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O'nónna: A Curriculum for Land-Based Language Learning

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Résumé de l'article

Le projet Atlas de l'Espace Kanyen'kehá:ka (Kanyen'kehá:ka Nation, 2020; voir www.mohawkatlas.org) a été lancé en 2019 dans le but de préserver les toponymes en Kanyen'kéha (langue mohawk) et la terminologie paysagère associée. Construit à l'aide de Nunaliit, un cadre de cartographie communautaire développé par le Centre de recherche en géomatique et cartographie de l'Université Carleton (GCRC), l'Atlas permet de localiser des points sur une carte et d'y associer des médias, tels que des prononciations, des photos, des vidéos et des documents. Avec un financement du Conseil de recherches en sciences humaines du Canada pour l'Atlas, l'équipe de recherche a animé des ateliers dans les communautés Kanyen'kehá:ka pour documenter leur espace, ajoutant plus de 198 lieux et environ 188 fichiers multimédias provenant des communautés. Cependant, nous savions qu'il y avait aussi un potentiel d'utilisation de l'Atlas pour les activités de revitalisation linguistique. Avec un financement de la National Indian Brotherhood nous avons créé un programme d'apprentissage linguistique intégrant l'Atlas et la technologie des drones avec des activités liées à la terre, lequel a été utilisé lors du camp d'été « Land Back » organisé au Native North American Travelling College à Akwesasne en juillet 2022. Cet article discute des composantes du programme centré autour de l'Atlas employé comme outil d'apprentissage des langues basé sur des tâches. En raison de la grande diversité des âges et des niveaux de compétence linguistique, le programme combine différentes méthodes et stratégies conçues pour se renforcer mutuellement. Le programme inclut l'enseignement de la conduite de drones aux campeurs, ainsi que l'intégration des images dans l'Atlas de l'Espace Kanyen'kehá:ka. Cela se fait en collaboration avec quatre locuteurs natifs de Kanyen'kéha pour décrire les images. Le camp propose également des activités en lien avec la terre, ainsi que des jeux et des activités en Kanyen'kéha.

O’nónna: A Curriculum for Land-Based Language Learning

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Abstract

The Atlas of Kanyen’kehá:ka Space project (Kanyen’kehá:ka Nation, 2020; see www.mohawkatlas.org) launched in 2019 for the purposes of preserving Kanyen’kéha (Mohawk language) place names and related landscape terminology.[1] Built using Nunaliit, a community mapping framework developed by Carleton University’s Geomatics and Cartographic Research Centre (GCRC), the Atlas is capable of pinning points onto a map and attaching media such as pronunciations, photos, videos and documents to that point. With funding for the Atlas through the Social Sciences and Humanities Research Council, the Atlas Research Team held workshops in Kanyen’kehá:ka communities to document their space with over 198 places and approximately 188 media files added from within the communities. However, we knew there was also potential to use the Atlas for language revitalization activities. With funding from the National Indian Brotherhood, we created a language learning curriculum integrating the Atlas and drone technology with land-based activities which was used during Land Back Summer Camp, held at the Native North American Travelling College in Akwesasne in July 2022. This paper discusses the components of the curriculum centred around the Atlas as task-based language learning. Because of the wide range of ages and language proficiency, the curriculum is a combination of different methods and strategies that are designed to reinforce each other. These included teaching the campers how to fly drones and integrate the footage into the Atlas of Kanyen’kehá:ka Space working with four L1 Kanyen’kéha speakers to describe the footage. The camp also included land-based activities as well as games and activities in Kanyen’kéha.

Résumé

Le projet Atlas de l'Espace Kanyen'kehá:ka (Kanyen’kehá:ka Nation, 2020; voir www.mohawkatlas.org) a été lancé en 2019 dans le but de préserver les toponymes en Kanyen'kéha (langue mohawk) et la terminologie paysagère associée. Construit à l'aide de Nunaliit, un cadre de cartographie communautaire développé par le Centre de recherche en géomatique et cartographie de l'Université Carleton (GCRC), l'Atlas permet de localiser des points sur une carte et d'y associer des médias, tels que des prononciations, des photos, des vidéos et des documents. Avec un financement du Conseil de recherches en sciences humaines du Canada pour l'Atlas, l'équipe de recherche a animé des ateliers dans les communautés Kanyen'kehá:ka pour documenter leur espace, ajoutant plus de 198 lieux et environ 188 fichiers multimédias provenant des communautés. Cependant, nous savions qu'il y avait aussi un potentiel d'utilisation de l'Atlas pour les activités de revitalisation linguistique. Avec un financement de la National Indian Brotherhood nous avons créé un

programme d'apprentissage linguistique intégrant l'Atlas et la technologie des drones avec des activités liées à la terre, lequel a été utilisé lors du camp d'été “Land Back,” organisé au Native North American Travelling College à Akwesasne en juillet 2022. Cet article discute des composantes du programme centré autour de l'Atlas employé comme outil d’apprentissage des langues basé sur des tâches. En raison de la grande diversité des âges et des niveaux de compétence linguistique, le programme combine différentes méthodes et stratégies conçues pour se renforcer mutuellement. Le programme inclut l’enseignement de la conduite de drones aux campeurs, ainsi que l’intégration des images dans l'Atlas de l'Espace Kanyen'kehá:ka. Cela se fait en collaboration avec quatre locuteurs natifs de Kanyen'kéha pour décrire les images. Le camp propose également des activités en lien avec la terre, ainsi que des jeux et des activités en Kanyen'kéha.

O'nónna: A Curriculum for Land-Based Language Learning

Introduction

The Atlas of Kanyen'kehá:ka (Mohawk) Space

Kanyen'kéha (Mohawk) is a Northern Iroquoian language spoken by the Kanyen'kehà:ka (Mohawk) people, in the communities of Ohswé:ken (Six Nations), Kenhtè:ke (Tyendinaga), and Wahta in Ontario, Canada, in Kanehsatà:ke and Kahnawà:ke, in Quebec, Canada, and the community of Akwesasne, located at the conjunction between the Canadian provinces of Ontario and Quebec and New York State in the United States (Gomashie, 2019). Gomashie (2019) estimates the state of Kanyen'kéha as "endangered" by several different language endangerment scales, but immersion or near-immersion language revitalization programming has been established in Ohswé:ken, Akwesasne, Kahnawà:ke and Kenhtè:ke.

The Atlas of Kanyen'kehá:ka Space Project, located at www.mohawkatlas.org, is a digital atlas created for the purposes of preserving Kanyen'kéha (Mohawk language) place names and related landscape terminology (Kanyen'kehá:ka Nation, 2020). Launched in 2019 and funded by the Social Sciences and Humanities Research Council (SSHRC) and the National Indian Brotherhood Trust Fund (NIB), the Atlas utilizes the open source Nunaliit framework (nunaliit.org), created at Carleton University's Geomatics and Cartographic Research Centre (GCRC, 2018).

The Atlas of Kanyen'kehá:ka Space Research Team is made up of both academics and Kanyen'kehá:ka community members. Dr. Rebekah Ingram (Geomatics and Cartographic Research Centre) is an applied linguist focusing on language documentation and revitalization with a background in language teaching. She currently serves as the coordinator of the project. Dr. Kahente Horn-Miller, Kanyen'kehá:ka (Mohawk) from the community of Kahnawà:ke, is an Associate Professor in the School of Indigenous Studies and is the inaugural Assistant Vice-President of Indigenous Initiatives at Carleton University. She currently serves as the Primary Investigator for the project. Ryan Ransom, Kanyen'kehá:ka (Mohawk) from the community of Akwesasne, is Assistant Director for the North Country Science & Technology Program and an Adjunct Instructor for an introductory Mohawk Language and Culture course at the State University of New York, Potsdam. His personal interest in language revitalization and his work with Akwesasne youth allowed him to see the potential in this Atlas for education purposes.

In addition to the Research Team, a collaborative group called the Mohawk Mapping Collective assists the Research Team and helps to ensure that the Atlas is a community-driven project. The Collective is made up of members of the communities of Akwesasne, Kenhtè:ke, Kahnawà:ke, and Wahta who have attended community mapping workshops and have a vested interest in the direction of the project.

One of the goals of this paper is to provide our answer to questions regarding the intersection of Applied Linguistics and Indigenous Language Revitalization as the focus of this special issue of the Canadian Journal of Applied Linguistics. Some of these have been posed straightforwardly in Penfield and Tucker (2011), including whether applied linguists are able to develop curricula that are appropriate to Indigenous language communities in terms of cultural needs, appropriateness, and useability. However, they also ask if applied linguistics has the ability to "be creative in thinking about language teaching methods and

materials that work in more innovative ways" (Penfield & Tucker, 2011, p. 303). The Atlas of Kanyen'kehá:ka Space, and the activities which revolve around it in terms of language learning and transmission, aims to meet both of these challenges.

This paper begins by providing background to the Atlas of Kanyen'kehá:ka Space project, followed by some theory and discussion regarding its use as a pedagogical tool for language learning, and the role of applied linguistics for this purpose. We go on to discuss the application and logistics of utilizing the Atlas during a summer camp specifically designed to test its effectiveness for task-based language learning. Additionally, we detail the curriculum that was created to accompany the Atlas for this type of use. A description of each of the activities, their purpose, and the application within the overall process is provided, followed by a brief discussion of some of the challenges of the project. The future direction of the Atlas of Kanyen'kehá:ka Space Project is discussed within the Conclusion.

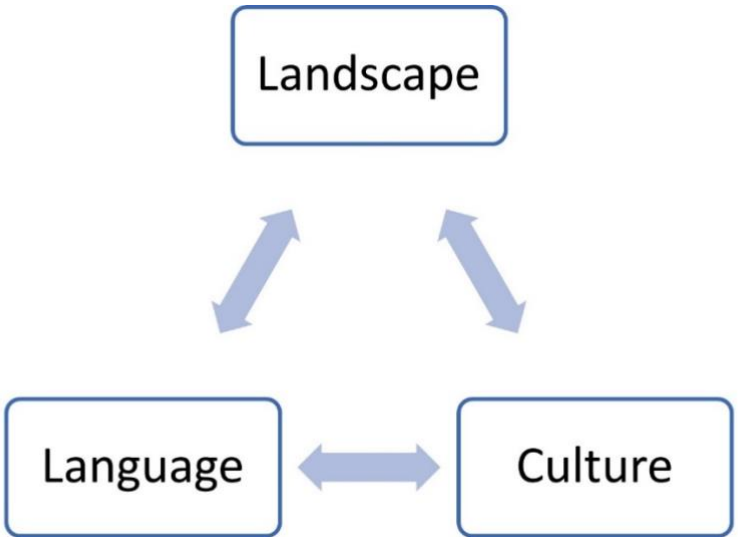
Background to the Atlas

The Atlas of Kanyen'kehá:ka Space began as Rebekah Ingram's doctoral dissertation. Following research in cross-cultural semantics, ethnophysiography, and place name studies, the dissertation used archival research and collaboration with members of the communities of Akwesasne, Kahnawà:ke and Kenhtè:ke to document over 150 Kanyen'kéha place names together with their meanings. In addition to place name documentation and analysis, the dissertation also touched upon some of the theory underlying the importance and value of Indigenous place names as Indigenous Knowledge, especially as an intergenerational connector between language, culture, and landscape. This is captured in the O'nón:na Model, named by Francis Ateronhiatá:kon Boots for the splints used in ash basketry, a traditional craft practiced for centuries at Akwesasne. The O'nón:na Model seeks to capture the interconnection between landscape and language, hypothesizing that language, culture and landscape are interconnected, and that a disruption in one, such as through the dispossession of land, or the loss of language such as from the residential schooling system, will cause a disruption in all of the others. Even once the disruption is removed, revitalization of any of these aspects will require that the connection between language, landscape and culture be reestablished (Ingram, 2020). Figure 1, below, captures the interconnection of the O'nón:na Model (Ingram, 2020).

The advent of digital atlases has brought with it new technical capabilities that allow for creative opportunities such as the addition of multimedia and participatory mapping in which a community maps its own information and knowledge. The capabilities of digital atlases applied to the field of linguistics are outlined in, for example, Cenerini et al. (2017), and Ingram (2021). The use of mapping and place names as a method of language documentation and revitalization has been outlined by, for example, Hercus et al. (2009), Gawne and Ring (2016), and Chiblow and Meighan (2022). Chiblow and Meighan (2022) outline in particular how "learning from activities on the land is paramount for understanding the language" (p. 4) and "[f]or this reason it is important that language learning and transmission takes place on the land, in the home community, and in the language" (Chiblow & Meighan, 2022, p. 4). The emphasis of mapping and place names is on the land itself and on specific locations which are important for myriad reasons, as reflected in the O'nónna Model. Thus, "[r]egular participation in the land-based activities keeps connections, ways of knowing and understanding, ways of being, and relationships

strong," (Chiblow & Meighan, 2022, p. 4) or, in the case of O'nónna, reconnects those ways of knowing, understanding, being and relationships.

Figure 1
The O'nón:na Model



Note. The O'nón:na Model, named by Francis Ateronhiatá:kon Boots for the splints used in ash basketry, captures how language, culture and landscape are all interconnected and thus, a disturbance to one will lead to a disturbance to the others.

The Evolution of the Atlas

Penfield and Tucker (2011) note that the output of language documentation projects is often "academic materials including grammars, as well as wordlists, dictionaries, and narratives, all transcribed, annotated and entered as data in an archival format" (p. 239). As a result, "[t]he extent to which these are accessible to the speaking communities once a language documentation project ends varies considerably" (Penfield & Tucker, 2011), depending largely on community need and engagement with the project. Accessibility of the data contained within the dissertation was a major concern in regard to the project in its entirety, since the ethical framework of the project predated the dissertation and relied on the ideas of relationship building and reciprocity. The principles of Ownership, Control, Access and Possession, or OCAP (First Nations Information Governance Centre, 2023) were therefore used within the formal ethics process. Although the final document itself was made available to community members and was available via the internet, the body of work contained a variety of technical language and interlineal morphological glossing which are not necessarily accessible to those without some training in linguistics, thus creating a barrier to the principle of "Access." Following discussions between those involved in the dissertation work, both academic and non-academic, it was decided that access would be improved if the place names were housed in an interactive digital atlas to create a digital archive that also integrated elements of geography. Dr. Horn-Miller and Dr. Fraser Taylor, Professor of Geography and Environmental Studies and Director of the Geomatics and Cartographic Research Centre at Carleton University, received funding

through SSHRC to utilize the open-source Nunaliit framework (Geomatics and Cartographic Research Centre, 2018; see https://nunaliit.org) to create the Atlas of Kanyen'kehá:ka Space. The Nunaliit framework allows for the integration of points, lines, and polygons as well as media files such as audio and video recordings, documents, photographs, artwork, etc. (Geomatics and Cartographic Research Centre, 2018). Thus, not only can the Atlas archive the information gathered in the dissertation, but it can also be used to document knowledge that is held in some format other than text, such as songs, stories, and oral history. Furthermore, this can be done through the web-based platform itself, meaning that knowledge can be documented from a laptop, tablet, or mobile phone by community members within the community.

In order to ensure that the mapping could take place within the community, the initial SSHRC grant included funds for the research team to present in-community workshops in which community members were trained in the use of the Atlas, including the ability to add their own information. These workshops took place in Akwesasne, Kehntè:ke and Kahnawà:ke in 2020. During the workshops, 71 different points were added to the Atlas together with 41 different types of media attachments including PDFs of Treaty agreements and archaeological findings, video clips and photographs of locations, audio files of place name pronunciation, and video of the morphological breakdown of a place name with an L1 speaker (Kanyen'kehá:ka Nation, 2020).

The Atlas itself serves as a "collection, transcription, and translation of primary data" and "a low-level (i.e. descriptive) analysis of these data" (Himmelmann, 1998, p. 161); primary data are recorded in audio and video formats and uploaded to Nunaliit, where Kanyen'kéha transcriptions, glosses, and English interpretations can be added. Thus, the Atlas acts as a digital repository for landscape-based language and also meets the definition of a form of language documentation.

The Next Phase

It was within the community mapping workshops, especially where L1 speakers were involved, that we began to think about how the Atlas might also be involved in language revitalization. Language revitalization initiatives have strong support within Kanyen'kehá:ka communities. Specific organizations engaged in revitalization include the Akwesasne Freedom School, founded in 1979 (White, 2009), Kanien'kehá:ka Onkwawén:na Raotitióhkwa Language and Cultural Center immersion programs and Iakwahwatsiratátie Language Nest located in Kahnawà:ke, Onkwawenna Kentyohkwa in Ohswé:ken (see Richards & Kanatawakhon-Maracle, 2002), Tsi Tyónnheht Onkwawén:na in the community of Kehntè:ke, and the Mohawk Language Custodian Association in Kanehsatà:ke. The community of Ohswé:ken also has an elementary and secondary Gayogo̱hó:nǫʔ (Cayuga) and Kanyen'kéha language immersion school and a college which offers an Honours Bachelor of Arts in Ogwehoweh Languages and the Gayogo̱hó:nǫʔ Gawę:nǫdahgǫh (Cayuga Language) Immersion Program (Six Nations Polytechnic, 2022). More recent initiatives such as the Thompson Island Cultural Camp, and the programs offered at the Native North American Travelling College (NNATC), seek to revitalize cultural practices. Thompson Island Cultural Camp also includes a linguistic aspect in its Kanien'keha Crash Course Challenge/Tewatewennáweienst program (Mohawk Council of Akwesasne, 2023). Kanyen'kéha is also available in other modes of communication such as

newspapers, radio, YouTube channels and the children's show Tóta tánon Ohkwá:ri (Delaronde, 2004 - present, see https://www.korkahnawake.org/tota).

During the mapping workshops in Akwesasne and Kahnawà:ke, discussions took place in Kanyen'kéha between some participants and evolved into morphological and syntactic analysis which were recorded and added to the Atlas. Because of the Atlas's ability to facilitate language transfer in this way, we realized its use could be integrated into a methodology where L1 speakers and language learners would work together to document the landscape in Kanyen'kéha. Thus, these sessions also showed that the Atlas can be used in a way that meets the needs of individual Indigenous communities while directly integrating aspects of culture and landscape into that language learning.

The Role of Applied Linguistics

Hinton (2011) outlines how applied linguists "know a great deal about the structure of the languages and are especially helpful in the provision of recorded and written data, and in the development of reference materials" but that it is the knowledge of pedagogical methods, and researching the effectiveness of both theory and method, which could prove to be particularly beneficial to language revitalization efforts (p. 317.) Similarly, McIvor's (2020) call for empirical research projects "focused on the most popular language revitalization programs and strategies" include approaches such as language nests, immersion programs, accelerated learning methods, and the Mentor-Apprentice method (p. 92). As an applied linguist, Rebekah had knowledge of these different initiatives, theories, and methods, including Mentor-Apprentice, which informed much of the Atlas Curriculum.

McIvor (2020) also points out that curriculum development is part of the overlap between Indigenous Language Revitalization and Second Language Acquisition (an aspect of Applied Linguistics), but also one of the main differences, since a lack of speakers also means a lack of, in her words, "ready-made curriculum and learning resources, unlike those for majority language foci for immigrant populations or other world languages that are widely taught and spoken" (p. 82). One of the main goals of the current iteration of the Atlas of Kanyen'kehá:ka Space project is to utilize Rebekah's background in applied linguistics, including pedagogy, to add to those learning resources in the form of a ready-made curriculum. Although this is intended to apply to Kanyen'kéha, we hope that in the long term, an outline of the curriculum developed here can be adapted to any language, culture and landscape.

Indigenous Pedagogy and Language Learning

Van Compernolle and Williams (2013) describe pedagogy as "a multifaceted form of organized cultural activity" (p. 279); it is our position that, as a result, pedagogy must be viewed through the lens of culture. Kanyen'kehá:ka pedagogy is similar to the legitimate peripheral participation model outlined in Lave and Wenger (1991); for example, within the Kanyen'kehá:ka longhouse, the younger generation learns longhouse speeches, songs, and the general order of ceremony through taking part in each of these, at first only doing as they are directed, and then taking over more and more aspects of responsibility until they are able to fully execute the task themselves. Land, and activities taking place on the land, also lie at the centre of Indigenous pedagogical practices (see Kermoal, 2016). Thus, removal from the landscape also means disruption of ways of knowing (Kermoal, 2016) as

well as pedagogical processes. For us, decolonization means a rekindling of what it means to be Onkwe'hón:we, shedding the layers of imposed Eurocentric worldviews, pedagogies, epistemologies to return to being 'Haudenosaunee', to the mindset that existed for Kahente's and Ryan's ancestors prior to the intrusion of non-Indigenous thought in North America. The land is a part of that culture, language, and way of life and to decolonize is to re-establish that connection of people, language, culture, and land. Decolonial theory is therefore paramount to the different aspects of the Atlas of Kanyen'kehá:ka Space, since not only does the theory align with the ideas of Indigenous pedagogy as situated on the landscape, but also because at a fundamental level, the project is about ideas of sovereignty: place names are an indicator of knowledge of a landscape which is acquired over generations, and this knowledge is passed across those generations through language (Ingram, 2020). Thus, to have a place name which marks a specific place for a specific reason is to show a tie to that place, even if that name is no longer in use, and even if language shifts around it (Ingram, 2020). Part of decolonization theory includes deconstructing systems of oppression and returning to self-determination, yet another aspect of sovereignty. McIvor (2020) also situates Decolonization Theory as "foundational for the field of ILR", "grounded in remembering and deconstructing pre-contact and post-contact history, and, in regard to SLA, remembering when Indigenous languages flourished in these lands" (p. 79).

One important aspect of modern-day Indigenous pedagogical practices as rooted in sovereignty can be described by sociocultural theory, which conceives of social interaction, including those mediated by cultural institutions such as schools or the longhouse, as being situated within the culture, all contributing to the cognitive development and overall learning of an individual (Rogoff, 1990; Vygotsky, 1962). Learning, and particularly language learning, is a sociocultural process (Lave & Wenger, 1991) and "should be completed by a sustained and ethnographically structured encounter with the language's culture" as part of the competence view of language learning (Holme, 2003, p. 20). This approach, the competence approach, "contends that the knowledge of a language's culture is thought essential to a full understanding of a language's nuance of meaning" (Holme, 2003, p. 20).

Davies and Elder (2004) invoke Widdowson (1980) in saying, "it is the responsibility of applied linguists to consider the criteria for an educationally relevant approach to language" and that that criterion is "a complex pursuit of fitting a culture to the needs of its members and their ways of knowing to the needs of the culture" (p. 252). Kramsch (1993) outlines specifically the importance of culture in language teaching, and this importance is perhaps even more significant for those cultures, and their associated languages, which have been actively repressed and have survived attempts at eradication. Penfield and Tucker (2011) also caution the application of the "standard pedagogical practices" of applied linguistics without taking the social and historical context of Indigenous communities into account, saying, "it would be dangerous to assume that strategies for standard pedagogical practices related to language (materials and curriculum development, testing, assessment, for example) can be implemented in the same ways – relevant language teaching contexts and goals are often far too different" (p. 31). The spirit of the O'nón:na model acts as a complement to this idea in that each language and culture is influenced by and in turn influences its own landscape (Ingram, 2020); even groups of people who speak varieties of the same language may not utilize the same landscape, as can be evidenced through different varieties of English used worldwide. This is also true of

Kanyen'kehá:ka communities throughout the North American continent, which are situated on different environmental contexts. Thus, the criteria for an educationally relevant approach to language may differ even from community to community. McIvor (2020) also notes that, until around 2017, there was a lack of literature on "culturally and historically relevant methods" for teaching and learning Indigenous languages and that, subsequently, many Indigenous communities are forced to rely on the "classroom setting" for their language learning

A final added complication in regard to Indigenous languages in particular is that often documentation has been geared to an academic audience and must be interpreted "into materials that can be valued by a new generation of speakers and learners" (Penfield & Tucker, 2011, p. 292). Penfield and Tucker go on to add that "[t]his particular transformation of technical linguistically documented language into workable, teachable language materials invites professionals trained in applied linguistics (…) Yet there is a striking shortage of applied linguists in the field of endangered languages" (Penfield & Tucker, 2011, p. 292). The advantage of the Atlas of Kanyen'kehá:ka Space in this regard was that Rebekah is an applied linguist with a background in language teaching and, together with Kahente and members of Kanyen'kehá:ka communities, had already done much of the relevant groundwork for both the dissertation and the implementation of the Atlas project. Ryan, as well, teaches Kanyen'kéha and had been involved in the initial launch of the Atlas. In fact, the Atlas of Kanyen'kehá:ka Space itself solves many of the problems outlined above. Maps of any form, including atlases, transmit messages regarding space and place, including landscape and waterways (Crampton, 2001). In the case of the Atlas of Kanyen'kehá:ka Space, it is individual communities themselves that are documenting their own landscape and their use of that landscape from within the community itself, transmitting cultural knowledge. As a result, the Atlas is already culturally and linguistically relevant for that community and transmits the community's own messages regarding landscape and waterways.

Van Compernolle and Williams (2013) outline that "L2 pedagogy encompasses any form of educational activity designed to promote the internalization of, and control over, the language that learners are studying, whether or not a human mediator (e.g. a teacher) is physically present and overtly teaching, as in a teacher-fronted classroom or a tutoring session" (p. 279). The term *mediator* here refers to "a culturally constructed artifact" or "developmentally appropriate assistance from other people", either of which support cognitive development and learning (van Compernolle & Williams, 2013, p.279). Following sociocultural theory, we propose that the Atlas is such a *culturally constructed artifact.* Thus, the Atlas can act as a non-human mediator which can also contribute to "the internalization of, and control over, the language that learners are studying" and therefore can act as a part of L2 pedagogy (van Compernolle & Williams, 2013, p. 279). The Mentor-Apprentice method (Hinton et al., 2018) provides the framework by which knowledge of the language, knowledge of the the culture, and landscape knowledge, can be transferred from person to person using the Atlas as a focal point. In other words, we take the view that L1 language speakers and other Elders involved in the Mentor-Apprentice method of language revitalization (Hinton et al., 2018) act as mediators for the language learners, but that they also act as mediators for the transfer of cultural and landscape knowledge and information when using the Atlas. The Atlas can be used to display information about place, and what occurs, or has historically occurred at those places without the need to be directly at those places. Clicking on one of the points within the Atlas reveals the location

on the map as well as media related to that place, such as photos of the location, scans of historical maps and letters regarding that location, drone video footage and photography of the landscape, and video interviews of community members regarding knowledge of the location. Thus, sessions which explore the different points in the Atlas, or other important places that community members wish to enter into the Atlas can also be used to facilitate discussions about the landscape in group immersion contexts similar to the mapping workshops where knowledge of place names, landscape features, and cultural, historical, and environmental context, can be shared amongst participants of differing generations. These can also follow the tenets of Mentor-Apprentice, including, for example, aiming for natural communication in the language, focusing on listening and speaking, and doing activities together, such as entering important information into the Atlas (Hinton et al., 2018). In fact, the discussions themselves regarding these locations, and the knowledge and practices surrounding them, can be recorded during the sessions, transcribed and glossed, and then entered into the Atlas as part of the overall information repository.

The O'nón:na model, as outlined above, points out how each aspect of the triad, i.e., landscape, language and culture, may be disrupted, but also suggests that the inverse is possible; that is, that the disruption could be reversed and each element revitalized given the appropriate tools and methods to do so. The overall goal to such a project would not solely be language revitalization, but also revitalization of cultural practices taking place on the landscape, knowledge of the landscape itself, and, given enough time, possibly revitalization of the land. Therefore, use of the Atlas to document the culture and landscape within a framework of the Mentor-Apprentice method facilitates the legitimate peripheral participation of Lave and Wenger (1991) (mentioned in the Indigenous Pedagogy and Language Learning section, above) as well as knowledge transfer from the older generation to the younger generation in terms of language, landscape and culture, simultaneously.

The requirements for such a project necessitated access to L1 speakers or those fluent in the language and to a group of language learners or those interested in learning the language. It also required access to different elements of the landscape, to knowledge about the landscape and those elements, and to knowledge of cultural aspects which link the three together. One example is in the name *Hazelnut Island*, where one of the Language Speakers recalled collecting hazelnuts as a youth (Kanyen'kehá:ka Nation, 2020). This name encompasses the language, (the word for hazelnuts, *teiotitá:ronte*, [Kanyen'kehá:ka Nation, 2020]), but also all language encompassing the semantic domain of harvesting hazelnuts as foodstuffs), the cultural practice (the knowledge of hazelnuts as a food source and of their collection and processing for nutrition), and the physical location where the process of locating and harvesting the nuts using the language and knowledge occurs. Given that, as outlined in the example, all three of these elements are present within a single point in the Atlas, community mapping using the Atlas can become part of a language revitalization initiative which embraces the O'nón:na Model.

Atlas as Task-Based Language Learning

The idea of the use of the Atlas as a mediated task was based upon the mapping workshops held in the three Kanyen'kehá:ka communities the years previous, i.e., to train community members in the use of the Atlas to document their own landscape data. Much of the knowledge uncovered during the mapping workshops, such as knowledge of currents in the waterways, or fishing locations, is directly relevant to the communities today in terms

of the history of community activities, and how communities survived on the land. Aligning with the O'nón:na Model, Kanyen'kéha was used during and throughout the process of transmitting this type of land-based knowledge and other knowledge associated with place. Intergenerational transmission is necessary for the continuation of this knowledge as well as the continuity of the language. However, up to this point, Rebekah, Ryan and Kahente had not considered how the youngest generation, the youth, fit into the Atlas work. We considered that the youth might be interested in technology such as the Atlas, and that the act of entering information offered by older generations into the Atlas could be viewed as a task of which language use was a necessary part. Although we did not feel that young people would be interested in attending mapping workshops, Kahente proposed the idea of a summer camp which would function as a sort of youth alternative to a mapping workshop that would include not only work with the Atlas, but other activities as well. Rebekah and Ryan proposed the creation of a curriculum integrating the Atlas together with different activities and games to help support language skills and land-based learning in a fun setting. The idea of entering information into the Atlas became the nucleus of the task-based language learning approach centred around which we developed a summer camp curriculum.

Ellis (2017) outlines four criteria for the definition of "a task," including a focus "mainly with encoding and decoding messages," "a need to convey information, to express an opinion, or to infer meaning," that learners "use their own resources to complete the task," while also relying on additional language scaffolding provided by the task, and "a clearly defined outcome other than the use of language for its own sake" (p. 109). In integrating the Atlas into task-based learning, campers would need to approach the Language Speakers using as much language as available to them (encoding messages) and listen to the information given by the Language Speakers in the language (decoding messages) in order for the campers to decide what information was important or relevant enough to them to be included in the Atlas. The overall outcome was the campers' addition of their own points of interest to the Atlas together with associated multimedia and other information in Kanyen'kéha.

A task-based language teaching approach is in line with one of the central tenets of the Mentor-Apprentice method as outlined by Hinton (2001) through the emphasis on communication and language production regardless of accuracy. The Language Speakers, dictionaries that were made available, other language-scaffolding activities, and even the Atlas itself are all mediators which also act as linguistic resources to help the participants produce language. This also became an important point given that the language skills of the campers ranged from very basic, to near fluency; thus, these linguistic resources could provide as much or as little support as needed to the campers.

In order to guide the students to think about the landscape, to interrogate their own understandings, and to be curious about the Language Speakers' experiences on the same landscape, Rebekah created a series of pre-task activities leading up to the primary task (adding their information to the Atlas) to help guide their thinking and exploration of the landscape, language, and culture. Following Prabhu (1987), the pre-task work was treated as a type of information gap where the learners were missing a location's Kanyen'kéha name, the features of that location, including the relevant words in Kanyen'kéha, and its relevance to Kanyen'kehá:ka culture. In order to enter this information into the Atlas, participants needed to use the resources outlined above to fill in the gap. Within the three-stage task cycle as outlined by Willis (1996), the addition of the information into the Atlas

itself was considered the target task with the overall pedagogical process helping to support this goal.

With these thoughts in mind, we discussed the idea of a summer camp centred around the use of the Atlas within the community of Akwesasne and approached the Native North American Travelling College (NNATC) as partners in collaboration towards this goal. The NNATC houses the Salli Benedict basketry collection as part of its larger cultural centre and has access to the St. Lawrence River as well as approximately two acres of Akwesasne landscape. This allowed campers access to the landscape and waterways as well as to cultural items local to Akwesasne. Although a requirement was to plan activities that would connect participants to the landscape and culture, we also wished to consider what other skills, especially the youth, might find useful, interesting, and entertaining both during their time at the camp itself and later in their lives. Dr. Jeremy Laliberté of Carleton University's Department of Mechanical and Aerospace Engineering offered to instruct and supervise camp participants together with some of his students in the use of drones for environmental observation as part of the landscape component of the camp. With a plan in place implementing a number of different activities and technologies into the camp experience, in March of 2022, the Research Team received a grant from the National Indian Brotherhood to hold the summer camp at the Native North American Travelling College in Akwesasne from July 11 to July 15 and July 18 to July 22, 2022.

The camp was attended by seven campers ranging in age from 11 to 16, with several NNATC summer students of university age joining for some of the activities. Most of the participants were from the community of Akwesasne; some campers came from Ottawa or Kahnawà:ke but had family in Akwesasne, with whom they stayed during the camp. The language skills of the campers ranged from very basic to fluency, which will be discussed in the Challenges section of the paper, below.

Structuring the Summer Camp

Over the course of the winter and spring of 2021, Rebekah, Ryan, and Kahente developed a series of activities designed to blend use of the Atlas and the related technologies and activities with a task-based language learning approach. This section outlines the activities associated with each element of task-based learning.

Pre-task Activities

Pre-task activities also integrated specific content. The following activities were used as pre-tasks leading to the larger task of entering information in Kanyen'kéha into the Atlas.

Introduction with Speakers

The camp's Language Speakers introduced themselves and talked about their experiences growing up in the community. As they spoke, they would unintentionally repeat certain elements of the landscape that their childhoods all had in common. Rebekah made a list of these elements and displayed them on the projector screen. When the speakers finished in English, we went around the room and talked about each of the words, translated them into Kanyen'kéha with the help of the speakers, and discussed them a little

more. This became our Word List document that was made available to the students for the duration of the camp and is in this paper as Appendix A. During this process, we asked the students to use the language as much as possible.

Atlas Additions 1: Preparation

Campers were directed to choose a partner to work with and a location in Akwesasne. Rebekah created a worksheet for the campers ("Atlas Additions") with questions intended to guide them think about what kind of multimedia they wanted to include using drones, such as photos and videos. They also had the option of creating a voiceover audio for drone video footage, and so they were directed to think about what their script might say, such as the use of Kanyen'kéha terms for landscape features and words from other activities.

Interview 1

This worksheet asked a series of questions regarding stories and place names that campers might already know, as well as asking if they might know what certain other place names mean and why. Some of the place names under discussion included *Ahnawà:te* ('rapids'), *Otskwarhéhne* ('Frogtown'), and *Nikentsonkówa* ('many big fish'). The worksheet also asked campers what they wanted to know about a place and what kinds of information they would be interested in putting into the Atlas, including examples (plant and fish life, location of important social events, the importance of every day life, etc.). Finally, the worksheet asked about the use of Kanyen'kéha in the home and at school, and if family members spoke the language and how much campers used the language. The answers to these questions will eventually be used for assessment purposes.

Activity with Speaker (Interview 2)

Using the Word List created during the Language Speakers' introduction, a worksheet of basic Kanyen'kéha phrases, and the vocabulary learned from other activities, campers interviewed Language Speakers, asking the same questions from Interview 1, above. They also asked additional questions such as what the Language Speakers might want to put into the Atlas and why, and what might be useful for the community. A reminder on the worksheet read "The goal here is to use the language as much as possible. As you begin to learn about the place you have chosen, think about the words that you will need to describe that place. What are some of the Kanyen'kéha words you already know?"

Begin Researching

Camper pairs and camp staff all met together to discuss the locations they had chosen and their plans for the Atlas. Three main locations were chosen by the campers, including A'nowara'ko:wa Arena, The Old Customs House, and the East End of Kawehno:ke (Cornwall Island) which we were informed had once had a ferry landing. We created a word list for some of the topics covered in the discussion (for example, the islands off the shore of the East End, certain water features, the grass field by the arena, etc.). In the case of the Customs House, there was extensive discussion both in Kanyen'kéha and

English since this site had been the location of a border crossing between the United States and Canada, but the location had subsequently been moved off the island due to community concerns. The bridges and waterways were considered, as well as the Kanyen'kéha name for the border crossing and the border agents. The Language Speakers had clear recollection of crossing at that location, and therefore also had their own experiences to share. Most of the younger people (under age 40), knew of the reason for the relocation of the crossing and the community push to do so.

Drone Basics

A total of four drones were used for the summer camp. The basic use of the drones was taught by Dr. Jeremy Laliberté and Salman Shafi from Carleton University. Students were given a series of worksheets to aid them in thinking about the logistics of flying the drones at their location as well as helping to identify specific features in Kanyen'kéha. Examples of questions on the first survey worksheet included, "Is there a lot of wind? Are there interesting plants, trees, or other features you would like to capture? Where would be a good site to take off/land?"; questions on the second worksheets included, "What words will you use to describe this place? Does it already have a name? Oh ní:yoht (tsi) ahsì:ron' ne…(how do we say…)" as well as suggestions such as "hills," "rivers," "ponds," "trees and plants," "animals and birds" and "actions that take place there" and "buildings or other structures." Space was given in the second worksheet for students to write Kanyen'kéha vocabulary that they might find useful.

Following drone work and test flights at both the NNATC and their chosen location, campers filmed or took photos at their locations with the drones, which were then downloaded onto individual Chromebooks provided by Ryan and NCSTEP at SUNY Potsdam. The students then looked through the footage to choose what they wanted to enter into the Atlas and edited it using QuickTime Player. Camper pairs then revisited their notes from the first Atlas Additions worksheet which asked what they would use as well as their written scripts. Staff and Language Speakers helped them to enter in Kanyen'kéha vocabulary when asked.

As the final part of the three-stage task cycle, we invited community members to join us on the last day of summer camp for lunch and to give the campers the opportunity to demonstrate the information that they added to the Atlas. This also gave us a chance to discuss the project with the community, receive their feedback and thoughts on future directions, as well as to interview the campers and Language Speakers for their thoughts.

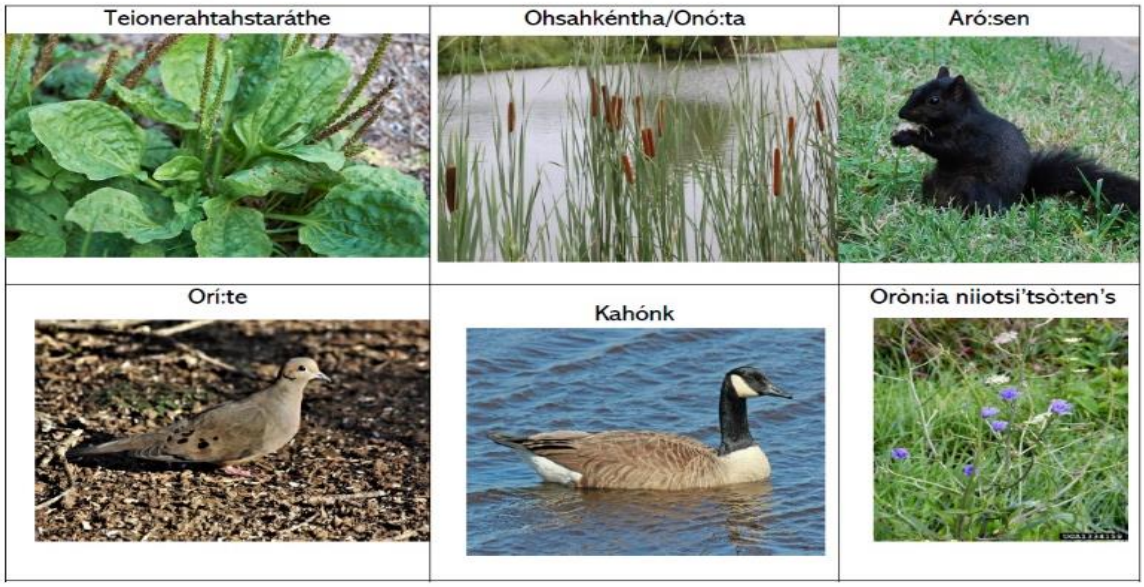
Scaffolding with Content Teaching Activities

Penfield and Tucker (2011) also outline the importance of content in addition to that of linguistic structures or grammar. Regarding the Atlas Task, we wanted to ensure that students had access to the vocabulary that they would need to complete the task, but also wanted to provide hands-on activities to maintain variety (and fun) to the camp experience. Thus, these activities were a complement to the pre-task activities outlined in the previous section. The content of these activities focused on the domain of environmental studies, which included local animal and plant populations, physical features such as landforms, and waterway knowledge. These are outlined below.

Scavenger Hunt

The first activity in content-building was a scavenger hunt focusing on local plants and animals. Two separate sheets (see Figure 2 below for an example) were developed with a total of eight different plants, such as wild strawberry, cattails, and dandelion, two tree species, two types of rock, and five local animals, including, for example, chickadees, Canadian geese, and black squirrels. The NNATC also has a number of black ash trees, although these have fallen prey to the invasive Emerald Ash Borer beetle (Francis, 2019). However, because of its importance to the traditional Akwesasne craft of basketry, we also included these in the scavenger hunt. The names of each of these entities was written solely in Kanyen'kéha and were read out loud prior to beginning the activity. The campers were divided into two teams, where each team was required to locate each of the entities on their sheets as quickly as possible. Upon their return from finding the entities, we again read the names and talked about the cultural relevance of each of them (such as, for example, the use of the broadleaf plantain plant as a traditional medicine).

Figure 2
Scavenger Hunt Sheet



Tie Dye

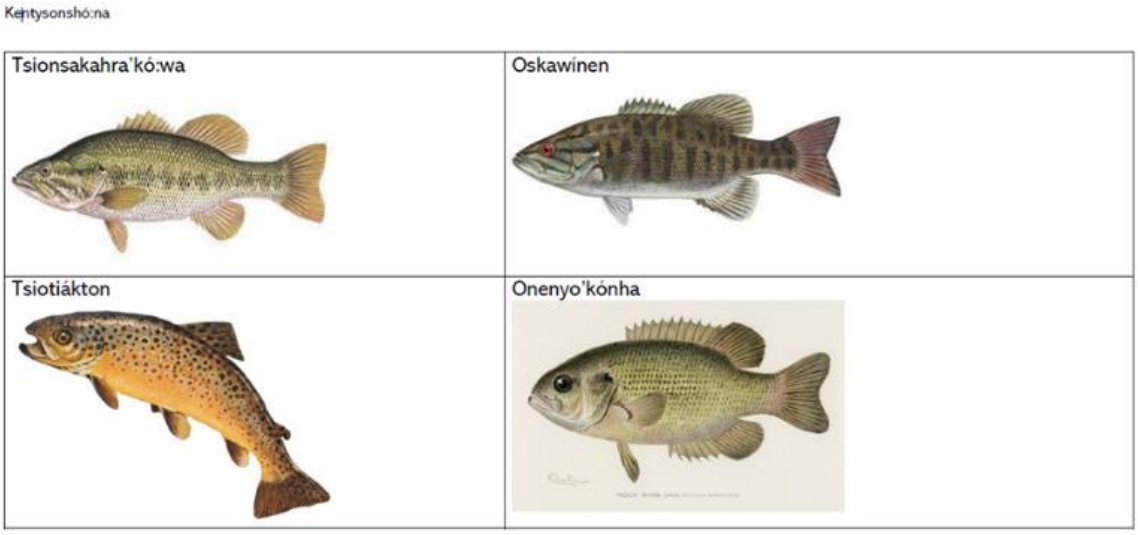
For this activity, campers were sent to the NNATC grounds to search for plants that they thought might be suitable to make a fabric dye. Rebekah also brought a crock pot and some onion skins with which to experiment. The campers added their plants to hot water and then used rubber bands and white cotton t-shirts (provided by the camp) to try to tie-dye the t-shirts with their plant-based dyes. This was only moderately successful but provided the opportunity to discuss a variety of plants, berries, mushrooms, and even rust. Some of these words were known in Kanyen'kéha, either by the campers, the staff, or the

Language Speakers, and some were not. This activity provided us another opportunity to discuss the names and uses of the plants.

Fishing

One volunteer originally from the community of Kenhtè:ke brought fishing equipment including poles and nets for the campers, and the camp provided a chart of fish species of the St. Lawrence River and their Kanyen'kéha names (see Figure 3) to the campers. Even the NNATC staff tried their luck. The Akwesasne Environmental Office also set minnow traps at various points around the island. Although no fish were caught, this activity provided a discussion of the importance of different fish species to the Kanyen'kehá:ka in general as well those specific to the community. Since it is located on the St. Lawrence River, a wide variety of fish species can be found at Akwesasne which was well-known as a spawning ground (Ingram, 2020). Thus, fishing allowed for discussion of the different types of fish and their names, but also the history of the area, fishing as a traditional and cultural activity, and the contribution that pollution has played in the loss of that activity, and further, to the language.

Figure 3
Kanyen'kéha Fishing Chart

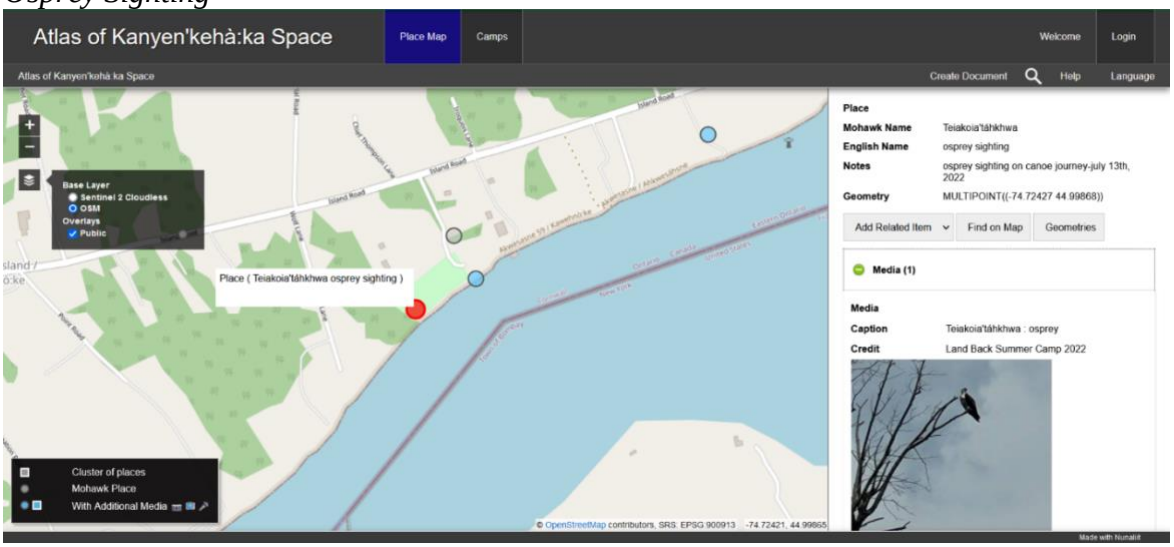


Canoeing

Canoeing was the primary mode of transportation for the Kanyen'kehá:ka for centuries, and as a result, many place names are water-based. The Mohawk Council of Akwesasne generously donated their time and the use of their 12' canoe to explore the St. Lawrence River. Almost all the campers and one camp staff member took part. Although the current was very strong, the canoers were able to paddle to see the International Bridge. We took photos and some videos, and these were entered into the Atlas. We also caught sight of an osprey, a picture of which was entered into the Atlas in Kanyen'kéha together with the name of the bird in Kanyen'kéka (see Figure 4, below). This activity provided the

opportunity for us all to see the land (and water) from a much different perspective and discuss the importance of the waterways from a cultural standpoint.

Figure 4
Osprey Sighting



Note. The sighting of an osprey during the canoe trip was entered into the Atlas together with the Kanyen'kéha word.

Net-making

We taught the campers the basic knotting techniques for making fishing nets. Each camper created their own small net. As we have not been able to locate specific vocabulary relating to individual knot techniques, and only basic vocabulary regarding the nets, we discussed the fish vocabulary and the marshy environment of the dock where the fishing took place.

Pontoon Boat Ride

The Language Speakers generously offered to bring the campers and camp staff on their pontoon boats to explore various sites on the waterways. They also allowed Ryan and Rebekah to film drone footage on the waterways for inclusion in the Atlas. We explored a site that was previously part of a ferry crossing which was no longer in use. We were also able to visit and film some of the islands that had been entered into the Atlas. The language speakers discussed the name and location of the islands using a paper map which was originally used at the first Akwesasne Mapping Workshop and whose place names and images had been entered into the Atlas. They also had some knowledge of community members who had used the islands for various purposes, or, in one case, who the island had been named for. Finally, we took video footage of the rapids by A'nowara'ko:wa Arena providing an alternative view to the ground footage already gathered there by the campers.

Swimming

Every day the campers and camp staff swam at the NNATC waterfront dock on the St. Lawrence River. This provided the opportunity to cool off and to have fun, but we also spotted a variety of fish, mudpuppies, crayfish, and even a mink, providing the opportunity to discuss the names of these animals in Kanyen'kéha.

Other Activities

Some activities focused less on the opportunity to scaffold language skills, and more on interaction with the land and general fun. For example, during swimming, language learning was not necessarily directly emphasized, but rather happened spontaneously, especially when an aquatic creature was spotted. Another activity in which language was less of a focus was cordage making. Rebekah took the campers out onto the NNATC grounds to locate nettle, grapevine, and grasses suitable for weaving and cordage making (see Figure 5). From the grasses, one camper was able to weave a small basket using a water bottle as a form. We made thick rope out of the grape vine. Rebekah also demonstrated the process of stripping the nettle, pounding it, removing the fibers, and then twisting them together to create cordage. Some of the students made beaded jewellery out of their cordage.

Figure 5
Rebekah and One of the Campers Making Nettle Cordage

Language Competency Summary

The focus on building knowledge of the content (landscape, environment, etc.), together with the use of language through interaction with each other and L1 speakers within the social context of the summer camp, rather than on grammar or reproducing specific structures, allowed freedom for participation for all levels of language learners. This point was especially important as the range of competence ended up running the spectrum from very little knowledge to fluency; as Savignon (2002) points out, "even beginners respond well to activities that let them focus on meaning as opposed to formal features" (p. 3). Speakers with little Kanyen'kéha knowledge generally built their vocabulary and learned short phrases. This vocabulary often focused on locations that were significant to them; for example, some campers lived near the crossroads of Cornwall Island, and therefore, they learned the words for the site of the Old Customs House (*Ratiienahsne*), the Recreational Area that now occupies the same site (*Rontenikonhriiosthakhwa*) and a mural painted at the recreational area (*Karahstonhkó:wa*). These points and media, together with the vocabulary, were all entered into the Atlas. Similarly, those with limited vocabulary were often curious about the names for some of the creatures encountered during swimming, such as the mudpuppies (singular, *onawatstokón:ha*) and crayfish (*otsi'eròta*).

Challenges

There were several challenges to the full implementation of the method described above, and although we attempted to compensate for these issues throughout the winter and spring planning process, it became clear that Mentor-Apprentice was simply not feasible for the camp as planned. First, Mentor-Apprentice is intended to be an immersive experience (Hinton et al., 2018), but it was not possible for the camp to achieve an immersion environment. Gomashie (2019) presents a variety of data on Kanyen'kéha vitality, including statistics from the 2016 Canadian Federal census estimating around 2,350 speakers distributed between Six Nations, Kenhtè:ke (Tyendinaga), Kanehsatà:ke, Kahnawà:ke, and Wahta. However, a 2014 survey by the Mohawk Council of Kahnawà:ke and the Kanien'kehá:ka Onkwawén:na Raotitióhkwa Language and Cultural Center with 376 participants showed that the majority of speakers (44%) were beginners, while only 12% were "advanced" or "fluent" (Gomashie, 2019). We found it difficult to locate L1 speakers who could make the time commitment necessary to attend the camp. In addition, it was important to the Research Team to fairly compensate these speakers for their time and, even with a fair portion of the NIB grant made available for L1 speakers, it was not possible to compensate them for full attendance during all parts of the summer camp. There were several other participants in the camp who were fluent, and some who were almost fluent. Some of these participants were young people who were working at the NNATC for the summer in various capacities. We were very happy to have their participation in the summer camp as the focus was on language; however, we also did not want to put them in the position of having to act in a manner outside of that of a user of the Atlas, i.e., we did not want to use their abilities to scaffold the language learning portion of the summer camp, as that was not the purpose of their attendance. Although we had hoped to maintain an immersion-only environment for the portions where language speakers were in attendance,

it was not possible to work around the various schedules involved and still maintain some sense of the original agenda and planned activities.

In addition to this, the majority of campers had only beginner knowledge of the language, with limited vocabulary and little-to-no knowledge of grammatical structures of the language. They also seemed extremely hesitant to utilize any Kanyen'ké:ha with the speakers, even when help was provided to them in the form of vocabulary and pronunciation. This hesitancy is perhaps a point to be explored further as it is unclear if it is related to the immersion environment and overall unfamiliarity with the language and language speakers, if it relates to the age of the participants, or perhaps both of these, or some other factor.

As we did not want to pressure the campers, which might result in a bad overall experience, we instead needed to pivot away from the original Mentor-Apprentice strategy and instead innovate (sometimes on the spot) ways of integrating beginner teaching strategies into the activities planned for the day. In other words, while we had originally planned and strategized for a language acquisition approach, i.e., trying to "expose the student to the target language in meaningful ways so that he or she acquires the language's structure through actual use" (Shaul, 2014, p. 23), we instead fell back upon the more traditional grammar-translation method and, subsequently, the language learning approach (i.e., learning about the language; Shaul, 2014). This was most successful with the Scavenger Hunt, where we were able to ask questions such as "Oh naho:ten ne ki:ken?" / "Oh naho:ten ne thi:ken?" ("What is this?"/"What is that?") as well as with the fishing activity, although the lack of caught fish proved to be an issue. In all, it was difficult to find a balance while using the grammar-translation method between adequate repetition and keeping the camp exciting for campers.

For the summer camps held in August 2023 and July 2024, respectively, we revised the method to facilitate better language immersion, including extending periods of time with L1 speakers during the time the campers utilized the Atlas, and used more formal grammar-translation method exercises based on the overall content. Because the 2022 summer camp represented a pilot project, and thus a dry run of the camp and the ideas, we did not feel that an assessment tool was warranted, and instead held exit interviews with camp participants. In general, the feedback from informal exit interviews was very positive, with one camper noting it was the "best camp ever." As we received funding to hold the camp over the following two years (2023 and 2024), we developed an initial assessment tool used in the summer of 2024 which successfully demonstrated the effectiveness of the Atlas as a non-human mediator in that campers successfully internalized the information they learned while interacting with the Atlas. These results will be published in a future study.

Conclusion

Over the course of this project, the field of applied linguistics has aided in the creation of an overall pedagogical process specifically through the application of task-based language learning, but also through other elements of L2 language pedagogy worked throughout the curriculum for Kanyen'kéha land-based language learning using the Atlas of Kanyen'kehá:ka Space. Although we were not able to achieve an immersion environment, and therefore, not able to apply the Mentor-Apprentice method, overall language learning for campers was achieved through the use of the Atlas specifically regarding vocabulary

development and the use of simple Kanyen'ké:ha grammatical structures, especially in later iterations of the summer camp in which the curriculum and overall method were refined, and, as of 2024, assessed, as mentioned in the previous paragraph. We are optimistic that this curriculum can be adapted to other language families, cultures, and landscapes to support language revitalization initiatives in other communities.

We hope that we have effectively answered several of the questions that Penfield and Tucker (2011) ask of applied linguists in the conclusion to their paper on the place of applied linguistics within language revitalization, including, "How can we move linguistic documentation into pedagogical formats and be creative in thinking about language teaching methods and materials that work in more innovative ways – and that also make sense within the community?" (p. 303). The Atlas of Kanyen'kehá:ka Space aims to do this as a mediator which can act as a pedagogical tool during language documentation itself. By also integrating the use of other technologies such as drones, other land-based learning activities that focus on content, and effective use of L1 speakers, we feel that we have been able to develop an innovative pedagogical method and curriculum which also "makes sense" within Kanyen'kehá:ka communities. We also hope to have answered another of Penfield and Tucker's questions, "can applied linguists develop curricula that reflect the traditions, needs, cultural values, and usable language of the community? Does their training allow for a non-prescriptive approach to the development of curricula and lesson structure?" (Penfield & Tucker, 2011, p. 303). Again, we feel that the answer to this question, as outlined in the Applied Linguistics and Indigenous Pedagogy and Language Learning sections of this paper, is, yes. Further, we feel that the methodology outlined here will be an important tool not only in terms of language revitalization, but also in terms of revitalization of landscape knowledge, cultural knowledge, and Indigenous pedagogical practices.

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Notes:

[1]Please note that the authors use the Six Nations/Ohswé:ken Kanyen'kéha spelling conventions throughout this paper as that is the convention in which they were originally trained in the language.

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Appendix A

Word List from Day 1

Forest	skarhowánnen (big forest)
River	kanyatarà:ke
	kanyatarakó:wa
	kahyónha (creek)
Sweet grass	wennekerákon
Garden	kahéhta
Chenaille	French for ‘straight’ (Snye)
Crane	ohà:kwaront
Muskrat	anò:kyen
Drone	tsikskówakarástaa