom?" LaFever (2016) proposes that the spiritual can be woven into a learning environment in the following ways:

- **Honouring** - a recognition that we are all connected to the earth and that things exist outside of materiality and our own self-interest
- **Attention to Relationships** - an understanding that relationships and community is key to learning and living; supportive relationships inside and outside the classroom are key to thriving
- **Developing a Sense of Belonging** - Helping learners find and understand their place in the world
- **Feeling Empowered to Pursue a Unique Path** - Guiding learners to find their unique place in the world and guiding them along their journey
- **Developing Self-Knowledge of Purpose** - Helping a learner become self-actualized as a “unique entity in the group.’

We determined these guidelines for bringing spirituality into the learning can be accomplished in the following ways:

- Allowing students to reflect on ideas, emotions and physical experiences via discussion, self-reflection via

journaling and creative activities

- Relating feelings through presentations (oral or creative) or written stories
- Demonstrating communication, community building and honouring (mindfulness) skills
- Role playing, videotaping and self-assessment

In this final point, there was a reference made to Boal (1979) Theatre of the Oppressed, an avant-garde movement into which we did some more investigation into. **More here**

We were intrigued by the ideas of Indigenous teaching including long-term mentoring, and student as teacher and instructor as a learner as a basis for some activities to enhance the learning delivery.

From the framework of the Medicine Wheel, Michael further

recommended that we embark upon a Design Thinking process to determine what was needed for both students and instructors. Design Thinking is a process whereby designers, product developers, and instructional designers engage in a structured and stepwise process to create innovations that are grounded in human experiences and empathy.

This was the resulting Instructor's, Design Journey.

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/longhouse/?p=4

About the Authors

Ewan Cassidy

I am a first year undergraduate student in the Environment and Urban Sustainability program at Ryerson University. Throughout my youth I've found further and further interest in the effects institutions and systematic structures have had upon the mindset and mental health of those in my generation. I've known Dr. Carter since I was young and am proud to call his son one of my closest long-time friends. Dr. Carter asked me to join him, Tanya Pobuda, and Michael Mihalicz as an Indigenous research assistant and to bring my perspective to the project.

As a follower of the Jungian approach to my own mind, I've spent time on how I can integrate my practice of introspection into all aspects of my life. Born in Toronto at Mount Sinai Hospital to a newly emigrated mother, and an Indigenous father, I've grown up with quite different cultural influences.

An interactive or media element has been excluded from this version of the text. You can view it online here: https://pressbooks.library.ryerson.ca/longhouse/?p=28

With my parents separated when I was young, learning the traditional teachings of the Anishinaabe culture and several others with my father, I've learned to integrate multiple cultures and to respect the tradition and teachings I receive. Speaking Japanese with my mother and growing up as close

to the classic Japanese home that you can get with a 14-hour flight away not only made my resume better with “bilingual”, but taught me to open my ears and mind to different social laws from across the world.

From a young age my father and I would participate in long remembered traditions; from sweat lodges, sitting in ayahuasca ceremonies, sitting up all night in the teepee in a peyote ceremony, and even learning the Taoist teachings and Reiki Healing.

"Ayahuasca Inspired Art – August 2012" by *Howard G Charing* is licensed under *CC BY-NC 2.0*

Growing up in an upper-middle class neighbourhood in Toronto with a racially and culturally diverse population, I found myself surrounded by people with contrasting ideologies and ways of thinking to my own. Within this economically

privileged area, I found myself in an unstable household, developing a sensitivity to my emotions.

This sensitivity led me to deal with a multitude of mental health issues throughout my teenage years. In the beginning, I had martial arts as a channel to direct these emotions and stressors; at 15 I quit it altogether, unwilling to deal with the unhealthy culture one can find in many martial arts practices. In my senior year of high school, dealing with substance abuse, I was diagnosed with Major depressive episodes. Spending time in mental health wards, and couchsurfing. In these times, the spirituality aspects of my life that I grew up with were no longer present in my life.

At 18, my father put me through a Bwiti psycho spiritual journey, and my eyes were opened. The clouds of thoughts and feelings surrounding me had dispersed and I could see clear as day, thus beginning my journey of introspection and deeper understanding of not only myself but the ocean of life in which I navigate.

"In the Jungle with my brothers" By Jimmy

A year after the ceremony I transfered to the Native Learning Centre (NLC), an Indigenous high school in Toronto. While attending the school I began training under my father and learning the Bwiti teachings of life. At the NLC I met Indigenous people my age, who were not as privileged as I was growing up sheltered from the systematic oppressions of First Nations on Turtle Island. The cloud that once covered my eyes surrounded my peers.

I do not claim to know what it is like to live on reservation land, what it is like to have a parent who lived through residential schools or the Sixties Scoop. My grandmother was fortunate enough to escape that, hiding her Indigenous identity until long after she passed away.

I do know that the epigenetic trauma that Indigenous people experience is all too real. While I feel like a fraud at times, and even have questioned my Native identity in the past. I know that the healing and reconciliation of my fellow Indigenous peoples is part of my purpose in life.

It is with this introspection, and desire to heal people that I joined this project. I have received this gift to work on this project keeping in mind that this project is not for me, Dr. Carter, Tanya, Michael or anybody else involved; This project is through and through, for the reconciliation of traditional teaching, and the healing on the land.

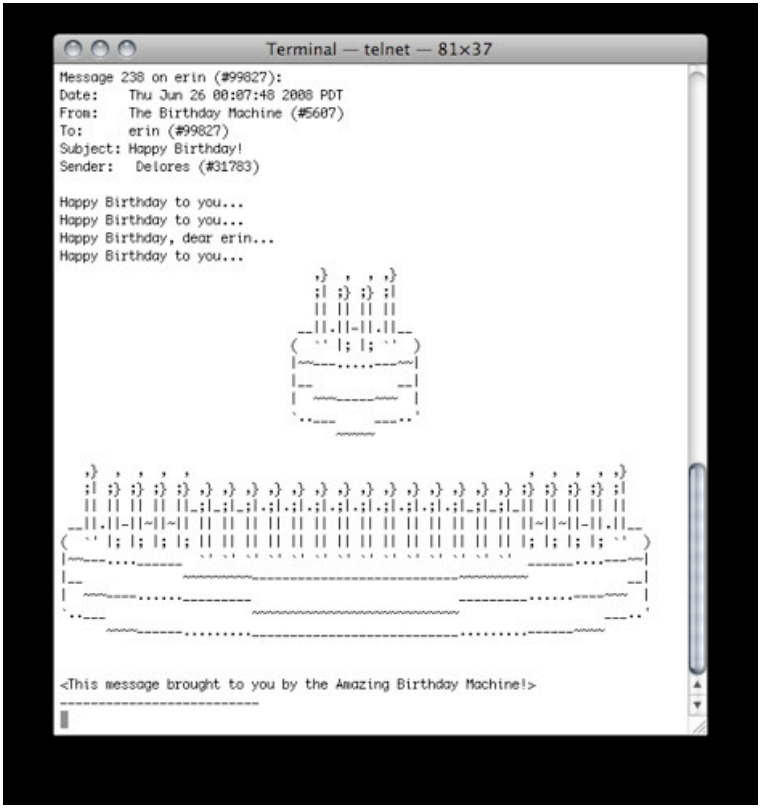
Tanya Pobuda

I am a PhD candidate in the Communication and Culture program held jointly by Ryerson and York Universities. I've been studying the use of virtual reality (VR) in pedagogy for the past three years. I was looking specifically at the use of VR in training students and business professionals to feel empathy for others in small team settings. I met Dr. Michael Carter in 2018 when I was supporting a class on private-, public-partnerships to solve

real-world business problems for Ontario organizations. I learned of his research and read his dissertation. I was intrigued about his process and methodology for recreating worlds. His work on the recreating a 16th century longhouse, his reflexive exploration of his assumptions, the conflicting reports of life in a sprawling, diverse metropolis just outside of what is now London, Ontario. I wondered, how might the longhouse be experienced by secondary and postsecondary students?

I am believer in the sensory magic of VR. I have been transported to weird, disorienting worlds in virtual space since the early 1990s. I dabbled in text-based worlds in Xerox Parc's LambdaMOO, and programmed objects and rooms designed to interact with other visitors. I chatted with a penguin from Taiwan in Worlds Chat, a 3-D immersive world and gigantic chat room that was globally popular in the early days of the Internet. I've created immersive worlds and 3-D objects by hand in VR hackathons held by Dames Making Games.

Here's a a slice of an immersive world circa 1994.



"

Lambdamoo" by everyplace is licensed under CC BY-NC-ND 2.0

I was thrilled to be a part of this project. This project had an important, a gravity and a feeling of such critical importance that I was mostly feeling just one thing: nervous.

I'll explain.

I am a white Settler. I am a researcher of Irish-Czech descent. My last name is a crude insult in Czech, meaning hobo but "worse" according to a Czech-speaking man I met one day several years ago. He told me not to "tell anybody." I literally can't stop telling people that. Czech speakers always titter when I introduce myself.

I am cis-gendered. I live in one of the biggest cities in North America. I've had a reasonable career, starting as a reporter, working as a marketer, communication professional and certified project manager in tech and life sciences. I recognize that I occupy a privileged position in my society. I (rightly) feel guilt and shame for how we, as white Settlers, have treated Indigenous people: First Nations, Métis, Inuit. We were visitors to this land. I realized, shortly after coming to Ontario, I got to see the ugly face of racism in Canada up close during my upbringing in Canada's North.

I spent most of my formative upbringing in a rural community just outside of Peace River, Alberta. We lived on a farm in what was called Judah, but when the grain elevator burned down by the railroad tracks, near our farm, and then someone shot down the road sign, Judah not longer merited even hamlet status. The only proof of Judah's existence lay rusting in the dirt ditch beside the gravel road to my farmhouse while I was still in elementary school.

If you look at the aerial, satellite view of my family's home, you can see the landscape is raked and scarred by farming operations, and pock-marked by the clear-cutting of the traditional poplar forests. When we transformed our hobby farm into a full-blown agricultural operation, we grew cash crops of wheat and barley to start. I found black slate arrowheads buried deep in the furrows made by our plow in our barley field near the Smokey River. My family went on to create a cow-calf operation, and bought a Caterpillar tractor to knock down the trees to make room for grazing land for the cattle. I dug tree roots out of the ground to ensure that cattle didn't break their legs on what was left of the trees, their ragged, charred roots. I hated that job. As with cow-calf operations, we kept the female cows, and sold the yearling (or less) steers to feed lots.

An interactive or media element has been excluded from this version of the text. You can view it online here: https://pressbooks.library.ryerson.ca/longhouse/?p=28

My family lived much of our time in the erstwhile Judah living in a back-to-the-land style. We grew our food, for the most part, we hunted in the fall. If we bagged a moose during hunting season, that meant red meat for the winter and spring. Of course, this was merely *most* of the moose carcass, less whatever the dodgy, and I often thought, illegal butcher located in a broken-down trailer home skimmed off the top. For us, beef was for money, moose was for food. We lived

surrounded by coyotes, deer, moose and the odd black bear, one of which killed our toy dashhund.

I lived throughout most of my childhood on Treaty 8 territory. This was an agrement made by Queen Victoria and the First Nations of the Lesser Slave Lake area. The treaty was struck on the ground that was just south of Grouard, Alberta.

An interactive or media element has been excluded from this version of the text. You can view it online here: https://pressbooks.library.ryerson.ca/longhouse/?p=28

The Treaty 8 land acknowledgement reads accordingly: "we honour and acknowledge all of the First Nations, Métis and Inuit peoples who have lived, traveled and gathered on these lands for thousands of years." Signs of that past life were all around me, buried arrowheads from the warfare near the Peace and Smokey Rivers in the soil, plaques about the peace between warring nations on the banks of the mighty Peace River. I grew up hearing Y-Dialect Cree being spoken on the streets of my town. My farming neighbourhood friends down the road were girls taken from their families during the 60s Scoop, a shameful part of Canadian history. Children were snatched from their families, put in residential schools or given over to white families to raise, or more often, to exploit.

My friends were First Nations girls from different families who were taken from their homes and given to a local white farming family. In junior high, I learned that they were being physically and sexually abused on the filthy farm they were forced to work on, and act as care-givers to this "foster family". Learning what was happening to my friends was a shock and an outrage I can feel to this day.

I watched my First Nation classmates being bullied, harassed and intimidated by white students and teachers alike. I was bullied right along with my friends. I was an outsider kid, the kid who came from the city, born in southern Alberta and not related to the older, established white families who ran the town. I was the kid in school wearing filthy rubber boots surrounded as we were by dirt and gravel roads. I trudged in too-big boots to school, a 45-minute trip by bus, wearing my eccentric, homemade, wood-smoke-smelling clothing from our home's wood-burning stove, and the burning barrel where we set fire to our garbage (sustainable! ((not))).

The bullying I suffered was nothing like I saw happening to my First Nations friends, members of the Cree and Dene communities.

The systemic racism in my town would be evident to any visitor but might seem like just another part of life for those who lived there. There's a McLuhan quote I think about frequently says: "One thing about which fish know exactly nothing is water, since they have no anti-environment which would enable them to perceive the element they live in."[1] That quote sums it up. We couldn't see what we were, what we continuously did. It was so entrenched that it was as habitual as waking up in the morning, seeing the sun in the sky. The inequity all around us as kids, its unrelenting frequency turned a sharp pain of outrage to dull ache of depressive resignation.

I knew I wanted to get out of my home town as soon as I could leave. I remember plastering a photo copy of the Academic Diploma criteria to the back of my particle board door in my bedroom. I was stare it at night and I studied so much in high school I got bronchitis. I coughed into the night doing math homework. I left at 17 to travel to Ontario to attend the journalism program in Ottawa. I was warned by literally

1. McLuhan, Marshall, War and Peace in the Global Village

everyone in my town that Ontario was dangerous, and I'd never make it. I never made it but I didn't go back. I carried the guilt and the shame of what I witnessed growing up and channeled it into being a reporter, then stumbled unhappily through various corporate jobs as a communications person. I returned to graduate school in 2016.

I've never forgotten the helpless feeling of living in my small community, knowing there was no one to tell when my friends were being hurt, getting bullied and threatened, and knowing you couldn't go to your teacher, your principal, or your government for justice, because they were a part of the racism and injustice you could see with your eyes and feel in your chest. Indeed, officials were actively participating in the racism. Childhood, I have often thought, is all about a feeling of helplessness. Systemic racism, as my BIPOC friends, colleagues and leaders have shared with me, is a deeper kind of helplessness, and about having nowhere to turn for a feeling of safety, for some sense of control or any kind of peace.

It is with this understanding, and with the humility and anxiety I felt that I turned to this project. I've been privileged to work with and be welcomed by Indigenous researchers, and members of the Indigenous community. As a white settler, I come in the spirit of service and atonement for all the wrongs that I and my ancestors have done for generations. I can only hope to help in a small way, and provide some useful service to Indigenous people and willing learners, those committed to healing with and restitution for the Indigenous peoples.

Michael Mihalicz

I am

Michael Carter

I have had the pleasure and opportunity to work over the last 32 years within the Animation and VFX Industry, bookending my creative industry career first as a field archaeologist and now as an archaeological researcher. My career aspirations started in the later 70's and early 80's in public school, watching the first Indiana Jones movies and visiting the Royal Ontario Museum and the then newly built Museum of Ontario Archaeology in London Ontario. In High School I was greatly influenced by the Italian Renaissance; it's artists, community and history. Following my passions of Art, Archaeology and History, I attended the University of Western Ontario for a double honours degree in Visual Arts and Archaeology in the late 1980's and early 1990's. Upon graduation, I started my career as a field archaeologist and spent almost a year excavating a mixed and highly stratified archaeological site called "Oversite" at Hwy 7 and Yonge St. just north of Toronto in Ontario Canada. It was however my time on this site that inspired me to take a new direction into the world of computer animation which was just starting to gain publicity with movies such as Jurassic Park and Terminator 2. I continued my technical training in computer animation at Sheridan College in Oakville Ontario in Computer Graphics and then in Computer Animation. Graduating in 1996, I started what has become a long career in animation and VFX, working internationally and nationally on many children's animated series and helping to develop some of the very tools and techniques animators today deploy in their artistic craft.

My passion however has always been in the virtual recreation of archaeological objects and landscapes. With that in mind, I returned to the University of Western Ontario and completed a PhD in Archaeology in 2017, being one of the first researchers at Western to study virtual archaeology by combining computer animation with archaeological research. My particular interest

is in the virtual and physical reconstruction of pre-contact, North American Eastern Woodlands, Longhouses and this project, along with the virtual longhouse experience, tries to address through my own lens, the archaeological record, the oral histories of our Indigenous communities and the historical accounts of European peoples.

MAIN BODY

'Atson (Enter the Longhouse)

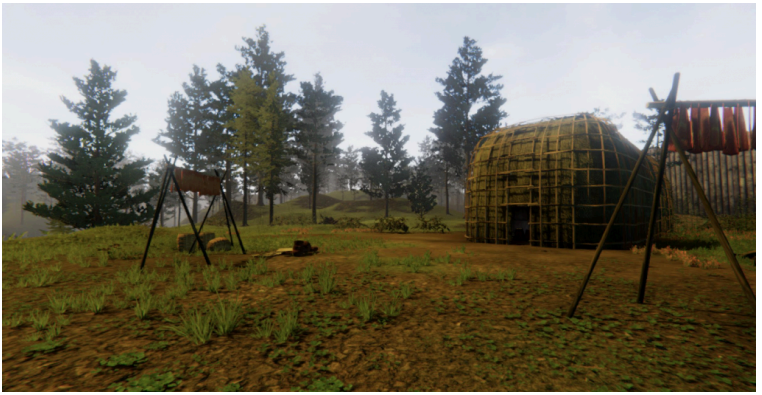
Yiheh! (Welcome)

We welcome you to virtually travel back in time to a pre-contact, 16th-century Iroquoian longhouse. A time kept alive by the oral histories of the descendant people of the Eastern Woodlands and the archaeological record that serves as a reminder of the communities for who's lands we now reside.

Longhouses are majestic testaments to the power of family and community. They are a visual reminder to visitors and community members alike, that a longhouse cannot survive without the cooperation and mutual respect of its residents. That the strength of the community comes from the generations of brothers and sisters, children, parents and grandparents, and the extended family, all under the watchful guidance of the head Mother, who navigates her immediate community through the seasons.

This virtual representation is one of the multiple interpretations of longhouse visualization. It represents an archaeologist's point of view while providing options to reinterpret, mix and create new notions of longhouse living. So by no means is this a static representation. It is a jumping point in which to discuss, compare and contrast the known, the unknown and the constructed knowledge. Like the longhouse itself, this visualization is meant to support community building by providing a framework that is respectful of the past, present and future.

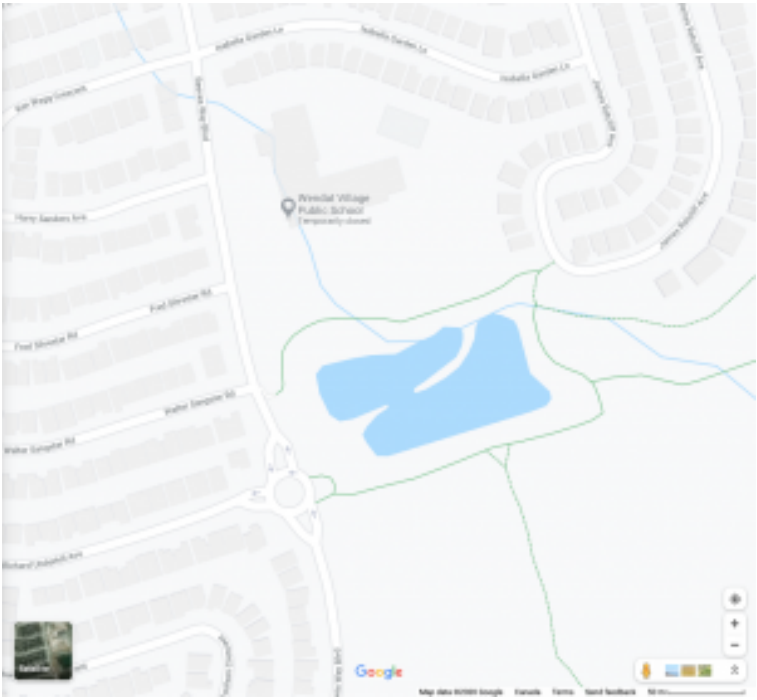
Not one, but many Communities



The specific virtual longhouse you are about to enter is an accumulated (re)visualization of pre-contact longhouses that were located in what is now just northwest of London, Ontario off of Attawandaron Rd. This place is maintained by the Museum of Ontario Archaeology and sits on the large pre-contact Neutral Iroquoian Lawson site, a sprawling and once prosperous 40+ longhouse city with an estimated population of 1900 people.

An interactive or media element has been excluded from this version of the text. You can view it online here: https://pressbooks.library.ryerson.ca/longhouse/?p=35

It is also based largely on the archaeological data retrieved from over 400 excavated longhouses located in what is now Southwestern Ontario. Recent finds such as the Jean-Baptiste Lainé Site, a massive coalesced Iroquoian City, just north of what is today Toronto, with its 50-100 longhouses and a population of 1750-2000 people inspired the look and feel of the virtual longhouse that has been created.



The Jean-Baptiste Lainé Site occupies the vast open space just south of the Wendat Village Public School in Stouffville Ontario.

More than just a mere representation of the archaeological data, this visualization is a culmination of multiple sites, qualitative data, historical writings and most importantly, the oral histories of the descendant communities. Like a physical longhouse itself, it is a manifestation of multiple communities of archaeologists, historians, and descendant communities contributing to the current and ever-expanding knowledge that creates one of many virtual visions of longhouse life.

For Chrome Browser Users Only: Test Your Understanding Below.

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/longhouse/?p=35

Tiondiah! (Let's all make it!)

An Archaeologists Dilemma (Michael's Journey)

Postmolds & Straws Mantle Site, Neal Ferris (2012)

As longhouses were entirely made out of wood, unlike the stone-built heritage of Europe, Greece or Egypt, what remains architecturally of these once vibrant longhouse communities are the posthole stains in the earth, just below the soil line, where the foundations of these massive structures once stood. When a new archaeological discovery of a longhouse community is made, only the outlines of the longhouses and the material culture buried within remain. As such, archaeologists use plastic straws to indicate where the longhouse posts would have been driven into the ground,

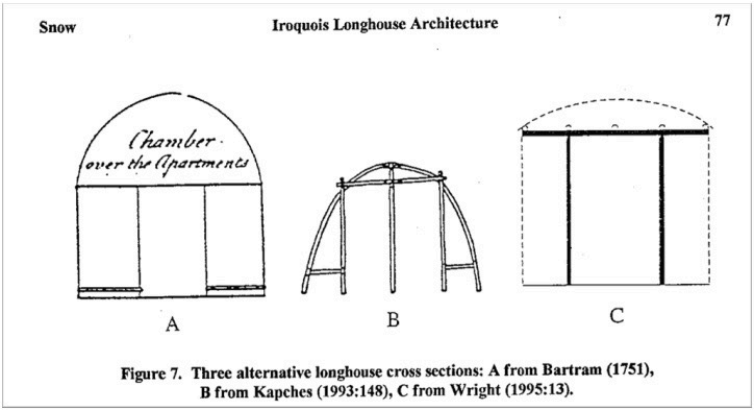
which would then support the outer walls and bark singling. By excavating these posthole stains, we know the types of wood being used, the diameters of the posts, how many posts that were used as well as the width and the length.

"Elevation des Cabannes Sauvages" 1600 – Image courtesy of Pickering Historical Society & PickeringPublic Library reprinted in Dean Snow's 1997 Iroquois Longhouse Architecture

Our "mental image" of a typical Iroquoian or Iroquois longhouse seems to have developed from very little cultural-historical, visual, oral or written material. The Jesuit Relations along with very limited historical images but augmented with a strong Indigenous oral history and has given us what we "think" a longhouse might have looked and felt like. Interviews with archaeological and heritage practitioners also revealed consistency in how modern interpretations of the visual, cultural and environmental aspects of longhouse use continue to be static. Whether the mental image is correct or not, most agree that they can be a long "half cigar-shaped" multi-family residential, ceremonial or public administration buildings made of a wood pole framing structure and shingled with bark.

What we "Think" we Know?

The archaeological, historical or oral histories only give us a slight image of what the longhouses would have looked like from the ground up. Some historical writings or representations such as the one above clearly demonstrates the colonial-eurocentric language and attitudes of the non-Indigenous people. That is where a virtual construction of the known archaeological information, combined with descendant traditional and current longhouse building techniques help to (re)imagine what these architectural wonders looked and felt like.



Longhouse Framing Examples from Snow (1997:77). Reprinted with permission from Dean Snow.

There are multiple variations on the visual representation of longhouse framing techniques, but Dean Snow (A), Mima Kapches (B) and JV Wright (C) paint three varying cultural-historical interpretations of longhouse style which seem to be the most commonly referenced when discussing longhouse look and feel. Each has its own distinct stylistic qualities but

all variations can be interchangeable and are derived from the same archaeological site post hole stains.

However, it is important to keep in mind that the archaeological record itself, does not reveal any real visual guidance above the soil line and thus we as archaeologists are reflexively building visual meaning whether in the field or during post-excavation analysis.

Ontario Archaeologist Christine Dodd examined the archaeological excavation data of over 400 longhouses, collating the basic building dimensions of a 16th-century Eastern Woodlands longhouse:

- An average of 18m's in length.
- Height is as tall as the width (note that the archaeological record only provides data on the width and oral history provides data on height). Generally, the average width is 7.6m's.
- The centre corridor width is 4.0m's.
- Sleeping platforms/family cubicles were generally 1.1-1.8m's in width, 3.7-4m's in length and 1.8-2m's in height.
- The actual sleeping platform itself has been recorded to be anywhere from 0.30-1m off the ground level with the roof of the platform where personal storage was commonly thought to be, being 2m's from ground level.
- The average interior support post was 8-15cm's in diameter.
- Exterior wall post diameter was 1-3cm's in diameter and on average there were 4.5 poles per meter along the length of the longhouse.
- Typical fire hearth spacing was 2.9-3.6m's between hearths. Each hearth support two families on either side of the longhouse.
- Exterior roof and wall shingles were 1x2m cedar or elm shingles.

The difficulty is that most academic literature describes longhouses in a similar fashion, leaving the reader to visually imagine what a longhouse might look like. So our conundrum is, how do these measurements equate visually if they were to be represented?

For Chrome Browser Users Only: Test Your Knowledge

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/longhouse/?p=210

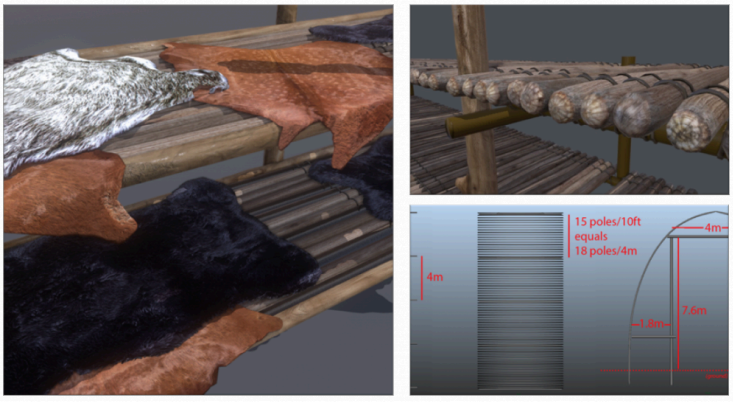
In addition to the basic measurements that Dodd was able to collate through the archaeological site data, there is a discussion between the roofing structure, which is highly dependent on the initial support post or internal skeletal structure of the longhouse. Currently, as discussed above, there are three major internal structural forms or supports that make up the external visual differences in longhouse construction as described in historical accounts that have been theoretically suggested (Snow, 1997; Williamson, 2004):

- Wright's reconstruction of a longhouse at Nodwell suggests a π shaped internal support infrastructure existed which would have supported a visual ratio of 4:1 in height between the main building and a separate arbour roof (1971, 1995);

- Based on extensive historical European oral accounts and two specific visual representations of Seneca longhouse floor plans from the 1700's, Snow suggests that longhouses might have had a 60/40 split between longhouse body and a separate upper roof (1997);
- Kapches, using Iroquoian oral history, suggested that the longhouse walls and roof might have been entirely integrated by long exterior posts lashed at the center roofline forming a continuous arbour effect (1994).

In addition to these three "theoretical" assumptions on the building shapes, there are a plethora of unique building styles and techniques presumably employed prior to contact and most definitely used post-contact by every local and regional Indigenous Eastern Woodlands Nation. So variability and thus building assumptions would be wide-ranging. Thus goal of virtually reconstructing a proto-typical Eastern Woodlands longhouse is to provide a platform for stakeholders to discuss, while at the same time digitally change or add to the narrative.

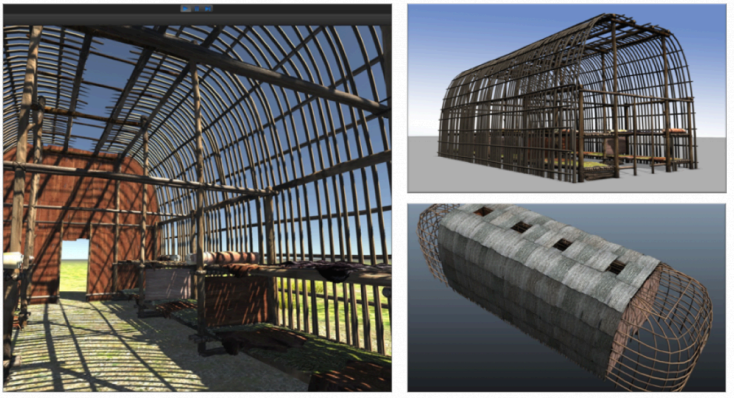
The Unkown



The notion of visual accuracy is a theoretical discussion. There is no way to accurately reconstruct an Iroquoian longhouse from the 16th century. As discussed there were no significant visual representations of longhouses from the 16th century and Oral/Written histories were questionable. We had to "reimagine" what the longhouse might look and feel like purely from the available material. By relying heavily on Dodd's quantitative work and recent longhouse excavation data from the Wendat Mantle Site North of Toronto, it was decided to build a prototypical Iroquoian longhouse as opposed to creating a specific longhouse directly from the archaeological site data.

Everything from how poles would have been cut, to the cordage used for lashing, to whether bark was harvested or left on the poles used for framing was reviewed and tested within the 3D modelling process for the look and feel. External Indigenous and non-Indigenous cultural-historical specialists provided guidance, however, the key element was that we were visualizing the longhouse based entirely on personal perceptions and interpretations of the archaeological data.

We freely chose a pragmatic eclecticism to determine which cultural-historical element or perspective we would use to envision our visual mental map of a longhouse. As such, the "making"; the construction of knowledge through the synergies of skill, tools and context, began to reveal a profound theoretical grounding for meaning-making within virtual environments (Ingold 2011).



As we constructed the longhouse, it was a negotiated process between what we wanted to visualize and what the software, our skill and the final delivery platform would allow. Using Autodesk Maya, an industry-standard animation and VFX software application, alongside traditional lighting and rendering techniques, the test images became photorealistic, which posed problems around the notion of authenticity and authority later in the process.

We also found that we were challenged with probably some of the same building techniques and decisions Iroquoian builders might have encountered during the process of their own physical longhouse construction. The material used would have had its own materiality and thus construction methods and techniques would have been dictated by that materiality. So the virtual building process informed our construction of archaeological knowledge.

We also used the head-mounted immersive VR technology to do virtual site inspections of the build during and after construction. This allowed for almost real-time course corrections if there were modelling assets missing or if we needed to make changes due to construction problems. It was

a unique and surprising method of constructing archaeological thought.

Using a traditional film research technique for scene/set development called “mood boards”, we collated imagery that was both archaeologically/historically representative as well as modern visual interpretations of longhouse construction and use. We appropriated visual references when needed but tried to follow a pragmatic approach to how a longhouse would have looked and felt like. These sources were both Indigenous and non-Indigenous yet provided a commonality in visual referencing, however through a modern lens.

The most difficult task was the acceptance of the visual style as it was migrated from the Autodesk Maya building environment into the Unreal Game Engine, which called into question the "authenticity" of the overall experience. As we migrated the models into the real-time engine, assets such as textures, environments and the models themselves had to be significantly reduced in computational size to allow the real-time engine to perform effectively.

This gave the imagery a game-like look, unlike the photo-

real renderings from the previous Maya related tests. Does photorealism make the experience more “authentic” or is it the ability to actually interact with a reconstructed archaeological landscape that makes it “authentic”? Or could there ever be authenticity when visualizing constructed knowledge?

To enhance the reimagined environment, reconstructions of 16th-century Iroquoian artifacts from the Lawson Site were placed within the longhouse to test perceptions and placement throughout the daily lives of the inhabitants.

The final result was the ability to allow community stakeholders, archaeologists and the general public to navigate our reimagined constructed world in real-time while still getting a sense of how they themselves could be reflexive of their own cultural-historical perspectives.

The visual narrative we were building upon was a sole longhouse outside of the main palisaded village close to the river. This afforded us the ability to keep the model count low in order to increase the speed and quality of the interactive render.

Interactive enivronmetrics such a light, smoke, dust and wind were added. Dirt, fingerprints, creosote, soot, ash and other assumed markers of human existence were carefully placed throughout the longhouse to add to the authenticity of the phenomenological experience.

Props were added to give a sense of tools, objects and artifacts that would have been representative of the particular time and place. Some elements were completely left out such as skins for the doorways or the bark shingle flaps for the smoke holes on the roofline either due to difficulty in representing those elements in real-time, or just the lack of available computing power. Thus considerable internal negotiations occurred based on the constraints of known cultural-historical material and available technology.

We purposely didn't add any avatars or animated characters into the virtual space for obvious reasons around the representations of the "other" and see this as the next step in participatory knowledge building with descendent stakeholders in the future.

Ultimately, the failures of the visualization directly capture the failures of the archaeological knowing. What we don't know we must speculate until a community member can enhance our knowledge through their vision.

Yeienhwi’s (I am Learning)

Engaging with the Past in the Present

As you don your virtual reality (VR) lenses or watch the immersive experience on a screen, you’ll be able to virtually wander through the longhouse, home to members of the Wendat community. You’ll see the bunks where they slept lined with soft furs, you’ll see the roaring fires where families warmed themselves and cooked their meals. As you walk through the longhouse, you get an immersive, intimate sense of the lives of the people who lived in these homes.

A sleeping bunk in an Iroquoian longhouse. Laslovarga – Own work CC BY-SA 3.0 File: Iroquoian Village, Ontario, Canada41.JPG, 3 March 2013, Location: 43° 28′ 9.82″ N, 79° 56′ 55.4″ W

First, we'd like you to consider how the simulation was made. How did Dr. William Carter recreate this longhouse? The simulation is the culmination of a significant amount of primary and secondary research. Dr. Carter conducted archeological fieldwork and consumed the research of specialized archeologists to create this prototypical 16th century Late Woodland ancestral Northern Iroquoian longhouse.

Describe the process here, narrated walkthrough video here.

Add MP4 – (ask Dr. Carter about placing video on Youtube)

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/longhouse/?p=216

Food for thought: How do you build something you've never seen?

Dr. Carter acknowledges in his research that his own implicit biases and lived experiences was an impediment to envisioning the longhouse. He describes himself as a "virtual artisan wayfarer" (Carter, 2017, p. 2), and as such, his approach was one of open-mindedness and a relentless drive to find the *truth* of these residences. This involved field research at archeological dig sites many discussions with First Nations community members and significant amounts of research into varying first-person accounts of life in the longhouses.

What you've experienced or as you are about to experience is the culmination of years of work and research.

The longhouse for the Wendat was one of the prevalent structures within their communities these longhouses were communal, multigenerational dwellings (Carter, 2017, p. 59). This was a residential dwelling that was in used and perfected over 1,000 years. Longhouses were not only used by the Wendat but are prevalent in many cultures around the world.

Based on the research, the historical and archeological consensus was that the average mean width of the longhouse during the 1500-1650 A.D. timeframe was 6.5-7.5 metres. That's about 21 to 25 feet wide. These measurements are estimates

based on plotting potholes found in soil samples. Researchers could plot rough 2-D drawings based on the discolouration in the soil from the postholes and base their findings on that data.

Some longhouses had about 3-5 hearths or fires where meals were prepared and residents warmed themselves; with two family units sharing each hearth (Bartram, 1751; Carter, 2017). Each family had a distinct bunk that was, more often than not enclosed in some way with woven bark or other covering (Carter, 2017, p. 79).

The bunks were raised off the floor by about 1.2-1.5 metres or roughly 4 or 5 feet (Carter, 2017, p. 80; Champlain, 1907). Each families' firewood and possessions were stored under the bunks (Hedenreich, 1972).

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/longhouse/?p=216

Longhouses were more than just a place to sleep. They were key to the agricultural, social, material and cultural life of their communities. According to the research, to be excluded from the longhouse because it was a "annonchi" or an "insult beyond repair" (Carter, 2017, p. 59).

Multigenerational families lived within these bunks. Indeed, many extended families lived in longhouses (p. 70). It was local networks of longhouse memberships that helped to create political, economic and social cohesion in the Iroquoian community. The longhouses were housing technology refined over the course of 1,000 years. Each dwelling could last decades

or more with generations living in the same dwelling from infancy to adulthood (William-Shulle and Allen, 1998).

Exercises

Imagine what it might be like to live with your extended family and your closest neighbour's extended family in a shared home. What would that be like?

You can analyze longhouses using the Medicine Wheel methodology. Think about the ways in which longhouses supported the physical, emotional, intellectual and spiritual needs of the community.

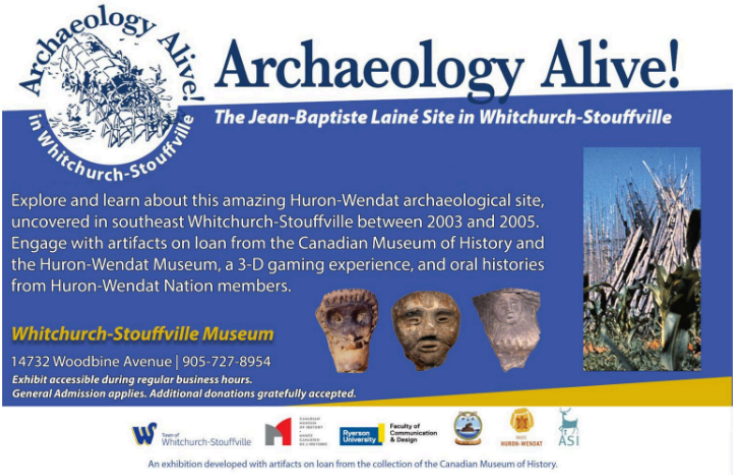
Try an exercise where you contemplate the role of technology – the design and construction of a longhouse – fills the needs of the people who live in them.

The placement of a longhouse settlement was based on a few key criteria. The builders wanted to ensure that longhouses built in a place which had:

1. A good defensive position, occupying higher ground than the surrounding area
2. A clean water source
3. Proximity to arable land for planting crops

Who were the Wendat?

You can learn more about the Wendat with this outstanding overview created by the Whitchurch-Stouffville Museum & Community Centre. You can view the virtual exhibits and learn more about this great nation.



See the virtual exhibit and learn more about the Huron-Wendat by clicking on the picture above.

Wyandot moccasins, ca. 1880, Bata Shoe Museum

Photo: Daderot, 4 July 2013, 11:34:17, Retrieved by https://commons.wikimedia.org/wiki/File:Huron_moccasins,_c._1880_-_Bata_Shoe_Museum_-_DSC00641.JPG Creative Commons CC0 1.0 Universal Public Domain Dedication.

How This Resource Was Made: Author Perspectives

Tanya's Perspectives

> "Every educator should refuse to perpetuate the myth of white superiority." ~ Jane Elliot, human rights activist

In this exercise, working with Ewan Cassidy, the project's Indigenuous research assistant, I assumed the role and developed the recommendations for instructors. In doing the work, I had my assumptions and bad habits challenged as I worked through the material and thought about the larger issues that this project represents. In our first meeting, I spoke to Ewan about some of the "proven ways" of developing cirriculum using frameworks like Bloom's Taxonomy.

In working through the possible approaches using Bloom's Taxonomy, Ewan slumped back in his chair and said, "you just described every course I've ever taken." I realized in that moment that this 'same-old, same-old' approach was not at all a good thing, and not what this project required. We worked to drop all of our previous assumptions and bad habits to build these materials, selecting Black, Indigenous, Persons of Colour (BIPOC) resources, methodologies and frameworks.

To listen to a first-person account of our process press the blue audio buttons in the embedded presentation below.

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/longhouse/?p=125

To locate the root cause of inherent systemic inequities in our daily interactions with institutions, and participation in cultural practices and pursuits, including academia, we must first understand the ideology of white supremacy. White supremacy is defined as the idea that those of European descent, people within the white race, are, somehow, superior to other races. In this ideology, white history and achievement is privileged above all other human activity. White supremacy has played an integral, foundational role in the formation of Canada driven by illegitimate, pseudo-legalistic philosophies of Manifest Destiny placing Christian European-descendants, their goals and desires above all others.

White supremacy is intrinsically interwowen into Canadian and North American cultures and institutions – we are (far too) slowly coming to the knowledge that this belief is embedded in the things we make, say, think and continuously do. This central precept of so-called mainstream North American

cultural practice is so embedded, so ground into all of our minds that we, at times, barely notice it is there.

As a white settler, speaking directly to other white settlers who might be reading this, I know this stark declaration that the ideology of white supremacy underpins our society might cause you to recoil, to protest, or to feel offended. A statement like this, to a white settler, might be akin to a rude awakening from a deep sleep. To deny it, to refuse to accept it, is a wish to remain asleep. As Lee Maracle wrote: "Canadians have a myth about themselves, and it seems this myth is inviolable. They are innocent. They gave us things; they were kind to us. The reality is that Canada has seized vast land tracts, leaving only small patches of land specifically for us, as though they indeed owned everything and we had nothing, not even a tablespoon of dirt."[1]"

As a social scientist and scholar with a quantitative bent (a methodology for which many of our current institutions of current technolopy favour above all else) the systemic racism driven by the ideology of white supremacy is a matter of settled science supported by a raft of almost, at this point, innumerable qualitative and quantitative studies.

Each study lays bare inequities so stark as to resist any quibbles over data points here and there, leaving little question of the cavernous gulf of disparities across every sphere of our current culture. These studies were crafted by scholars who so disspassionately studied this question, at so many different angles that there should hardly be a matter for any serious debate. There can be no serious, both-sides-ism of this question. Disparaties, cavernous ones, exist.

It is so that white male history, achievement, histories, and thought, is prioritized and exulted in the academy. As such, we in academia become part of the machinery of ideology,

1. Maracle, L. (2017). My conversations with Canadians.

and thereby become a mechanism to propagate these perspectives. We can, and some of us are, taking concrete steps to overturn and disrupt these systemic inequities. This project is one such effort.

While, I believe we waste valuable time and resources debating the question, I present one of many such qualitative and quantitative investigations. In an editorial, *Why is My Curriculm White*? Michael Clark (2015) wrote, "question pointing out the lack of awareness that the curriculum is white comprised of 'white ideas' by 'white authors' and is a result of colonialism that has normalized whiteness".[2] The numbers bear this perspective out. A study conducted in 2018 led by undergraduate students at the Paris Institute of Political Studies (Sciences Po), found that only 3.5% of authors assigned to students were racialized, and only 15.45% were women. Quantitatively, the knowledge being shared with undergraduate students is still, in 2018, is mainly that of white males. The study authors said of their effort: "(we) wanted to show who really owned freedom of speech, and to whom it was denied at a systemic level"[3]

As a cultural scholar who has spent years in corporate Canada, and subsequent years in academia studying the question of inclusion, equity and diversity in cultural spaces, I know white supremacy underpins, informs and drives our educational systems, institutions and cultural practices. It is the thread that makes up the fabric of Canadian society. Full stop. Those of us who live in Canada are, wherever we are,

2. Michael A. Peters (2015) Why is My Curriculum White?, Educational Philosophy and Theory, 47:7, 641-646, DOI: 10.1080/00131857.2015.1037227).
3. Pedram, A. (Jan. 14, 2019). White Man Science: Polling Race and Gender in Political Science Syllabi, McGill Daily, Retrieved from https://www.mcgilldaily.com/2019/01/white-man-science/, Retrieved on June 11, 2020

are standing or sitting on stolen land. This project is, again, an effort to provide an open educational resource that showcases the achievement of the Iroquian civilization, and celebrates the culture of First Nations people

eskonyen' ***– Until next time (I'll see you again)***

Annotated Bibliography

Annotated Bibliography

Serious Games – Skills Practice: A Home Visit https://de.ryerson.ca/games/nursing/mental-health/game.html#/

The “Serious Games – Skills Practice: A Home Visit” game by the Digital Educations Strategies team at the G.Raymond Chang School of Continuing education looks at the use of decision based game play with cutscenes to assist the learning for nursing practitioners and students. The game allows the user to interact with the learning module and learn the consequences of decisions without crossing ethical gray-lines and keeping students from immediate danger. The application of decisions made through boxes to click allows for the user to have a sense of control in their learning. If we were to apply strategies from this game, it is recommended to take note of the interaction between the ‘Nurse’ (player) and the ‘Patient’ (npc).

Collaboration for Inclusive Games

A YouTube element has been excluded from this version of the text. You can view it online here: https://pressbooks.library.ryerson.ca/longhouse/?p=143

A lesson on collaboration by Elizabeth LaPensée talks on the trials and tribulations of collaborating with racialized groups for their representation and inclusion in video games. LaPensée speaks on looking at and being aware of the intentions one has put in place when possibly using issues that are "hot right now," (LaPensée, 2017) as "this work is for life" (LaPensée, 2017) and what we as developers put out into the world are timeless and must be timeless at the same time. LaPensée highlights that to truly be collaborative, we as developers need to continuously "listening to feedback and being responsive to the communities" (LaPensée, 2017) that we are in a partnership with; By opening up a respectful channel of conversation between the community and the development of the game, we are able to take the game in a route that would be authentically representative of these communities. LaPensée

touches on the importance of being aware not to appropriate the issues that these groups are experiencing and allowing them to have their own voice in these games.

Harvey, Kendall (2019). Return to the Rez (Podcast), Retrieved from http://returningtotherez.libsyn.com Retrieved on Feb. 19, 2020.

This Master's thesis from Columbia University student Kendall was illuminating. Via interviews with Indigenous students in the U.S., Harvey uncovers the pressures and rewards for graduates of post-secondary First Nations students. There is discussion of the systemic and institutional issues faced by students, as well as the community pressure to "give back" to their communities. Not only do students have the pressures of post-secondary but they pull back to their reservations. This desire to "give back" is offered willingly and I was struck by the themes of family support and understanding these students were given through their education journey. I was also incredibly heartened to hear how these success stories were not simple ones, but rather the students embraced trial and error, and worked hard (harder than they should have had to) to find the right institutional fit. I would love to share this podcast with all post-secondary students as the message is one of community, the need for support and that 'success' isn't necessarily a straight line or found on the conventional, 'tried and true' path. This is instructive for this project.

Fataar, A. (2018). Placing Students at the Centre of the Decolonizing Education Imperative: Engaging the (Mis)Recognition Struggles of Students at the Postapartheid University, Educational Studies, 54:6, 595-608, DOI: 10.1080/00131946.2018.1518231

This is a very powerful piece for this project. It deals with misrecognition in education. This is defined as not understanding who the students are, creating curricula that doesn't reflect them, and institutions that don't support them.

"Misrecognized students develop a complex life." (p. 600). Misrecognized students adopt "survivalist educational navigations and practices" (p. 600). The article also makes the argument that even a South African school system has been co-opted by "techno-modern instrumental reason"; this instrumental reason has replaced racial discipline. The educational experience for Black South Africans has been fraught with "subtle and insidious forms of inequality" (Burke, 2012).

LaFever, M. (2016). Switching from Bloom to the Medicine Wheel: creating learning outcomes that support Indigenous ways of knowing in post-secondary education, *Intercultural Education*, 27:5, 409-424, DOI: 10.1080/14675986.2016.1240496

This guide could provide the framework we've been searching for the Longhouse OER project. LaFever (2016) proposes a reconception of pedagogy away from Bloom's Taxonomy to the Medicine Wheel. Most classroom instruction uses Bloom's Taxonomy – which divides learning into the mental, physical and emotional. Indeed, LaFever (2016) notes that secondary and post-secondary ignore the physical and emotional as well, with only some disciplines touching on those aspects such as counselling which deals in emotions and the trades which deal with hands-on physical tasks. The Medicine Wheel proposes a fourth element which is the spiritual.

This fourth aspect is completely ignored in traditional Western/North American pedagogy. How might the spiritual be integrated into the classroom? LaFever (4) proposes that the spiritual can be woven into a learning environment in the following ways:

- Honouring – a recognition that we are all connected to the earth and that things exist outside of materiality and our own self interest

- Attention to Relationships – an understanding that relationships and community is key to learning and living; supportive relationships inside and outside the classroom are key to thriving

- Developing a Sense of Belonging – Helping learners find and understand their place in the world

- Feeling Empowered to Pursue a Unique Path – Guiding learners to find their unique place in the world and guiding them along their journey

- Developing Self-Knowledge of Purpose – Helping a learner become self actualized as a "unique entity in the group."

CBC. (2020, March 26). 'Language is key in all of our teachings': Land-based learning must include language component, educator says. *CBC News.* https://www.cbc.ca/news/canada/thunder-bay/education-lakehead-biitigong-wild-rice-harvesting-1.5501300?cmp=rss

This article talks about a progressive joint-program between Lakehead University and the Biitgigong Niishnabeg Nation. Randy Trudeau, part of the founding group of the program speaks on the benefits of the program, but also that without the language the lessons taught may fall flat. He says that, "If you don't have the language, you're missing the most important ingredient in teaching our youth about living off the land and about the land." (CBC, 2020) The article does back our earlier discussions in this project of the importance for the implementation of the lesson's translation to indigenous languages.

Boutsalis, K. (2019) Before Toronto. *Spacing, 52*. 30-31.

An article that talks about the lack of evidence of the Original Toronto inhabitant's history; the First Nations people who lived in Toronto before its colonization. Boutsalis speaks on the

amount of rich cultural history that can be uncovered through archeological artifacts, and how the settlement of Toronto by Europeans was more a, 'when in Rome' scenario in regards to the Haudenosaunee, the Huron-Wendat, and the Aniishinabe people. This article brings an interesting point to the Longhouse-OER project; That we are teaching in a city that was appropriated.

Engel, E. (Dec. 26, 2019). Coding, robotics industry join forces to Indigenization, *Barrie Today*. Retrieved from https://www.barrietoday.com/local-news/coding-robotics-industry-join-forces-to-create-indigenization-1985178

This article has direct applicability to the project because it involves questioning existing Western frameworks and approaches. The piece discusses the work of a 3rd-year PhD Jon Corbett who is a beading portrait artist who is creating a new coding language based on the Cree language. It allows coders to implement the Cree Syllabic Orthography in interactive media artworks. Corbett is a programmer and artist, and noticed that traditional programming languages are very linear and inflexible. Corbett took the looping processes from beading and applied it to programming. In this Corbett said, an Indigenous computing framework "favours cultural practices over computational efficacy." His project is funded by CanCode.

Dorland, S. G. H. (2018) The touch of a child, *Journal of Archeological Science*.

This is a fascinating piece that provided key information about the social rhythms and practices of an Iroquian village via an in-depth analysis of pottery. The author was looking for evidence of childhood in artifacts and found them in the fingerprints and fingernail impressions on pottery. The article quotes Warrick (2008) that anywhere from 45-55% of the northern Iroquoian population were children and juveniles. Often girls learned pottery from their mothers. Many of the artifacts were found in the Keffer village site located north of

Toronto. Pottery lessons began at the age of 5-7 and a potter would be considered skilled after 6-8 years of dedicated practice. The analyses of fingerprint and nail indentations allowed the author to conclude that learning assemblages of pottery found were made entirely by children. This article provided insight into the lives of children in these villages.

INSTRUCTOR RESOURCES

Introduction

The instructor content was imagined and designed by the authors after consultation with member of the Ryerson instructor community, as well as extensive research into pedagogical best practices.

The authors, using the Design Thinking methodology, created materials based on the Medicine Wheel framework. This framework enabled the instructional design team and the authors to create supportive materials that best mapped to the physical, emotional, intellectual and spiritual needs of both instructors and students. The Design Thinking methodology is used to carefully imagine and map the pains and objectives of a given audience. It is typically done using a stepwise process that starts with empathizing with your target audience.

The authors based their decision-making upon the following understandings of how instructors might be motivated, sensing and empowered by materials.

Design Thinking asks that you imagine how your audience might be:

Thinking and feeling: Instructors are resource- and time-strapped, they want something easy to use, turn-key and with minimal need for rework

Hearing: That experiential, full-sensory and immersive learning is a powerful tool for pedagogy

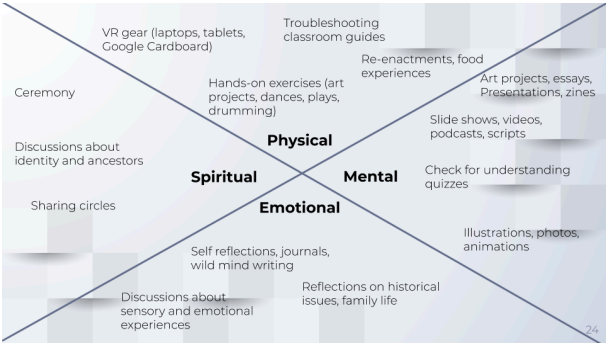
Seeing: There is a limited (but growing!) pool of Indigenous educational resources; a limited sample of digital cultural heritage approaches and processes

Saying and doing: Instructors are looking for a way to bring this into existing coursework and do so in a way that is informed by Indigenous educational frameworks, and integrate the content into existing learning in a way that is engaging, informed and respectful

Pain: Need to do more with less

Gain: Improve and enrich student experiences and understanding of course materials

Based on mapping an instructor's journey, we have created the following resources.



Pobuda, T. (2020). Original Design Thinking Conclusions
.

Quick Links

Physical – Classroom Management Guide

Physical – Simulation Walkthrough

Emotional – Images and Questions

Emotional – Creator Podcast

Intellectual – Learning Game

Intellectual – Check For Understanding

Spiritual – Student Assignments

Physical - Classroom Management Guide

Classroom Management – Tips and Strategies

Using VR in the Classroom (Online and Offline)

You and your students are about to use a 3D simulation to learn about the history and lives of the Wendat people. Simulations are a powerful pedagogical tool. Simulation has been correlated with increased empathy and a deeper learning experience (citations). Special care needs to be taken to ensure that this is an inclusive and effective learning experience for all students.

That process starts with a contemplation of the medicine wheel. As the instructor, you are encouraged to complete the total student, as a physical, mental, emotional and spiritual being.

Physical

First, think about their physical state. Where are they sitting? Are they at home or in the classroom? Consider their physical wellbeing: are they hungry, thirsty, tired, or distracted? Did you know that 9 percent of young secondary learners worldwide don't have a quiet place to study in their homes? Think about those constraints and plan your learning content accordingly. If they are working remotely, they might not be able to access online learning materials quickly or easily.[1]

Did you know that, based on a 2017 analysis, only 37% of rural Canadian families had Internet access to high speed ~50/10 Mbps compared to 97% of urban-dwelling families. Indigenous households have even more limited access to high-speed

1. Reimers, F.M., Schleicher, A., (2020). A Framework To Guide an Education Respone to the COVID-19 Pandemic, OECD, Retrieved from https://www.hm.ee/sites/default/files/framework_guide_v1_002_harward.pdf, Retrieved on June 8, 2020

Internet, with only about 24% of households having Internet speeds of 50/10 Mbps. Even mobile networks have limited, spotty coverage across Canada, while 99% of Canadians have some access to mobile services, there are areas of Canada where the coverage is spotty.[2]

Your students might not have access to the gear and the technology tools that they might need or want to deepen their experience. Your students might not have access to VR gear. This is why we've created, low-barrier-to-entry experiences that your students can access. This was done with the understanding that the computing power required to generate a high-fidelity, 3D, immersive experience is not yet possible with most computers available on the market today[3]. NVIDIA, a North American technology company, has claimed that 99% of computers on the market can't handle the processing demands of immersive virtual environmental technology (IVET) might be out of reach for most Canadian households[4]. According to a Pew Internet Research study published in 2017, nearly three in every ten U.S. adults making less than $30,000 a year in household income don't have a smartphone, and nearly five in 10 don't have home broadband internet services or a traditional personal computer[5]. The IVET experience is out of reach for most people.

Given the limited access to the technology, many who do use simulation in full virtual reality form report getting disoriented

2. CRTC Communications Monitoring Report 2018 https://crtc.gc.ca/pubs/cmr2018-en.pdf
3. Neiger, C. (2016) Virtual reality is too expensive for most people — but that's about to change, The Motley Fool, Sep. 8, 2016, 7:44 PM
4. Robertson, A., N.D., The Ultimate VR Headset Buyers' Guide, The Verge, Retrieved from https://bit.ly/2MKbqWg
5. Anderson, M. (2017), Digital divide persists even as lower-income Americans make gains in tech adoption, Pew Research, Retrieved from http://pewrsr.ch/2nB4eSF

or even motion sick when exposed to 3D simulation content. The 2017 study accounted for this common complaint by limiting exposure to 12 minutes, and requiring participants to complete a Simulator Sickness Questionnaire to determine the participants physical sensations during and after the VR experience exposure[6]. This is why with simulations and walkthroughs are limited to 12 minutes per participants to reduce disorientation and motion sickness. A best practice approach for in-classroom virtual reality consumption should occur in a swivel chair with armrests to give freedom of motion and the ability to turn. The impulse to physically turn to experience the world of a 360-degree VR environment is strong. The physical risks of dizziness, disorientation are real and should be planned for.

Emotional

Consider your student's emotional state. Are they anxious, sad, grieving, excited? Studies have demonstrated that there's a correlation between the emotional state of learners and their capacity to take in new information. Emotions can have a positive or negative impact on cognition, decision making and learning[7]. Unchecked negative emotional states like anger, frustration and boredom have been tied to poor behaviour, low motivation and impairment to the establishment of long-term memory channels[8] People under significant stress are

6. Schutte, N. S., & Stilinović, E. J. (2017). Facilitating empathy through virtual reality. Motivation and Emotion, 41(6), 708–712. https://doi.org/10.1007/s11031-017-9641-7
7. Isen, A. M. (2001). An influence of positive affect on decision making in complex situations: Theoretical issues with practical implications. Journal of Consumer Psychology, 11(2), 75-85. doi:10.1207/153276601750408311
8. Pekrun, Goetz, Titz, & Perry (2002). Academic Emotions in Students' Self-Regulated Learning and Achievement: A Program of Qualitative and Quantitative Research. Educational Psychologist, 37, 2002 (2)

unable to take in new information in order to learn new things, and can not rationally determine the right learning strategy which negatively impacts their ability to succeed academically, professionally and socially[9].

This is a helpful mindfulness exercise to help centre your learners and open them to taking in new information. This Creative Commons resource, a three-minute breathing exercise, was created by Peter Morgan of Free Mindfulness[10].

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/longhouse/?p=303

Mental

How can you stimulate your students mentally? Stopping to ask questions and gauge your students understanding helps to enhance learning. You need to draw out student voices in order to engage your class. Frequent questions ensure rather than being the 'sage on the stage', you help your students as the 'guide on the side.' As such, the sample lecture that we have included in the materials ask frequent questions throughout. Remember to leave plenty of time for your

Retrieved from http://kops.uni-konstanz.de/bitstream/handle/123456789/13885/Pekrun_Goetz_2002_academic%20emotions-.pdf?sequence=2&isAllowed=y

9. Chakraborty, A., & Konar, A. (2009). Emotional intelligence: A cybernetic approach Springer-Verlag.
10. Morgan, P. (2020). Three Minute Breathing Exercise, FreeMindfulness.org, Retrieved from http://www.freemindfulness.org/download, Retrieved on July 27, 2020.

students to answer. In the Student section of this resource, there are interactive learning games, quizzes and experiences to stimulate your student's intellect during this lesson.

Spiritual

As noted earlier, his fourth aspect is completely ignored in traditional Western/North American pedagogy. The spiritual dimension might enter the classroom (online or offline) if you help your students understand how we are connected to the land, outside of considerations of our own self interest, and seeking of wealth[11]. The spiritual can also be accomplished by creating a physical or classroom environment is by paying careful attention to relationships within the learning environment and without, nurturing relationships in the community. The spiritual is also brought into the learning environment by helping students think about their place in the world, asking that they explore their current and past contexts (such as their family's history). Some of our assignments allow students to do this kind of self-reflection, artistic projects and other creative activities[12].

11. LaFever, M. (2016). Switching from Bloom to the Medicine Wheel: creating learning outcomes that support Indigenous ways of knowing in post-secondary education, Intercultural Education, 27:5, 409-424, DOI: 10.1080/14675986.2016.1240496
12. LaFever, M. (2016). Switching from Bloom to the Medicine Wheel: creating learning outcomes that support Indigenous ways of knowing in post-secondary education, Intercultural Education, 27:5, 409-424, DOI: 10.1080/14675986.2016.1240496

Physical - Simulation Walkthrough

Simulation Walkthrough

<video here>

A YouTube element has been excluded from this version of the text. You can view it online here: https://pressbooks.library.ryerson.ca/longhouse/?p=305

Lecture to support the video here

Emotional - Images and Questions

Slideshow/Gallery

The following gallery shows images from the longhouse and its interior combined with questions that you might ask your class.

The questions embedded in the slideshow are as follows:

1. Imagine what life would be like in a longhouse. What do you imagine that would have been like?
2. This is an image of the hearth. Imagine meals being made, and what things might have been like when it was cold. What do you think?
3. Imagine the community effort that went into building these longhouses. Have you ever participated in building a home or any kind of dwelling? What was that like?
4. Think about how you or your family store food. How much food do you have in your home?

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/longhouse/?p=335

Emotional - Creator Podcast

This content allows learners to understand the motivations and feelings of the authors. This allows students to connect emotionally with the creators of these resources and tools.

Audio Podcast From Resource Author

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/longhouse/?p=311

Intellectual - Learning Game: Longhouses Around the World

The longhouse is a residence type that is used by peoples all around the world including Asia, Europe and North America. In this learning game, students will be tasked with dragging and dropping the correct picture with the corresponding area of the map.

Answer Key:

By Arnold C – Own work by User:Buchanan-Hermit (Arnold C), Public Domain, https://commons.wikimedia.org/w/index.php?curid=837661

This is a picture of a North American Pacific Northwest longhouse that might have been found by the peoples of British Columbia, Canada.

By Sven Rosborn – Own work, CC BY 3.0, https://commons.wikimedia.org/w/index.php?curid=4921202

A Viking longhouse (recreated) that is located today north of Gothenburg Sweden.

Doron / CC BY-SA (http://creativecommons.org/licenses/by-sa/3.0/)

This is a Mnong longhouse located in Vietnam in the Central Highlands.

Pierre5018 – Own work CC BY-SA 4.0Huron-Maison-Longue-Reconstituée-Extérieur 01.jpg Created: 3 August 2012

This is a reconstruction of a Huron longhouse in Quebec, Canada created for the Canadian film Black Robe.

This quick and fun, drag-and-drop game is also found in the Student Resources section.

Learning Game

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/longhouse/?p=315

Intellectual - Check For Understanding Quiz

Check for understanding quizzes

This fun exercise can engage your students as part of an online video conference or during class where you can encourage them to say the answer aloud.

Answer Key:

London

For Chrome Browser Users Only: Test Your Understanding Below.

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.library.ryerson.ca/longhouse/?p=331

Spiritual - Student Assignments

Created by Made from Nous Project

The Houses Of My Ancestors

Assignment Sheet

Assignment Instructions: What kinds of dwellings did your ancestors live in during the 16th century? Do a bit of research online and find out.

Then draw (roughly) what their homes looked like. Feel free to add any notes about what you learned. The quality of your drawing will NOT be assessed. This assignment is more about research and discovery about your ancient roots.

You are encouraged to think about how the way that your ancestors lived and how their housing technology informed their culture (or vice versa). In addition to the drawing, write a 200-word post with attributed images.

Where did your ancestors live in the 16th century ? You are encouraged to think about how the way your ancestors lived, how their housing technology informed their culture – write a 200-word post with attributed images (includes a sample assignment from module creators). Download assignment sheet.

Created by Iconstock
from Noun Project

My Longhouse

Assignment Sheet

Assignment Instructions: This is a fun exercise we can all do in class. Based on what you've just learned, draw your ideal longhouse from memory. Consider who would live there with you. What kind of food do you have stored? What special items will be in your longhouse? What pets?

There's no wrong way to draw your longhouse, this is your creation. You are encouraged to imagine how you and those you care about would live.

This is a fun exercise you can encourage your students to do in class. Based on what you've just learned, draw your ideal longhouse from memory. Consider who would live there with you. What kind of food do you have stored? What special items will be in your longhouse? What pets? There's no wrong way to draw your longhouse, this is your creation. You are encouraged to imagine how you and those you care about would live. Download assignment sheet.

This is where you can add appendices or other back matter.

Acknowledgements

Meegwetch

Mîkwêc

Naqumik

Anushik

Marsi

Niá:wen

This project would not be possible without the support of the Ryerson Library including Sally Wilson, Web Services Manager, Carol Shepstone, Chief Librarian, Fangmin Wang, Library Information Technology Lead.

Special thanks to Cristina Pietropaolo for her editorial brilliance and consultation throughout the creation of these materials.

The following project contributors and reviewers provided guidance and content that informed the direction of this module including:

<list presentation attendees>

Community Recommendations

On June 29th, 2020 we held a small community consultation through the Ryerson Collaboratory with instructors and industry members, in an effort to share with the community what we had done, and to explain our approach. In doing so we received a large amount of feedback saying that rather than coming to the instructors, that we should consult with the Haudenosaunee Community directly. It was also underscored to have elders and/or knowledge keepers to speak for this press book.

Transcript of Simulation Walkthrough

Longhouse 3D (Re)Visualization: Guided Walk by Dr. Michael Carter (Edited Transcript)

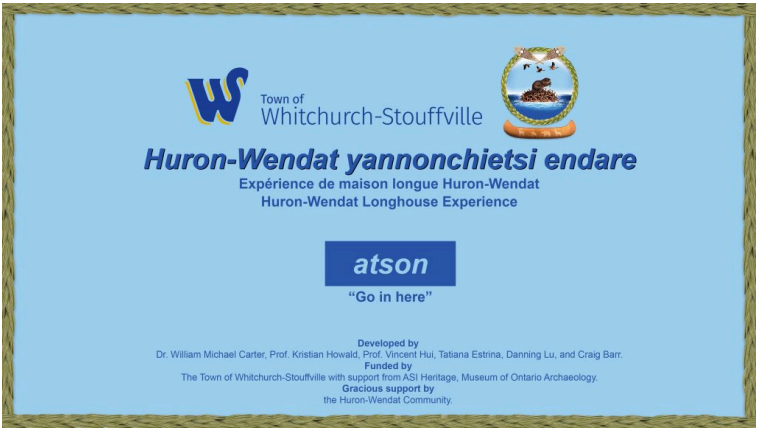
Michael Carter: Thank you everyone for coming together to have a virtual walkthrough of our Longhouse experience.

We talked a lot about the fact that longhouses were representative of community-based environments and there were matriarchally controlled.

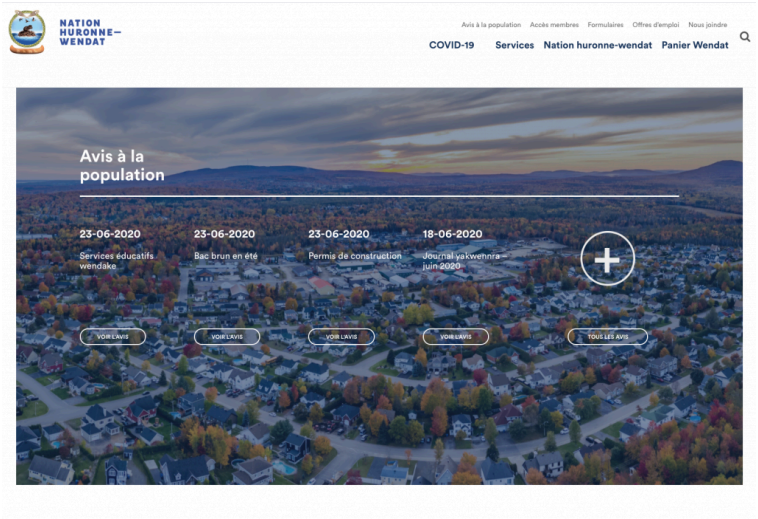
So each longhouse had its own family or extended family based on the matriarch's lineage The village itself, whether it was two or three longhouses or a hundred longhouses were also controlled by the family matriarchs.

So it was very important to understand that community and family were a key part of Indigenous longhouse living. This was primarily based on research that has been made through oral histories, through the historical written histories that we've spoken about previously, and about our own modern-day perceptions of what longhouses were like before (European) contact.

(What we see here is a splash screen and the project was actually developed in conjunction with the town of Whitchurch-Stouffville and the Huron-Wendat Nation)



The Huron (Wendat) was a community that lived in an area of the Eastern Woodlands which now includes the Whitchurch-Stouffville township. Unfortunately, the *Nation Huronne-Wendat* community relocated to Northern Quebec during the time of colonization by the British and the American peoples, so there is a history of displacement and of loss with their original lands. Today they are a vibrant community that is deeply tied to the traditions of their ancestors.



So we're dealing with a particular area that the Descendant

Community actually has little current physical connections to the land but has a lot of spiritual connections to it. This is really really important for us to understand that they're displaced people. They had to move to a completely different environment, to a different Province, in order to survive.

The Whitchurch-Stouffville landscape continues to be the traditional lands of the Huron (Wendat). As such, our splash screen acknowledges this community perspective and acknowledges that numerous people worked to develop this virtual representation of the longhouse. In reverence to the community, all efforts were used to ensure the Huron-Wendat language or French was used and then English.

We really struggled with trying to figure out how we get into this experience in the first place and our community leaders suggested that you enter a longhouse by first asking people to come in. So as the button (*atson*) that appears on the splash screen is a request to ask to come in. It is basically "going (in) here" and that was our way of inviting people to join us on this virtual experience.

(So I'm just going to click and go into the environment and there's a set up seeing here and we're somewhat looking over the viewshed.)

In archaeological terms, a viewshed is a prime piece of real

estate and that is where ancient peoples whether Indigenous or ancient Europeans or Middle Eastern people would live. From these people's perspective, they knew the land very well. They were connected to the land. They understood the land and in this particular case this longhouse occupying the space that is rich in agricultural space, rich in raw materials to build longhouses, as well as to build the palisade that you see in the background, and it's close to a water source, and that's very important. Not only for transportation purposes (the water) but for their entrepreneurial approach to trade, not only amongst their own communities but a broader trade across all of North America. So the current view source perspective is that the longhouse in our virtual space occupies a prime piece of real estate.

Now, what you will also notice is that there's a palisade in the background and the palisade is made up of a defensive barrier. This is actually outside of the palisade. An external longhouse's key functions were to offer an area for guests to be invited to stay. Longhouse settlements were tight-knit groups, so if you weren't necessarily part of a matriarch's lineage, there was a little bit of hesitation to allow you to directly into the village itself until such time that you were deemed welcomed into the community.

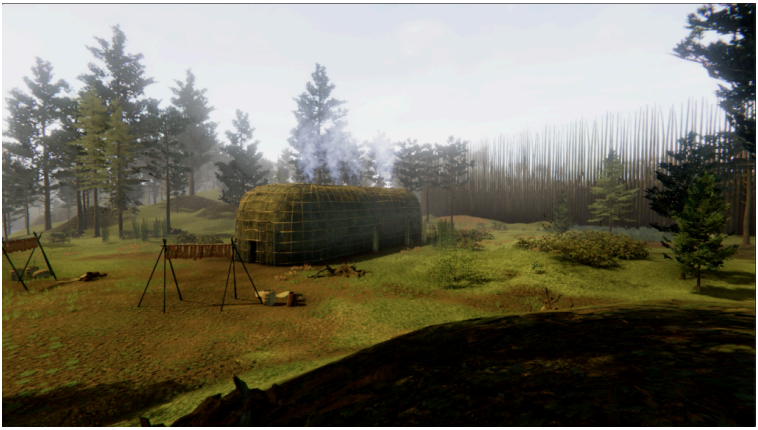
This (virtual) longhouse, in particular, had two kinds of functions; it's a guest environment and the other one is that it's a working environment of which fishing and hunting would have occurred during the summer months. Sometimes they would have hunting lodges just slightly outside the village in order to facilitate closer access to the water sources and to the hunting grounds.

I mentioned previously in our other interview that the Jesuit Relations were a series of writings that were written by Black Robe Jesuit priests from France. They were part of the first group of colonizers that would come over from Europe into Indigenous North America. Their ill-conceived eurocentric role

was to try to convert the Indigenous peoples, whether they liked it or not, to Christianity and the Jesuit writings were really a memo to their bosses back in France. Essentially they were saying: *Hey, look at me. I'm doing a great job here. I'm converting all these people whether they like it or not or whether they wanted to be converted or not. And you know, send more money, send more people, please after I'm finished my job (here), give me a good position back in France*.

So the Jesuit Relations (writings and personal attitudes) were filled with these sorts of glorifying and self-glorifying accounts of their adventures within Native North America, but in reality they weren't very much welcomed by the Indigenous communities for obvious reasons. They were strange and all the people (Black Robes) had very strange customs. If they were invited to stay within the village, they actually stayed outside in these guest longhouses that you see here. However, from their perspective, these were in their minds the longhouse(s) that represented how everyone lived.

So these guess longhouses, especially the ones that the Jesuit Priests were staying in, would tend to be dilapidated or leaky or be infested with rodents and so forth and that was because they were uninhabited, and no one was staying there on a regular basis. The Jesuits would tell the story about these longhouses as being creaky, dilapidated places that were horrible to live in. But in reality, what they were doing was living in an old shed in the back of the backyard of the longhouse community and they (the Jesuits) didn't have access to the grander, more sophisticated spaces that the local community were living in.



So as we move in you see in the longhouse where there's smoke coming out of the smokestacks, there are effectively holes that are cut from the top of the longhouse. We're walking through and seeing meat that is hung from drying racks, and that means would be both fish and venison as well as other types of meats, animals smaller game and so forth. The look and feel we're trying to give for this virtual experience was really to be sometime in the midsummer getting close to stocking up on the winter provisions. And so forth.

The longhouses were traditionally long in the sense that they could range from 18 meters to 72 metres, which was massive. Massive amount of family families that can live in them and as

we're walking through you can hear that we've added sounds of people playing and dogs barking. With these sounds, that's more to give the space more life.

And I'm just going to stop here as we entered into the vestibule or the front entrance. We've purposely not included any virtual characters within this representation and that's because quite frankly, all of the people working on the virtual production team in this particular project were not Indigenous peoples. As we aren't part of the community, it wasn't our place to be able to visualize the ancient people who lived in these longhouses. We wouldn't speculate what a pre-contact person would look like from a 3D character perspective and must engage and consult the Wendat community in the future in order to add virtual representations of people.

So what we're getting is a sense of a longhouse that's empty which is completely different than what their real longhouse would have been. A longhouse would have had anywhere from six to sixty family units in the family sleeping/quarter areas. Generally, these family units would be a mother and the husband would have been from outside of the community because men were invited into villages and into Matriarchal longhouses based on the skills and their ability to provide for the community. They would have their children there, there would also be grandchildren and there would be multiple

brothers and sisters who would be potentially living in what the Jesuits had described as condos or apartments within the longhouse themselves.

A typical Eastern Woodlands (Ontario/Quebec) longhouse was anywhere from about seven meters to 7 and 1/2 meters wide. We know this quantitative data from the archaeological record, and those longhouses would expand and contract based on how many people lived in it at that particular time.

So as the Matriarchial extended family grew bigger they would take off the vestibule which is the front end of the longhouse, (the piece that we're looking at right now) and they would take that off and then they would extend the longhouse to make it larger to create more apartments for the new family members. We know that longhouses were generally wide as it was tall, which comes from oral histories from both the Jesuit visitors as well as from the Indigenous communities oral histories. We know there is evidence that multiple types of expansions were used in order to create separate apartments.

So now we're in the vestibule and have represented the storage area quite sparsely. It's important to note that when we're dealing with our (Indigenous) communities/partners, that when they first engaged with this space, what they're saying is "wait a second. There's not enough food here. We've got families to feed." This is where the harvest was stored. We

had to curate a little bit of what we think would have been used. So there are apples that are inside leather or bark baskets. There are other types of bark baskets, containers that would be to hold grains and other vegetables, herbs or staples, or the three sisters; squash, maize and beans.

And hanging in the rafters above (in the picture about the rafters are filled, but the light dim as there are no smoke holes in the vestibules themselves), there would be meat so that would be hanging that had been cured already because obviously there's no fire that's occurring in the vestibule. A vestibule is really an entry place for people to walk into so the meat would have had to have already been cured because fresh meat was cured with smoke. So if one is going to smoke meat, you need to be in the main section of the longhouse itself.

On the door, you'll notice it has a lot of handprints and this was an added interpretation that we had as archaeologists that people would be walking into the longhouse on a regular basis and as they're walking in they are touching the side of the frame of the doorway. So it's a little bit of a detail that allows us to indicate that there is human occupation here. In the doorways, they generally had during the fall and winter months, a skin or a bark covering to act as a door, that would keep the weather and bugs out as best as they could. Unfortunately for this particular project, we actually made the doorway high.

At the time, our typical height for an individual Indigenous person and French person actually in the early contact pre-contact was about five foot eight. So we've made the doorways that big just to allow for the virtual first-person experience to be okay for maneuverability. But in a traditional sense, the front opening of the longhouses would have been much shorter forcing people to bow and bend down as they walk into the longhouse themselves. This was a defensive technique to ensure that if they are coming into the longhouse and you're weren't welcomed, the people inside the vestibule protecting the longhouse had an opportunity to render the individual incapacitated or capture the individual before they wreaked havoc within the longhouse itself.

Now, you're starting to see fire pits. There are several different types of (fire) hearths that were used; one for heating and one for cooking for each family unit. We have added the sound of people coughing and as you look up into the rafters, you'll notice that there's a smoke layer that is caught in the rafters, which is based on the Jesuit writings.

The Jesuits describe the roof of the interior of the longhouses being arbour-like or rounded like and at the top of the longhouse would be holes that would allow for the smoke to escape but there would still be a substantive feature about the longhouse itself and that would help cure the meat as well

as cause problems medical problems for the people who live there.

I'VE STOPPED HERE

There was a study that was done in the 1970s when a group of archaeologists decided to occupy one of the longhouses that long lock just west of London and during a snowstorm, a major snowstorm and they loaded the put lots of firewood in they closed up the Longhouse but made the smoke hole slits open.

And then (the archeologists) started up the fires and realized almost immediately that they couldn't breathe. And so they rushed outside. They came back that they played with how different types of woods would create different types of smoke and so forth. What they came up with or what they realized, was that the smoke layer no matter what they did always stayed at the four-foot level.

And remember I told you that people are generally the average height of most men in almost all Indigenous men. in the Eastern Woodlands area in Ontario or what we call Ontario today was about five foot eight.

So if you're standing your head is actually a foot, or bit or more than two feet above the smoke layer. So you're constantly breathing in the smoke of all the fireplaces going in the longhouse. And if you had a longer longhouse you'd have more fireplaces. So what we've what we've discovered through the archaeological record is that age 35 or 40 was generally the life expectancy of most men and women who lived in longhouses and this and if you look at the their skulls or their rib cages when they've been with they've been found in terms of archaeological excavation.

We realize that there's a lot of cancer and a lot of smoke inhalation problems. We want to represent within this virtual longhouse, the fact that there was a lot of smoke and so the sound of people coughing really demonstrates that. That we would never be able to get away from the smoke.

The Longhouse itself would have a series of vestibules or

compartments again. I'm visualizing what I believe is an interpretation of the archaeological record in the oral language.

And what I think is really important here as we sort of stare down the long version of longhouses that this is just my interpretation. push it the use of 3D technology allows us to provide a template of assets such as how the longhouses are built and whether or not we can make them seven meters wide or seven half meters wide if we can make them taller or longer if we add more fireplaces to them all of these elements within a 3D procedural environment allows each individual who Is connected to Longhouse living whether it be the descendant communities or the archaeologists or the school kids coming in to learn about indigenous history. Each person will have their own sort of interpretation of their own visualization of what longhouses look like and this technology allows us to do that.

So what you're seeing here is my interpretation of the bat and there' one of those interpretations was that there were birch bark panels that separated the community or the family units into condos apartments that that's I'm taking this information from other archaeological sources and some other oral histories, but there are opposite histories that say that there were no covering. So it was completely open to everybody and it was one large communal environment. So again, again, what we're seeing is a personalized interpretation that should not be misconstrued as being accurate in any way whatsoever. So I'm just really visualizing the information that you're seeing. This information could be everything from birch bark pods to the types of foods that would have been stored in the space to the types of bark that was used for shingling and so forth. Or even for the benches and so forth now, we're moving back outside and we're starting to hear this on kids again and shortly.

We'll hear some cicadas chirping birds and hopefully there will be some dogs. And we're walking down into the view shed

and see the beautiful spot to the river and the river again was the lifeblood of Indigenous communities both for the fact that they created their village there. The river provided water, provided food and it also provided entrepreneurial transportation to other indigenous communities.

So the Longhouse the virtual longhouse is really a combination of multiple elements. One is to appreciate the communal environment that are Indigenous descendants had both before contact and after contact and as we've discovered from an archaeological perspective longhouses actually changed after they changed architectural approaches after contact to be more European-centric which we have.

Now, I haven't personally done any research to find out whether or not there was any whether that approach was better than a different approach. But from a pre-contact perspective longhouses were different from all sorts of different communities. So if you live south of the Great Lakes you are longhouses were a lot thinner and and longer if you lived further west your long houses tend to be a little bit more beefier.

If you live far to the east your longhouses would use a different type of wood. That wouldn't have been available in these environments. So the thing that I really love about longhouses is the fact that it meant the same thing to almost every community whether it's they were Indigenous here in North America or in Indigenous communities across the globe. It was a meeting place for everybody come together and live together, but from an architectural perspective, they they ranged and they were buried in there were unique in their own respective nature and that gave a real appreciation for the fact that there is a broad and vast creative spirit that was in all of these Indigenous communities building these impressive environments.

Michael Mihalicz: So I received some of the teachings from the Mohawk Elder out. He mentioned that people coming to

the Village weren't necessarily allowed into the village right away. Typically, they would set up camp outside the village until they were welcomed into the Village. Then in wartime, men coming back from the battlefield weren't invited back into the community right away, you know the battle weary and and they didn't want to introduce that energy into the community and so they would reside just outside.

Michael Carter: I hadn't realized the Warriors, that the warriors would have stayed as they came back. That makes complete sense. The palisades were there. They were to keep the riff raff out if you like if you were a Jesuit priest. It makes total sense that these these longhouses wouldn't have

internal to the community and we've recognized that they tend to be less than 18 meters in length, which tells me that a smaller group of individuals occupying the space for a shorter period of time.

I've never come across any historical writings on that but now you've got me interested. So I'm going to have to have to take that up right? I think there are a lot of teachings in building the longhouse that you don't necessarily get from seeing the completed product.

Michael Mihalicz: Building a longhouse was a community effort, you know, and everybody coming together, men as old as you know, 50, 60 years old or pitching in wherever they could. You know harvesting the trees and when I talked to you about this previously, but how we didn't clear all the trees around where we were going to build the Longhouse. So we wanted to do it in a very sustainable way. And so we took trees from deep in the woods, you know, where the ecosystem would recover and so it made for a lot of work. Getting huge trees back all by hand hundreds of meters back to be placed and just we used traditional tools as much as possible.

So it wasn't it wasn't an easy project. So we also made an induction cook and a totem pole and a teepee all traditional pre-contact and it was none of them were easy, you know. The

role of community and sort of everybody pitching in and that a lot of the ways that things were done weren't necessarily the most effective in achieving the objective which in this case would be to build the Longhouse but they do serve a deeper purpose and strengthening bonds in the community and ensuring that that what you're doing is in harmony with the land that's that's sustaining life in your community.

Michael Carter: Wow, so, you know, I'm not sure if you know this or not or if you've heard these these figures but the this virtual representation is of the Jon Batiste site in the Whitchurch-Stouffville area and that particular site was excavated a few years ago when they were putting in new subdivision and as they started Excavating they realize that they didn't

have a village and Indigenous pre-contact Huron, or one village, they actually had a city. They excavated over a hundred longhouses in various sizes and formats and a massive large calibrated city barrier, but they also the interesting thing from this particular ocular archaeological apartment was that the long houses that were built by different communities that we're coming into the safety of the city itself.

They had a waste removal system, they had a fire brigade. You had long trenches and those trenches were for waste waste products and so forth. So we knew that there was a community garbage program, you know, a garbage collection program and we also based that understanding on the oral histories. We knew that there was a fire brigade, because obviously you're living in a community full of wood. So fire was always a primary thing, but to sort of get back to the notion of being sustainable and the acquisition of proper wood and so forth for these longhouses.

In the city, you've got a lot a hundred longhouses. I think it was estimated that you had actually had to cultivate 70 acre or 70 hectares of land just to acquire enough wood to build the

city itself and then to feed the city after it's been de-stumped, and so forth and made into an agricultural zone.

Michael Mihalicz: The sustainability aspect goes beyond just the sourcing of materials and really gets into creating a more cohesive community, you know one and that really comes with just the way that things were being done because community is everything. That was I believe, you know, their main means of survival was having a strong tight-knit like you said community of people and so a lot of the methods that were used. I think we're designed very intentionally to strengthen ties within the community.

Original Project Brief (March 3, 2020)

Project Brief – Longhouse OER Course Module

Project Goal:

- To design and develop Indigenously informed pedagogies, through a single test course module, in support of the combination of a virtual and interactive learning environment
- Support the exploration of the historical and archaeological known knowledge, to multimodal lens in the interpretation of that knowledge
- Augment the Ryerson University HST 580 Natives and Newcomers to 1763 course
- Examine the use of digital cultural heritage as a means of knowledge mobilization
- To create a classroom experience of the Longhouse OER VR and/or game experience that is engaging, rich, meaningful and respectful

Situation Analysis:

- Instructors are looking for classroom resources that are easy to integrate into existing curricula
- Education funding cuts have eliminated or reduced access to Indigenous educational resources and programming (ie. Ontario Government's cuts to Indigenous Culture

Fund)

- Many university, college and high school instructors have requested the 3D Visualization of Eastern Woodlands Indigenous History

Audience

Primary

- Instructors and faculty in post-secondary and secondary institutions
- Learners in post-secondary and secondary

Target Audience Empathy Map

Audience Empathy Map:

Thinking and feeling: Resource- and time-strapped, they want something easy to use, turn-key and with minimal need for rework

Hearing: That experiential, full-sensory and immersive learning is a powerful tool for pedagogy

Seeing: A limited pool of Indigenous educational resources; a limited sample of digital cultural heritage approaches and processes

Saying and doing: They are looking for a way to bring this into existing coursework and do so in a way that is informed by Indigenous educational frameworks, and integrate the content into existing learning in a way that is engaging, informed and respectful

Pain: Need to do more with less

Gain: Improve and enrich student experiences and understanding of course materials

Strategies:

- Use evidence-informed community consultation models

such as focus groups, virtual town halls and student/ Indigenous/instructor advisory boards to inform and execute the project
- Leverage design thinking and empathy mapping with key communities to gather requirements and validate project direction
- Developed a multi-modal approach to the materials creation informed by Universal Design for Learning (UDL)

Proposed Deliverables:

Based on the primary audience, we envision the following tools and deliverables would be in scope.

A Pressbooks-based module which includes the following sections:

- **Instructor resources**
    - Lesson plan
    - Presentation slides
    - Lesson scripts
    - List of high-yield questions
    - Answer keys
    - Sample student perspectives
    - Troubleshooting guides
    - Classroom management tips

- **Student Resources**

- Active learning exercises (quizzes, sharing circles, one-minute papers, creative reflections, building projects, mindmapping, etc.)
- Discussion boards, Hypothes.is threaded annotation, peer discussions and evaluations
- Self reflection and journaling