

Polysynthetic Language Structures and their Role in Pedagogy and Curriculum for BC Indigenous Languages

Final Report

prepared by Sarah Kell
contracted to the Aboriginal Education Team,
BC Ministry of Education

June 4, 2014

**Polysynthetic Language Structures
and their Role in Pedagogy and Curriculum
for BC Indigenous Languages**

Table of Contents

1. Introduction.....	3
1.1 Background and context: What is different about teaching BC Indigenous languages?	4
2. Polysynthetic languages	6
2.1 Definitions	6
2.1.1 Morphemes and affixes.....	6
2.1.2 Isolating languages vs. synthetic languages	7
2.1.3 Features of polysynthetic languages.....	9
2.1.3.1 Many morphemes per word	9
2.1.3.2 Noun incorporation	11
2.1.3.3 Lexical affixation.....	12
2.1.3.4 Classifier affixes.....	13
2.1.3.5 Head marking within phrases	14
2.1.3.6 Case study: Polysynthesis in Hul’q’umi’num’	14
2.1.4 Agglutinative languages vs. fusional languages.....	17
2.1.4.1 Agglutinative: ‘glued together’	17
2.1.4.2 Fusional: ‘fused together’	17
2.1.5 Language functions and language forms.....	18
2.2 Classification of BC Indigenous languages	19
Algonquian	19
Michif	19
Athabaskan-Eyak-Tlingit.....	20
Ktunaxa	21
Salishan	22
Tsimshianic.....	22
Wakashan.....	23
Xaad K’il.....	23

2.3 Teaching polysynthetic languages	24
2.3.1 The need for awareness and teaching of polysynthetic structures	24
2.3.2 Implications for content and pedagogy	28
2.3.2.1 Content	28
Present lexical affixes alongside independent words	28
Teach classifiers when teaching counting	29
Build awareness of word frames as well as sentence frames	29
Encourage building new Indigenous words.....	30
Create resources with less reliance on English sources	32
Focus on the context of word structure use within stories.....	34
Summary.....	35
2.3.2.2 Indigenous ways of teaching and learning	37
Word structures and cultural learning	37
Sequence	37
2.3.2.3 Pedagogy	41
The need for a balanced approach in a language revitalization learning environment	41
The role of language acquisition research in informing instruction and assessment.....	44
Instruction	45
Experiential learning.....	46
The role of direct instruction	47
Increasing form-focussed instruction.....	48
The role of literacy	49
The role of technology.....	50
Assessment	50
Kanien'kéha (Mohawk).....	51
Cherokee.....	52
Montana Salish.....	55
Sm'algyax.....	57
Summary.....	58
2.4 Implications for curriculum	59
Bringing word structures into curriculum	59
Bringing larger discourse structures into curriculum	60

Further research	61
3. Recommendations to the Ministry of Education	61
3.1 Curriculum and policy	61
3.1.1 Acknowledging Indigenous and community perspectives	62
3.1.2 A K-12 second language policy?.....	62
3.1.3 Possible ways forward with curriculum and policy.....	64
3.1.3.1 An experiential language curriculum plus a teaching grammar	65
3.1.3.2 Adapting the present Integrated Resource Package template.....	66
3.1.3.3 A curriculum format merging language forms and language functions.....	68
3.2 Other recommendations.....	69
3.3 Areas for future research	71
4. References	72

1. Introduction

This report defines *polysynthesis* as it applies to BC Indigenous languages, and considers ways to build awareness of *polysynthetic* structures into language program content, pedagogy and curriculum, with attention to Indigenous ways of teaching and learning. Teachers of Indigenous languages can improve their practice by becoming aware of the structures of words and sentences in their language, and considering ways to convey these structures to their students.

This report also considers how the BC Ministry of Education, in partnership with other stakeholders, might support Indigenous language teachers and learners in learning about polysynthetic language structures. It further identifies areas for future research on this emerging topic, in which the Ministry of Education might support BC Indigenous language teachers and researchers to take the lead.

In addition to helping teachers and learners understand word structures (*morphology*), linguistics can play a valuable role in learning and teaching about the sound systems (*phonology*) and pronunciation (*phonetics*) of Indigenous languages, as well as their sentence structures (*syntax*) and discourse structures. These topics are beyond the scope of this report, but sound systems, word structures, sentence structures and discourse structures are all connected, and all key parts of the structure of a language.

1.1 Background and context: What is different about teaching BC Indigenous languages?

BC *Indigenous languages* are languages which originated in the region now known as British Columbia. A list is provided in the First Peoples' Cultural Council's 2012-13 Annual Report.¹ European, Middle-Eastern and Asian languages taught in BC are considered *international languages*, while English and French are recognized as *official languages* in BC and Canada. Teaching BC Indigenous languages requires different approaches than teaching international languages, for a variety of interconnected reasons².

The *polysynthetic* word structures of BC Indigenous languages are one important consideration. These structures have not generally been taken into account in the development of BC Indigenous language programs to date, although European and Asian languages also have some polysynthetic features. Dr. Barbara Kelly and her colleagues at the University of Melbourne, Australia, explain that "[t]he nature of the learning task is different ... when the child is learning a polysynthetic language – a language in which words are highly morphologically complex, expressing in a single word what in English takes a multi-word clause."³

Other practical considerations for language program planning for BC Indigenous languages include:

- Most BC Indigenous languages are severely endangered or nearly extinct⁴. Different teaching methods are appropriate, and students' expectations and goals may be different in contexts of language recovery, restoration and revitalization than for widely-spoken languages.
- Many teachers of Indigenous languages in British Columbia are language learners too.
- Indigenous languages often have fewer resources readily available as sources of language input for learners (books, newspapers, textbooks, radio and television programs, etc.).
- There is an ongoing need for archiving natural language examples from fluent first-language speakers, and for documentation of the structures of Indigenous languages. Ideally, work with Elders and fluent speakers should be a part of all Indigenous language learning programs. For high school students and their teachers, this work could include ongoing archiving, documentation, and the creation of resources for themselves and future students. This ties in to Indigenous values of responsibility and continuity, and could encourage senior students to continue to study and work with their languages.

Furthermore, the teaching and learning of Indigenous languages takes place in unique and often challenging political, social, and emotional contexts. Some key issues include:

- The context of colonization and decolonization, and the responsibility of Canada, British Columbia, and the provincial education system to take action to acknowledge and correct past injustices.
- The right to speak one’s ancestral language, and the reality that most Indigenous students in BC today have acquired English as their first language. (Here, it is important to note two different uses of the term “first language”. While many Indigenous people rightly view their ancestral language as the “first” or original language of their community, most Indigenous language learners in BC today are learning their ancestral languages as second languages from a language acquisition perspective: English was the first language they acquired naturally as young children. However, Indigenous students’ feelings about their ancestral languages’ significance in their lives may be different than the feelings of students learning a second language for general interest or future work. Indigenous English speakers may also have some passive knowledge of their ancestral language, and/or vestiges of their ancestral language’s grammar and pronunciation remaining in their English.)
- The need to create safe spaces for everyone to learn - both language learners and language teachers. This includes respecting language teachers’ work to date, and empowering them to improve their teaching methods through professional development. For example, teachers who have been using flash cards and memorized dialogues for years need to be supported to transition to immersion teaching, not expected to change their whole teaching practice overnight.
- The role of language and culture in Indigenous peoples’ identity, health and well-being. Indigenous peoples and communities in BC draw strength from their heritage, cultures, and traditions, as expressed in their languages.⁵ Language learning and cultural learning are inextricably connected, as each language holds information about its speakers’ culture, social structures, and personal identities.

Onowa Mclvor, Art Napoleon, and Kerissa Dickie, reviewing published literature on language, culture, and identity in 2009, found “that language is one of the most tangible symbols of culture and group identity”⁶, and “that the loss of language is tied to a deep psychological loss of identity and culture”⁷. Darcy Hallett, Michael Chandler, and Chris Lalonde⁸ similarly concluded that, overall, the use of Indigenous languages is a “strong predictor of health and wellbeing in Canada’s Aboriginal communities”.^A Mclvor and her colleagues further summarize:

^A Hallett, Chandler, and Lalonde researched correlations between Indigenous language use and youth suicide rates. They found that Aboriginal communities “with higher levels of language knowledge (measured by a majority of its members having conversational-level abilities) had fewer suicides than those with lower levels. In fact, the rates of suicide in the bands with high language knowledge levels were “well below the provincial averages for both Aboriginal and non-Aboriginal youth” (Hallett, Chandler & Lalonde, 2007, 396).” (Mclvor, Napoleon & Dickie, 2009, 12)

- [T]he more one understands their language and the teachings associated with that language, the more access they have to core traditional knowledge that can help them to develop a stronger sense of identity.⁹
- [L]earning a language, even to the level of basic proficiency can provide a form of cultural immersion that accelerates and enhances the enculturation process and allows for more direct and meaningful insights of core values, traditions and beliefs. In other words, learning a language is essentially a way of getting intimate with the soul of a culture.¹⁰

An important goal for Indigenous language and culture programs is to help Indigenous students to develop firm understandings of their own identities and the place of their communities in BC's past, present, and future.¹¹

Dr. Trish Rosborough emphasizes that “understanding barriers to learning and speaking an Indigenous language will bring new knowledge to the development of language teaching programs.”¹² Polysynthetic language structures are just one factor to be considered in developing language programs and policies.

2. Polysynthetic languages

2.1 Definitions

To understand the meaning of *polysynthetic*, some additional linguistic terminology is needed.

Example words, phrases, and sentences illustrating the terms are provided from BC Indigenous languages wherever possible, or from other languages of North America and the world. Many of the examples are from Marianne Mithun's 1999 survey of *The Languages of Native North America*¹³, in which they are presented in a phonetic alphabet. Where possible, the examples used in this report have been transliterated into the language communities' practical alphabets.

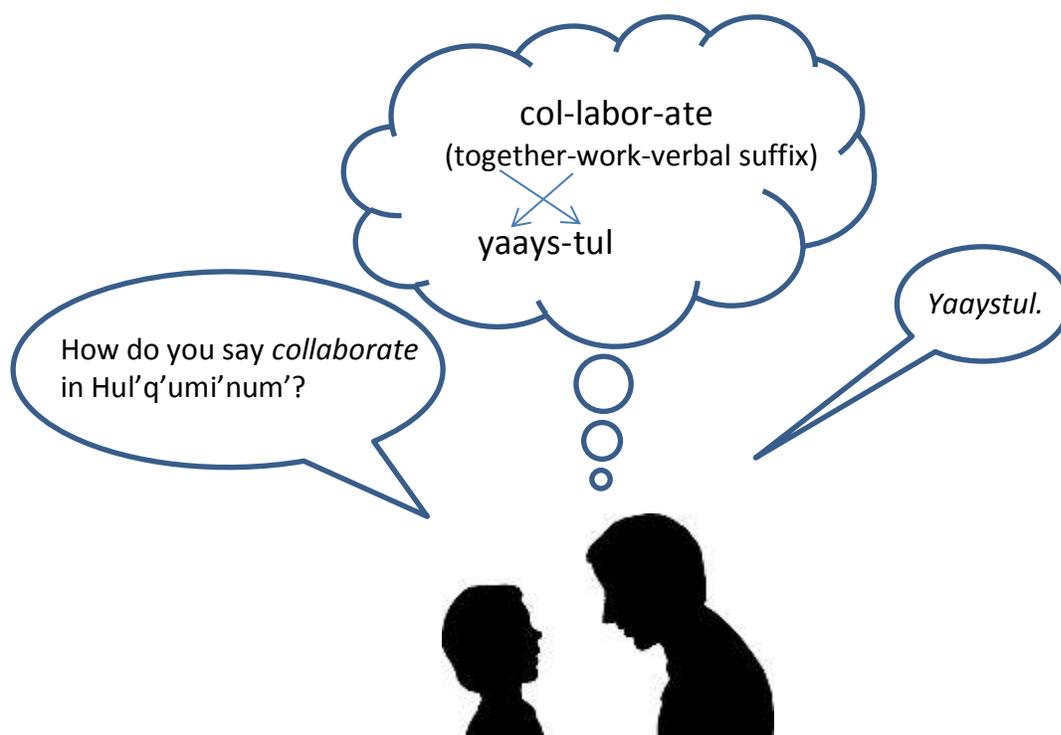
2.1.1 Morphemes and affixes

A *morpheme* is a unit of meaning in language, which can be a word or part of a word. For example, in English, the word teach has one morpheme. The word teacher has two: teach + er. The ending -er is called a *bound morpheme* because it cannot stand alone as a word. But fluent speakers of English recognize that -er is a meaningful word-part that can be added to other verbs: work ~ worker, smoke ~ smoker, drive ~ driver, etc. A morpheme might not always be spelled the same way, due to pronunciation or historical factors: Compare the endings in jailer and sailor.

The study of word formation is called *morphology*.

An *affix* is a bound morpheme which can only be used in combination with a root word. In English, affixes include *prefixes* (attached to the beginning of the root word, as in re-heat) and *suffixes* (attached to the end of the word, as in heat-er). Other languages may also have *infixes* (affixes placed in the middle of a word) and *circumfixes* (affixes placed around the outsides of a word)^B.

Morphemes with similar meanings can be combined in different ways in different languages.



2.1.2 Isolating languages vs. synthetic languages

Languages can be divided into types based on their ratio of morphemes per word: *Isolating* languages^C have few morphemes per word; in the most extreme cases, words are composed of only one morpheme. *Synthetic* languages often have many morphemes per word.¹⁴ *Isolating* and *synthetic* refer to the opposite ends of an idealized continuum, on which all languages can

^B Pre-, sub-, in-, and circum- are all Latin prefixes, meaning 'before', 'under', 'inside', and 'around', respectively.

^C The term *isolating language* is not to be confused with the term *language isolate*. A *language isolate*, such as Ktunaxa in southeastern BC, is a language which is historically unrelated to any neighbouring language.

be placed.¹⁵ Some languages are more synthetic; others are more isolating. The greater a language's morpheme-per-word ratio, the less isolating and the more synthetic it is.¹⁶

Mandarin and Vietnamese are more isolating languages, with most words including only one or two morphemes.¹⁷ In the following Vietnamese sentence, each word contains only one morpheme:

Người đó là anh nó.

Người đó là anh nó.

person that be brother he

“That person is his brother.”¹⁸

In isolating languages, context and sentence structure are more important than word structure.¹⁹ Relationships between participants in a sentence are primarily shown by word order.²⁰

Well-known synthetic languages include Spanish, Persian, Greek, Latin, German, Italian, French, Russian, Ukrainian, Arabic, Turkish, Navajo and Kanien'kéha (Mohawk). Synthetic languages may show *relational synthesis* and/or *derivational synthesis*.

In *relational synthesis*, bound morphemes are joined to root words to show the relationships between participants in a sentence.

The following words²¹ in Tanaina, a Dene language spoken in Alaska, each contain three morphemes: a verb root *izte†* ‘kick’, and prefixes indicating the *subject* and *object* of the verbal action.

shqizte†

sh- q- izte†

me-they-kick

‘they kicked me’

nqizte†

n- q- izte†

you-they-kick

‘they kicked you’^D

Derivational synthesis joins different types of morphemes to create new words.²² A great deal of derivational synthesis can be seen in English. A famous example, with six morphemes, is:

anti-dis-establish-ment-arian-ism

‘the movement to prevent revoking the Church of England's status as the official church’²³

^D In these and the following examples, the first line presents a complete word in the language being exemplified. The second line divides the word into its component morphemes, separated by hyphens. The third line provides an English translation of each morpheme, and the fourth line provides a fluent English translation of the whole word.

A fluent English speaker (with suitable contextual background!) could hear or read a word like this for the first time and determine its meaning from its component parts.

Languages may be highly synthetic in one area but less synthetic in other areas,²⁴ and languages may become more or less synthetic over the course of their history. Modern English is moderately isolating, particularly in its structural words (the, this, be, go, at, from, down, etc.). However, English has borrowed much of its vocabulary from other languages, so we also find many synthetic words in English, such as refrigerator (built from Latin word parts) or hydrocarbon (built from Greek word parts). Old English was much more synthetic than modern English.

2.1.3 Features of polysynthetic languages

The most common definition of a *polysynthetic* (or *incorporating*²⁵) language is a highly synthetic language, which forms very long words containing many morphemes. Polysynthetic languages may also display *noun incorporation* or *lexical affixation*, and/or include *classifier* affixes. Some linguists also consider *head marking* within phrases a criterion for a polysynthetic language.²⁶ The following sections provide examples of these features of polysynthetic languages. A case study follows, showing examples of polysynthesis in Hul'q'umi'num'.

2.1.3.1 Many morphemes per word

In highly synthetic languages, a single word may contain as much information as an entire English sentence.²⁷ For example, the single Kaniien'kéha (Mohawk) word *washakotya'tawitsherahetkvhta'se* means 'He ruined her dress.' A fluent speaker could determine a more literal meaning from the component morphemes: 'He made the-thing-that-one-puts-on-one's body ugly for her.' This one word expresses an idea that would have to be conveyed with several words in a more isolating language.²⁸

A high number of morphemes per word is often reached in languages which require extensive *agreement* between verbs and their subjects and objects. In this way, a single word can encode information about all the participants in a sentence, as well as the action.

Students of French are familiar with subject-verb agreement:

	1st person (includes the speaker)	2nd person (the person(s) being spoken to)
Singular	<i>Je parle.</i> 'I speak.'	<i>Tu parles.</i> 'You speak.'
Plural	<i>Nous parlons.</i> 'We speak.'	<i>Vous parlez.</i> 'You all speak.'

The bold suffixes on the verb agree with the subject in *person* and *number*.

Nēhiyawēwin has a similar pattern.²⁹ First and second person are marked with prefixes on the verb, while the number of participants is marked with a suffix.

	1st person	2nd person
Singular	ni-nipa:-n 'I am sleeping'	ki-nipa:-n 'You are sleeping'
Plural	ni-nipa:-na:n 'We (not including you) are sleeping' ki-nipa:-na:naw 'We (including you) are sleeping'	ki-nipa:-na:waw 'You all are sleeping'

Many languages require the verb to agree with the object, as well as the subject.

In Nxaʔamxcín, an Interior Salish language spoken in Washington State, both the subject and the object are part of the verb.

šáwntlp³⁰
 šáwnt-l -p
 ask -us-you.all^E
 'you all ask us'

In this example, the final suffix -p indicates that the subject of the verbal action is 'you all', while -l- indicates that the object is 'us'.

Many polysynthetic languages can also mark verbs for concepts which are indicated by adverbs or adjectives in isolating languages, thus forming very complex words.

In Yupik, an Indigenous language of Siberia and Alaska, the single word *kaipiallrulliniuk* means 'the two of them were apparently really hungry'.³¹ A fluent speaker would build this word from the following morphemes:

^E The dot separating "you.all" indicates that both English words are part of the translation of the Nxaʔamxcín suffix -p.

kaig -piar -llru -llini -u -k
be.hungry-really-PAST-apparently-INDICATIVE^F-they.two

The meanings ‘really’ and ‘apparently’ are built into the verb, rather than represented with separate words as they would be in a more isolating language.

2.1.3.2 Noun incorporation

Noun incorporation takes place when a noun is included within a verb to form a complex verb, such as when the English noun *baby* is incorporated into the verb *babysit*.³² This process is rare in English, but plays an important role in Dene and Tsimshianic languages.

In Tanaina, many incorporated nouns refer to body parts – for example, nchix ‘nose’ in nunchixgheyit ‘He’s nosing around.’³³

The following examples from Nisga’a³⁴ contrast two ways of constructing a sentence.

q’uhlay’hl hoon	q’uhlhoon n’iiy’
q’uhla-y’-hl hoon	q’uhl- hoon n’iiy’
gut -l -the ^G fish	gut - fish me
‘I gutted a/the fish.’	‘I gutted fish.’

In the first example, the noun hoon ‘fish’ is independent. In the second example, it is incorporated into the verb. Nisga’a sentences like the first one generally indicate that the action was performed on a single occasion, whereas the second sentence type indicates an ongoing, lengthy action.

^F Indicative *mood* refers to a statement of fact. Its opposite in many European languages is *subjunctive mood*, referring to hypothetical actions or states. This distinction has almost been lost in English, but compare:

“He was rich.” (stating a fact), and

“If he were rich, he would ...” (stating a hypothetical or hoped for situation).

Many Indigenous languages have very elaborate systems of *mood*, distinguishing whether a statement is true, probable, possible, unlikely, hypothetical, untrue, rumoured, etc. (Mithun 1999, 170.)

^G The analysis of this word has been simplified to avoid introducing additional linguistic terminology.

2.1.3.3 Lexical affixation

Many polysynthetic languages, including Salishan, Wakashan, and Tsimshianic languages, use special *lexical affixes* to derive complex nouns and verbs from a basic root. Lexical affixes generally have noun-like meanings, often relating to body parts, features of the landscape, or important cultural items. A lexical affix often has little or no resemblance to the free-standing noun with a corresponding meaning, as shown in the following Hul’q’umi’num’^h examples.

Lexical Suffix	Free-standing Noun	Meaning
-tsus	tselush	‘hand’
-shen	sxun’u	‘foot’
-ew’t-hw	lelum’	‘house’
-uwulh	snuhwulh	‘canoe’

A lexical suffix may be added to a verbal or adjectival root to make its meaning more specific. In this example, adding the lexical suffix -tsus ‘hand’ limits the meaning of the root xuytl’ ‘cold’ to the speaker’s hands.

xuytl’ tsun	xuytl’- tsus tsun
cold I	cold- hand I
‘I am cold.’	‘My hands are cold.’ – or literally ‘I am cold-handed.’

Lexical suffixes also provide building-blocks for the metaphors, puns and jokes which enrich Indigenous languages.

In this example in Secwepemctsin, the lexical suffix for ‘abdomen’ is used to refer metaphorically to an underground dwelling:

xk’	mənké	tx ^w
x-	k’m	-ənk -étx ^w
location-surface-	abdomen-	house
‘semi-subterranean dwelling’ ³⁵		

Rosborough gives an example of a Kwak’wala lexical suffix used for metaphorical and humorous effect:

Many Kwak’wala speakers know that the word *galt̚axst* means “tall person” and that *ts̚akw̚axst* means “short person”; an expert speaker is able to deconstruct these words to the components, *galt̚a* (“long”), *ts̚akwa* (“short”), and *axst*, the lexical suffix for

^h Hul’q’umi’num’ examples throughout this document have been selected from *The Cowichan dictionary of the Hul’q’umi’num’ dialect of the Coast Salish people* (Hukari & Peter 1995) or the *Stz’uminus Hul’q’umi’num Dictionary* (2013) where noted. Examples not attributed have been composed by the researcher, a learner of Hul’q’umi’num’.

“buttocks.” I had an additional linguistic lesson on the suffix *axst* when Florence, speaking about someone who was sick, told me that a person who feels every ache and pain is said to be *xakaxst*. Florence puzzled over why *xakaxst* is also the word for “tailbone.” When I shared my new word with another Elder, she explained that *xakaxst* is a descriptive metaphor: “If someone has a boney bum, they can’t sit comfortably because they feel everything” (F. Shaughnessy, personal communication, December 6, 2011).³⁶

Many polysynthetic languages also express location and direction with lexical affixes. The following Kwak’wala examples³⁷ are all based on the root *la*, meaning ‘go’.

<i>la-wals</i>	‘go out of house’
<i>la-sdes</i>	‘go up from beach’
<i>la-xayud</i>	‘reach the top’
<i>la-w’it</i>	‘go across’
<i>la-y’aga</i>	‘go inland’

2.1.3.4 Classifier affixes

Many polysynthetic languages, including Dene, Salishan, Tsimshianic and Wakashan languages include classifier affixes. Classifiers are used with numerals to categorize the items being counted. In the following examples from Nuuč’a’nuł, the objects being counted are classified according to their shape:

<i>ḥayo</i>	‘ten things’
<i>ḥayo-p’it</i>	‘ten long, flat objects’
<i>ḥayo-qomł</i>	‘ten round objects’
<i>ḥayo-c’iq</i>	‘ten long objects’

Similar classifiers are found in Kwak’wala:

<i>musgami migwat</i>	<i>mukwi bibaganam</i>	<i>mut’saqi ha’anat’łam</i>
<i>mu -sgam -i migwat</i>	<i>mu -ukw -i bibaganam</i>	<i>mu -t’saq-i ha’anat’łam</i>
four-bulky-this seal	four-human-this people	four-long -this arrows
‘four seals’	‘four men’	‘four arrows’

Dakelh includes five sets of numerals:³⁸ a generic set, a set for counting people, a ‘multiplicative’ set for number of times, an ‘areal’ set for places or objects that occupy space, and a set for abstract entities:

	Generic	Human	Multiplicative	Areal	Abstract
1	ʔiʔo	ʔiʔo-ɣən	ʔiʔo-h	ʔiʔo-ɣən	ʔiʔo-x ^w
2	na-nki	n-ane	na-t	n-dən	na-x ^w
3	ta	ta-ne	ta-t	ta-dən	ta-x ^w
4	də-nyi	di-ne	di-t	di-dən	di-x ^w

nane ts'eku
'two women'

nat lisman
'two weeks'

ndən yoh
'two houses'

2.1.3.5 Head marking within phrases

The *head* of a phrase is the central element within that phrase.³⁹ A language is *head marking* if the grammatical markers of agreement between different words in a phrase tend to be placed on the *head* rather than on the *modifiers*. (Many languages employ both head marking and its opposite, *dependent marking*.⁴⁰)

For example, in the English noun phrase: the man's book, book is the head noun. The man's modifies the noun - describing whom the book belongs to. The possessive marker, 's, appears on the modifier, so this construction is dependent marking in English.

The same phrase in Hul'q'umi'num' is

tthu poukw-s tthu swuy'qe'
the book-of the man

Again, poukw is the head noun and tthu swuy'qe' is the modifier. The possessive marker (which coincidentally is also -s) appears on the head noun. This construction is head marking in Hul'q'umi'num'.

Head marking can also be seen in agreement between verbs and their subjects and objects.

In an English verb phrase like Kevin dances, the verb dance is the head of the phrase. The 3rd person singular subject, Kevin, requires the 3rd person singular suffix, -s, to appear on the verb.

2.1.3.6 Case study: Polysynthesis in Hul'q'umi'num'

Hul'q'umi'num' displays four of the major features of polysynthesis. It is *head marking* in possessive phrases, as shown in the example above.

Hul'q'umi'num' also makes frequent use of *lexical suffixes*, as the following examples⁴¹ demonstrate.

s'a'-shan-um	'raise one's feet'
s'aa-ts'-um	'raise one's hands'
tth'uxw-shen-um	'wash one's feet'
tth'xwa-tss-um	'wash one's hands'

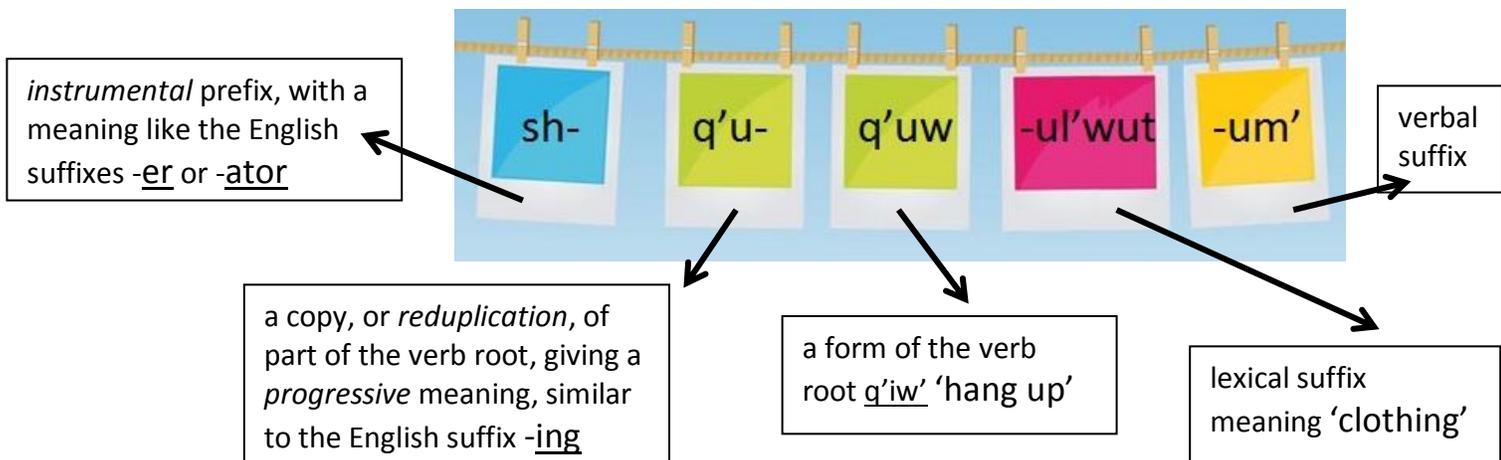
Each of these words includes a verb root (s'aa 'raise' and tth'uxw 'wash'), a lexical suffix indicating a body part (-shan ~ -shen 'foot' and -ts' ~ -tss from -tsus 'hand'), and a verbal suffix -um, with a *reflexive* meaning like 'one's own' in this context.

Hul'q'umi'num' has approximately 120 lexical suffixes. About 30 of these also function as numeral classifiers, referencing important elements of Hul'q'umi'num' culture, or the shape of items being counted.

lhhw-elu	lhhw-iws
'three people'	'three ducks'
lhhw-umutth'	lhhw-us
'three long thin objects'	'three small round objects, three dollars' ⁴²

Hul'q'umi'num' is also highly synthetic, displaying both derivational synthesis and relational synthesis.

The derived word shq'uq'uwwul'wutum' 'clothesline'⁴³ contains five morphemes:

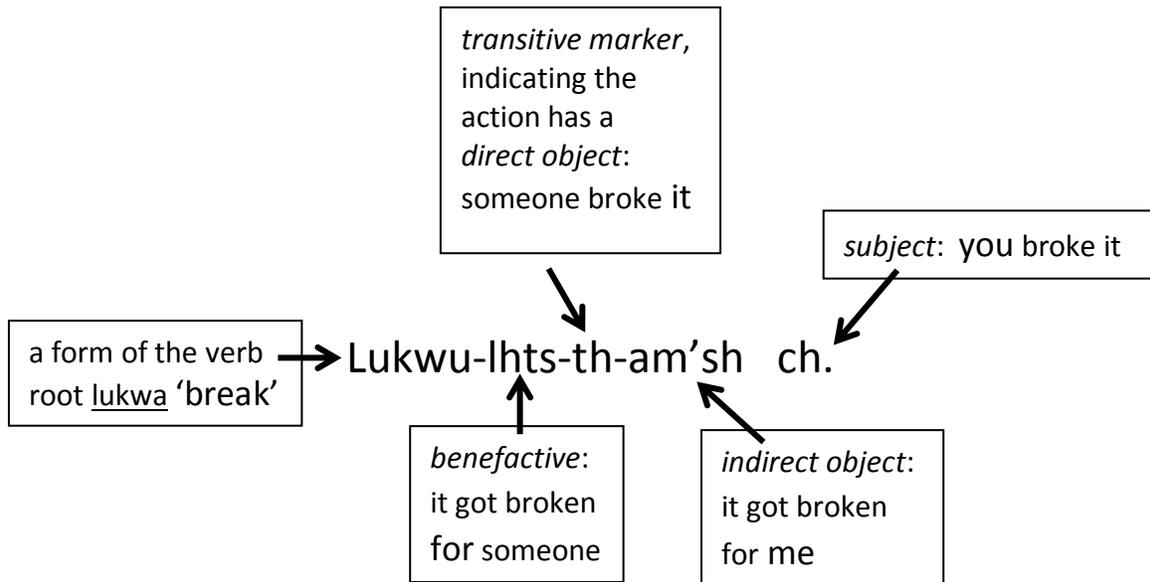


The combined literal meaning of the parts of shq'uq'uwwul'wutum' is 'thing for hanging up clothing'.

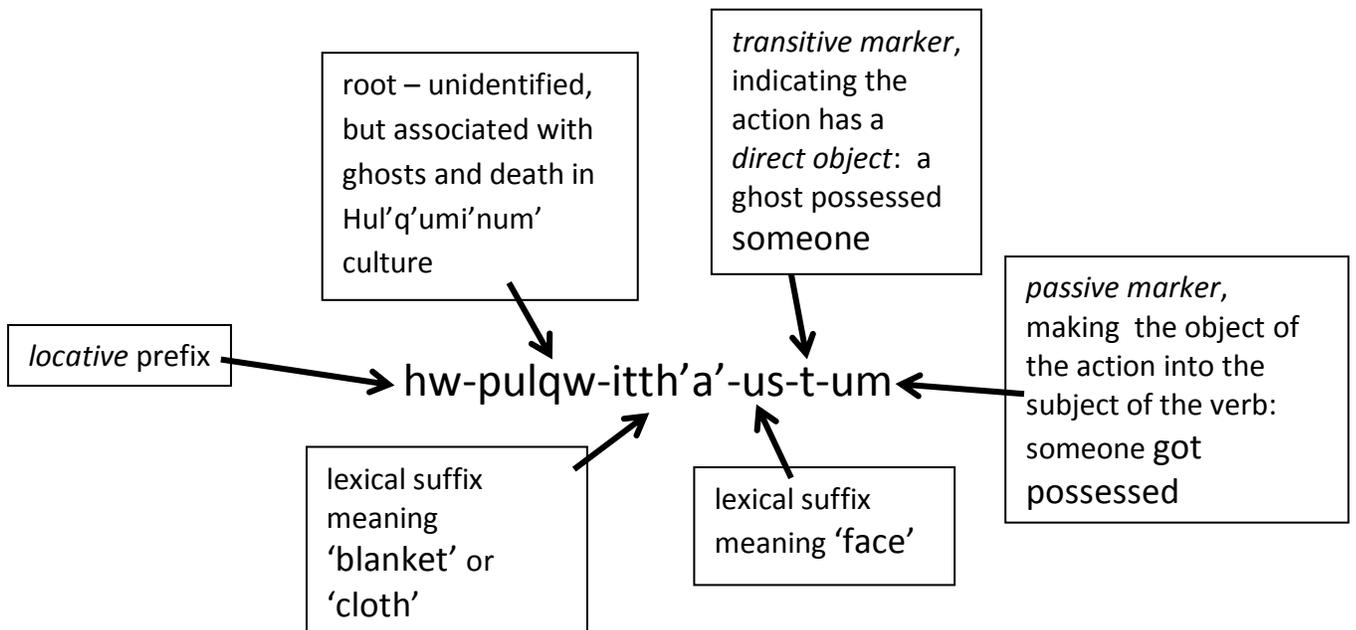
Complex Hul'q'umi'num' words can be built which include referents for various participants in a sentence. In the following example, 'you' is expressed with the independent word ch. The other participants are marked with suffixes on the verb.

Lukwulhtstham'sh ch.

'You break it (e.g., a stick) for me.'



Dr. Donna Gerdts discusses the six-morpheme Hul'q'umi'num' word hw-pulq-witth'a'-us-t-um, 'to be adversely affected by a spirit entering the body through the face' in her paper entitled *Ghosts, Mirrors, and Adversative Passives in Hul'q'umi'num'*.

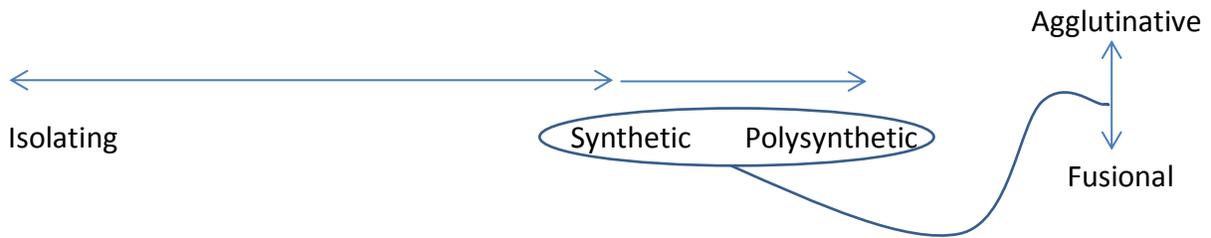


This word illustrates the challenges faced by researchers, teachers, and learners of polysynthetic languages, and demonstrates the role of cultural knowledge, as well as linguistic knowledge, in constructing and interpreting a highly polysynthetic word.⁴⁴ Morphemes which are not adjacent interact to create the overall meaning of the word. In this example, the hw- prefix and the -us suffix combine to indicate that the location of the ghostly possession was the victim's face.

2.1.4 Agglutinative languages vs. fusional languages

Synthetic and polysynthetic languages can be further classified as *agglutinative* or *fusional*. Polysynthetic languages may include both agglutinative and fusional characteristics.⁴⁵

Again, these concepts represent the ends of an idealized continuum, so a synthetic language can be described as more agglutinative, or more fusional.⁴⁶



Over the course of time, languages can shift from one type to another. Fusional languages generally tend to become more isolating over time. Other languages may shift over time from agglutinative to fusional.

2.1.4.1 Agglutinative: ‘glued together’

In an agglutinative language, words contain a linear sequence of morphemes, as in dis-establish-ment.⁴⁷ Each affix represents only one unit of meaning. The affixes never fuse together, nor change their pronunciation due to the presence of other affixes. Agglutinative languages tend to have a high number of morphemes per word.⁴⁸

Agglutinative languages include Japanese, Korean, Turkish, Dene languages and Salish languages. The Hul’q’umi’num’ word shq’uq’uwul’wutum’ ‘clothesline’ in section 2.1.3.6 (p. 15) above is a good example of agglutination.

2.1.4.2 Fusional: ‘fused together’

In a fusional language, words typically contain more than one morpheme, but they cannot easily be divided up.⁴⁹ Two or more morphemes are fused together.⁵⁰

In Latin, the word servus ‘servant’ may be divided into root and suffix: serv-us. The suffix -us indicates three morphemes: singular number, masculine gender and nominative case. (That is, one male servant is the subject of the sentence.) Changing any one of the three morphemes requires using a completely different suffix.⁵¹

	Masculine		Feminine	
	Singular	Plural	Singular	Plural
Subject	serv-us	serv-i ^l	serv-a	serv-ae
Object	serv-um	serv-os	serv-am	serv-as

Other fusional languages include Sanskrit, Greek, German, Russian, Ukrainian, Icelandic, and Hebrew.

Second-language learners of fusional languages must generally simply memorize the necessary affixes.

2.1.5 Language functions and language forms

Section 2.3 (pp. 24-58) makes use of the applied linguistics terms *language functions* and *language forms*. *Language functions* are communicative functions: **what** is being expressed with the language. *Language forms* are grammatical structures: **how** concepts are expressed with the particular word structures or sentence structures of the language.

For example, in English, the function of expressing a progressive, ongoing action is accomplished by adding the suffix -ing to a verb. In Hul’q’umi’num’, a similar language function is expressed with a different language form, *reduplication*:

tsuluw’t	tsu-tsuluw’t
‘turn it over’	‘turning it over’ ⁵²

Teachers of polysynthetic languages must be familiar with both the functions and the forms of their language, and work to bring more *form-focussed* instruction into their classrooms.

¹ A few Latin fusional suffixes are still with us in English words like alumnus, alumna, alumni, alumnae.

2.2 Classification of BC Indigenous languages

All North American Indigenous languages display some degree of synthesis,⁵³ and all BC Indigenous language families¹ can be considered polysynthetic, as their languages include one or more of the features discussed above. In her 1999 survey of *The Languages of Native North America*, Mithun describes Wakashan and Algonquian languages as particularly polysynthetic. Tsimshianic languages have all the features of polysynthesis discussed above, including both lexical affixation and noun incorporation. Salish languages, Dene languages and Tlingit languages also have many of these features.

Algonquian⁵⁴

Algonquian languages, part of the larger Algic family, are polysynthetic. Nouns may be simple, compound, or derived, and are marked for animacy (animate / inanimate), number and proximity (near / intermediate / distant or invisible). Possessed nouns are marked with prefixes, as in the following example from Severn Ojibwa:

ihkwē o-kosihsan
woman her-son
'the woman's son'

Verbs must include affixes referring to their core participants, as in the Nēhiyawēwin examples in section 2.1.3.1 (p. 10) above, and may also include morphemes similar to incorporated nouns.

Michif

Michif⁵⁵, the language of the Métis, can be considered part of the Algonquian language family as it was derived from southern Plains Cree, combined with Métis French. Michif was created in the first half of the nineteenth century by bilingual speakers of Cree and French, and came to be learned as first language by children. Unlike most other *contact languages*, Michif does not have simplified grammatical structures or vocabulary. Rather, it combines the most complex areas of both source languages: nouns and noun phrases from French, and verbs, verb phrases and sentence structures from Cree. Linguists Bakker and Papen⁵⁶ have concluded that Michif

¹ A *language family* is a group of historically related languages, considered to have developed from a common ancestor language or *proto-language*. Languages in the same family have related grammatical structures, although the degree of similarity depends on how much time has passed since the languages diverged. Languages in the same family may be mutually intelligible, again to varying degrees. A highly fluent speaker of a Coast Salish language can understand other Coast Salish languages, as a fluent speaker of German might understand another Germanic language, such as Dutch or Danish. Speakers of Indigenous languages might describe language families differently from linguists. Language families listed in this section are as listed in: First Peoples' Cultural Council (2013). *Annual Report 2012/13*. (Brentwood Bay, Canada: First Peoples' Cultural Council.)

Athabaskan-Eyak-Tlingit languages are primarily prefixing;⁵⁸ a verb can include up to 20 prefixes before the root. Prefixes may indicate the subject and objects of the verb, qualify the meaning of the verb root, indicate location or direction, and perform many other functions. Prefixes which are not adjacent to each other can interact to yield meanings that are not predictable from the meanings of the individual morphemes.⁵⁹

Many Dene languages feature *classificatory verbs*, as shown in the following examples.⁶⁰

In Dene K'e, one may ask for tea (lidí, from French le thé) in a variety of ways:

Lidí seghánj- chu .	'Hand me the tea.'	(a single box or bag)
Lidí seghánj- wa .	'Hand me the tea.'	(boxes or bags)
Lidí seghánj- hxo .	'Hand me some tea.'	(a handful)
Lidí seghánj- hxe .	'Hand me the tea.'	(in a deep, closed container)
Lidí seghánj- hge .	'Hand me the tea.'	(in a cup – open, shallow container)

The choice of verb root depends on the shape, consistency, number, and containment of the object in question, reflecting that these features affect how the object moves or is handled: Tea in a cup is handled differently from a handful of tea leaves.

Ktunaxa⁶¹

Ktunaxa, a *language isolate*, shows complex morphology, especially relational synthesis. It has an extensive inventory of affixes, including 16 verbal prefixes describing locations.

A *pronoun* is placed before a noun to indicate possession:

ka a-kitʔaʔmiʔ
my house/tent

Suffixes indicate verbal objects:

n'iktuqu-**nap**-ni
'he washed **me**'

n'iktuqu-**nis**-ni
'he washed **you**'

n'iktuqu-**nawas**-ni
'he washed **us**'

Salishan

The Salishan family includes Nuxalk, and the Coast Salish and Interior Salish subfamilies. The examples from Hul'q'umi'num' throughout section 2.1.3 (pp. 9-17) above illustrate many of the polysynthetic features of Salishan languages: Words with many morphemes, lexical affixation, head-marking, and relational synthesis. Each Salishan language has 100-150 lexical suffixes,⁶² and many also include classifiers. Monomorphemic words may stand alone in Salishan languages, but more often appear with affixes, reduplication, or other morphological processes.

Tsimshianic⁶³

Tsimshianic languages show many polysynthetic features, including hierarchical internal word structure, many derivational affixes, and compounding processes which create verbs, nouns, and adjectives.

A possessed noun is head-marked with a suffix identifying the possessor, as in the following Nisga'a phrase.

wilp t Peter
 wilp -t -s t Peter
 house-connector-his connector Peter
 'Peter's house'

Nisga'a has four sets of numerals, for counting humans, animals and clothing, canoes and boats, and other objects. Three of these sets are shown in the First Peoples' Cultural Foundation's children's primer *K'il'hl Mihlatgum Gan (One Green Tree)*:⁶⁴

	Humans	Animals and Clothing	Objects
1	k'yool	k'eeqw	k'il'
2	bagadil	t'ipxaat	gilp'il
3	gwiloon	gwilan	gwilal'
4	txalpxdool	txalpx	txalpxhl

In Nisga'a, participants in every clause are specified either by suffixes on the verb, or by independent pronouns.

ma wil hlimoom-y'
ma wil hlimoom-y'
you when help -**me**
 'when you helped me'

Noun incorporation in Nisga'a is shown in section 2.1.3.2 (p. 11) above. Nisga'a also has affixes with root-like meanings, such as the prefix sin- 'to chase, go after', which is added to a noun to form a verb:

sint'ipin
sin- t'ipin
chase-sealion
'to hunt sealions'

Wakashan⁶⁵

Wakashan languages are highly polysynthetic, featuring infixes, reduplication, and extensive suffixation. Classifier suffixes are used on numerals to indicate the shape or category of objects being counted, as shown in section 2.1.3.4 (p. 13) above.

Each Wakashan language includes hundreds of lexical suffixes. Wakashan lexical suffixes serve a wider range of functions than those of Salishan languages, with meanings that correspond to roots, words, and even whole phrases in more isolating languages. They describe actions, locations (see section 2.1.3.3 on p. 13 above), body parts, and other concepts, and can be added to both verbs and nouns.

The meanings of many Kwak'wala body part suffixes have been extended metaphorically. For example, -it̥ba means both 'outside of nose' and 'point of land'.

kidziṭbi	tṭiniṭbi
kidz -it̥bi	tṭin -it̥bi
ornament-nose	steer-nose
'nose ornament'	'steer at a point of land'

Xaad K'il⁶⁶

Xaad K'il, currently considered a *language isolate*, displays varying degrees of synthesis. Nouns referring to indigenous items generally have only one morpheme, while those for introduced items may be more complex.

k'ad	kigu
'deer'	'spruce root basket'

ts'isgalang'u	taydan
ts'is- galang-'u	tay -dan
hollow.volume-cook -instrument	lie.down-place
'cooking pot'	'bed'

Compound nouns can also be formed. Possession is shown with an independent pronoun.

Xaad K'il verbs can include both prefixes and suffixes, with meanings related to direction, number, and time frame. The prefix closest to the root is a classifier, reflecting the shape, size, or animacy of an entity involved in the event.

gudlgagang'way hla hlgagwidang
gudlgagang'way hla hlga -gwi-da -gang
chair I branching -fall -make-it
'I dropped the chair.'

In this example, the classifier reflects the shape of the chair. The same prefixes appear with numerals in counting.

Verbs can be further described with suffixes, or with independent adverbs.

2.3 Teaching polysynthetic languages

2.3.1 The need for awareness and teaching of polysynthetic structures

Teachers of polysynthetic languages can improve their practice by becoming aware of the structures of words in their language, and considering ways to convey these structures and patterns to their students.

Teaching or modelling patterns of word-building gives language learners the tools they need to determine the meaning of unfamiliar words they encounter in listening and reading, and to create authentic words in their language to describe new items or concepts. A command of word-building patterns frees learners from having to simply memorize long lists of vocabulary.⁶⁷ Memorization and rote learning can play a substantial role in learning isolating languages, but may be less helpful for polysynthetic languages, due to their vast numbers of roots and affixes which can combine in multiple ways.⁶⁸ Rosborough describes discovering the lexical suffix patterns of Kwak'wala:

Tonight I learned about lexical suffixes. I'm sure I must have read this before but I hadn't understood until this student presentation that a lexical suffix takes on the meaning of a word. Until tonight, I couldn't understand why the phrase *didaxt'sana*—wiping hands—doesn't have the word *a'ya'su*

[hand] in it. Each time I learn something like this, I feel I've found a key to learning Kwak'wala. The more keys I find, the less I need to rely on memory. (journal entry, April 6, 2009)⁶⁹

While Rosborough finds the study of word structures helpful for learning Kwak'wala, it is important to acknowledge that fluent speakers and linguists might analyze or describe word structures differently.^K Introducing the study of word structures to Indigenous language learners should always begin with consulting Elders and fluent speakers in the community and honouring their perspectives.

Teachers and learners also need to become more aware of the role word structures play in the authentic use of Indigenous languages. An understanding of word structures provides valuable insight into Indigenous language communities' worldviews, and speakers' identities and sense of place. "Who we are is reflected in how we speak", says Rosborough.⁷⁰ She writes:

Understanding literal meanings and constructs of Kwak'wala fosters appreciation, joy, and motivation in the work and propels it forward, because it reinforces and teaches us about who we are as Kwakwaka'wakw people. The language lives in relationship with the spirit of Kwak'wala.⁷¹

In Hul'q'umi'num',⁷² the verb root q'te 'walk along' is modified with lexical suffixes to highlight the geographical place where the action is occurring. Body part suffixes are metaphorically extended refer to features of the landscape:

q'tathun
q'te -athun
walk.along-mouth
'walk along the shore, walk by the river'

q'tequn
q'te -qen
walk.along-foot
'walk along the base of a mountain'

One might refer to "the river's mouth" or "the foot of the mountain" in English, but the locations are disconnected from the action in an English sentence. In Hul'q'umi'num', Kwak'wala, and other polysynthetic languages, location is fundamentally connected to action. The close connection of verb and lexical suffix reflects the close connection of Indigenous language speakers to place.

Ari Sherris, Tachini Pete, Lynn Thompson, and Erin Flynn Haynes describe the cultural and grammatical importance of relationships in Montana Salish:^L

^K Furthermore, not all linguists agree on particular analyses of word structures!

^L Seliš, or Montana Salish, is a Southern Interior Salish language, related to the BC languages Nteʔkepmxcín and Nsyilxcən. Montana Salish speakers and learners refer to their language simply as Seliš, or Salish. This report uses the spelling Seliš to distinguish this particular language from the wider language family, Salish.

Essentially, most Salish words must be expressed precisely in terms of their relationships to other objects and persons. This emphasis on relationships in the language is a reflection of the Salish cultural importance of understanding and expressing relationships with clarity and precision.⁷³

Another excerpt from Rosborough’s dissertation illustrates the role of place, relationships, and context in Kwak’wala word-building:

The goal was to translate some early literacy books from English into Kwak’wala. Because these books were written for beginner readers, there are few words on each page. However, I was surprised by the difficulty that the fluent Kwak’wala speakers with whom I was working encountered. One of the struggles seemed to be that the English words on the page did not give enough context to be easily translated; the translators wanted clarification of time, relationships, and place before they offered the Kwak’wala words. One of the words that I learned from the project is *at̓i*. I wanted to check my pronunciation of the word and later asked my Uncle Pete whether *at̓i* was the right word for “forest.” Uncle Pete thought for a moment and then told me that it *could* be the right word. He explained that *at̓i* means “behind or away from the beach.” Because our people lived on the beach, the forest was behind or away from the place from which they oriented. It seems that translating fluid Kwak’wala words into English has the potential for them to lose their complex relational meanings; for example, rather than describing the forest with regard to our people’s worldview or lived experience, the word *at̓i* becomes assigned as a static label with one meaning.⁷⁴

This excerpt also highlights issues with direct translation of English resources. Word order may be different in different languages, so translators need to be conscious of correct phrase and sentence structures. A simple English phrase proved challenging for the team translating the children’s primer *One Green Tree* into N̓t̓eʔkepmxcín:

The N̓t̓eʔkepmxcín translators found that the grammar of their language is so different from English that their Elders would not accept phrases with the structure “one green tree”. To be grammatically correct in N̓t̓eʔkepmxcín, they needed to have articles before the adjective and noun:

péyeʔ tk ʔeskʷaíkʷaí tk syép
one (the) green (the) tree

The translators and Elders’ committee ultimately decided that they would prefer not to use the colour words in the main text, and submitted phrases with the structure of *péyeʔ tk syép* – “one (the) tree”.⁷⁵

Direct translation from English may also create word-for-word translations using separate words, when a synthetic word might be more authentic in an Indigenous language. For example, a learner of Hul'q'umi'num' might translate 'clap your hands' word-for-word as

lhuqw't tthun' tsultselush
clap your hands

However, a fluent speaker might use a synthetic word:

lhuqw'tssum⁷⁶
lhuqw'-tss -um
clap -hand-self
'clap your hands'

Synthetic words in Indigenous languages might also be perceived by language learners as more than one word. For example, the independent noun for 'house' in SENĆOŦEN is Á,LEN.⁷⁷ However, the lexical suffix for 'house' or 'place', -ÁUTW, is sometimes written as a separate word. The word

PEPÁKĒNÁUTW
PE- PÁK -ĒN -ÁUTW
PROGRESSIVE-bloom-VERBAL.SUFFIX-house
literally: 'blossoming place'
'greenhouse'

was recently written as two words in a community electronic newsletter: PEPÁKĒN HÁUTW⁷⁸.

Further research is needed around fluent speakers' and learners' perceptions of word structures.

Examples of a synthetic word being written as two words, or an English phrase being translated as a phrase rather than a synthetic word, suggest possible language change. In the worst case, neglecting word structures in teaching Indigenous languages could hasten this process: Indigenous languages might lose or change their unique features as learners make analogies with English.

While it is important to create safe learning environments where learners feel comfortable taking risks and making mistakes as part of the language learning process, it is equally important to pass on correct traditional word structures and sentence structures. Building awareness of word structures and how to teach them can help perpetuate and revitalize Indigenous languages' unique features, and lead to truer, more vibrant uses of the languages.⁷⁹

2.3.2 Implications for content and pedagogy

Teachers of more isolating languages generally address pronunciation, vocabulary, and sentence structure. Teachers of polysynthetic languages also need to consider word structure, and how to convey word building skills to their students.

Teaching a polysynthetic language does not necessarily require varying teaching methods. Rather, an awareness of polysynthetic features will affect the content and sequence of what is taught. As teachers become more aware of word structures, they can build that awareness into the ways they teach. Rosborough cautions that “we don’t want language classes to become linguistics classes.” However, a more deliberate focus on the building blocks of words would be beneficial.⁸⁰

Sherris and his colleagues⁸¹ emphasize that language revitalization requires awareness not only of language structures, but also of language acquisition processes (both for first languages and second languages), instructional tasks, and language assessment.

The following sections consider how an awareness of polysynthetic features might affect the content of an Indigenous language program; the relationship between polysynthetic structures and Indigenous ways of teaching and learning; and pedagogical considerations for instructing and assessing polysynthetic languages, including the role of language acquisition research.

2.3.2.1 Content

The following recommendations outline some possible ways to incorporate greater awareness of polysynthesis into language instruction.

Present lexical affixes alongside independent words

Many students of BC Indigenous languages learn the basic noun vocabulary for body parts and cultural items early on. Their learning could be expanded by teachers’ also modelling the use of the lexical affixes for these concepts. Teachers should model synthetic words like lhuqw’tssum (‘clap your hands’ in Hul’q’umi’num’) from an early age. Lexical affixes’ relationship to independent nouns could then be presented more explicitly at an appropriate grade level.

Lexical affixes can also be highlighted when producing bilingual dictionaries. For example, if you looked up hand in an English-Hul’q’umi’num’ dictionary, it would be helpful to find cross-references not only to tselush ‘hand’ and tsultselush ‘hands’, but also to the lexical suffix -tsus, which is used to build synthetic words like lhuqw’-tss-um.

Teach classifiers when teaching counting

As outlined in sections 2.1.3.4 (p. 13) and 2.2 (pp. 19-24) above, most - but not all - BC Indigenous languages include *classifier* affixes which describe items being counted according to their shape, consistency, animacy, or other features. These affixes can be introduced when modelling or teaching counting, giving students insights into the cultural contexts for their use.

For example, the *Gitxsanimx ~ Gitxsanimax 5 to 12 Integrated Resource Package 2014* introduces classifiers as part of learning to count, and incorporates more complex number forms for use in specific contexts at the junior high level:⁸²

Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
<ul style="list-style-type: none"> count to 10 using appropriate counting words for people, animals, and objects - e.g., <i>k'i'y</i> 'one thing', <i>k'eekw</i> 'one animal', <i>k'yul</i> 'one human' 	<ul style="list-style-type: none"> count to 20 using appropriate counting words, and recognize numbers when given randomly 	<ul style="list-style-type: none"> recognize and use numbers to 100 - e.g., <i>xwsdins wil k'yep</i> ~ <i>xwsdins wil k'yap</i> 'fifty', <i>k'i'y wil k'yept</i> ~ <i>k'i'y wil k'yapt</i> 'one hundred' 	<ul style="list-style-type: none"> use appropriate counting words for people, animals, and objects 	<ul style="list-style-type: none"> use appropriate vocabulary for counting in real life contexts - e.g., measurement, counting money 	<ul style="list-style-type: none"> use appropriate vocabulary for counting in traditional and contemporary contexts - e.g., <i>k'ildakhl</i> 'unit of forty dried fish'

Build awareness of word frames as well as sentence frames

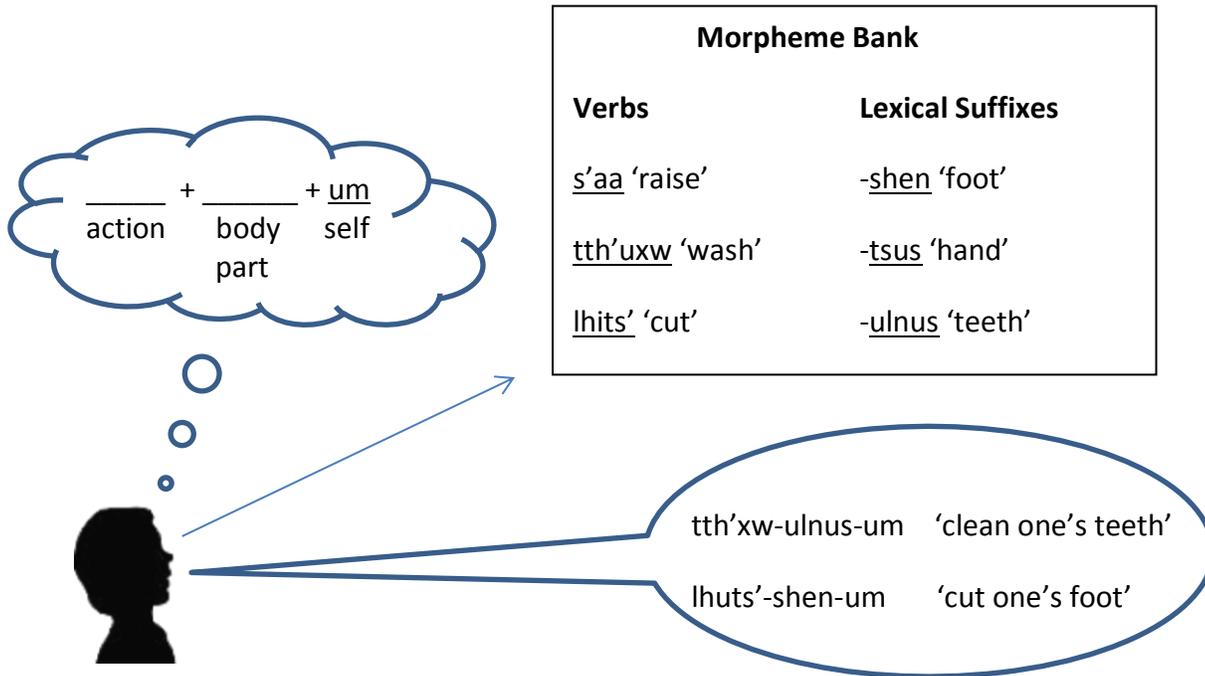
Many language teachers are familiar with *sentence frames*, where students learn a particular structure (through modelling or overt teaching) and can then modify it by inserting their own words. Here are some examples from the *Kwak'wala 5 to 12 Integrated Resource Package 2010*:

Yo, nugwa'am_____. (Hello, I am _____.)
 Gayut4an lax _____. (I am from_____.)
 Ix'akan t4ax _____. (I like_____.)⁸³

As Indigenous language teachers become aware of word-building patterns in their languages, they can also develop *word frames*: Students can learn a word structure, and then apply the pattern with new word-parts.

Hul'q'umi'num' words like *s'a'shanum* 'raise one's feet', shown in section 2.1.3.6 (p. 15) above, have the basic structure verb + body part lexical suffix + um.

Students could gain command of this pattern and then apply it with different verbs and/or lexical suffixes.⁸⁴



Teachers of polysynthetic languages can enrich students' learning by moving beyond sentence frames and word banks to word frames and morpheme banks.

Teachers should also pay particular attention to sound changes that may occur due to stress patterns or sound combinations when morphemes are combined in different ways. For example, in lhuts'shenum, the verb root lhits' is combined with the lexical suffix -shen. The stress falls on the lexical suffix, so the root vowel changes from i to u in the resulting word: lhits' + shen + um = lhuts'shenum. (In the Hul'q'umi'num' alphabet, the letter u represents an unstressed vowel, pronounced like the e in the English word ticket.)

Encourage building new Indigenous words

The ability to create new words to express new concepts is an indicator of a vibrant, living language. As Dr. Marianne Ignace wrote in the *Handbook for Aboriginal Language Program Planning in British Columbia*:

Aboriginal speakers have a long history of naming new things which were adapted into Aboriginal cultures. In many cases, new terms were invented which made use of the concept behind a new device, and composed a term for it through the categories of the native language.

Ignace gives an example of the Secwepemctsin word for ‘refrigerator’, cts’ellmen, made from the particle c- ‘inside’, the root ts’ell ‘cold’, and the suffix -men ‘instrument’.⁸⁵

Several Integrated Resource Packages (IRPs) for BC Indigenous languages include an instructional strategy which asks senior students to consider these processes of *derivational synthesis*. The following example⁸⁶ appears in the grade 12 curriculum in the *Hul’q’umi’num’ 5 to 12 Integrated Resource Package 2007*:

- Invite students to work with an Elder or fluent speaker to study the impact of technology on the Hul’q’umi’num’ language, considering the development and construction of words for modern concepts and machines (e.g., *shxuytl’elu*, “refrigerator”, *shquqq’ule’tsul’s* “hay-baler”). Discuss the facility of the Hul’q’umi’num’ language for creating new words, rather than simply borrowing them from other languages. Then challenge students to build words for two new items or concepts, using Hul’q’umi’num’ word-parts. Students could then present their suggestions to Elders and try using the new words in conversation.

The Mohawk Language Standardisation Project’s 1993 report⁸⁷ provided detailed documentation of how words are created in a polysynthetic language, and recommended best practices for forming new Kanien’kéha (Mohawk) words - according to function, characteristics, or activity. Here are a few examples:

Function:	teionrahsi'tahrákhwa	footstool	(a place to put your feet on)
Characteristics:	iohna'táhtsheronte	kangaroo	(an animal with pockets)
	teiohiahió:tsis	lemon	(a sour/salty fruit)
	o'nó:wa	guitar	(It is shaped like a turtle's shell.)
Activity:	kà:sere	car	(something one can pull or drag)
	tekaristó:rarak	typewriter	(It presses steel.)

The compilers of this report noted that these word formation strategies are “second nature to fluent speakers of the language.”⁸⁸

Olivia Sammons⁸⁹ has similarly documented word formation processes in Sauk, an Algonquian language now spoken in Oklahoma. Sammons observed processes of compounding and affixation, and the use of verb phrases to “talk around” noun-like functions, as in the following example:

etashipêkohikêwâchi
e- tashi- pêkohikê-wâchi
CONJUNCT-place.where-dry -they
literally: 'where they dry'
'clothes dryer, clothesline'

As teachers of BC Indigenous languages become more aware of polysynthetic patterns in their languages, they will also begin to observe how fluent speakers create new words as needed. Word-building patterns and processes could be documented for BC languages (perhaps as part of the First Peoples' Cultural Council's Language Authority development program), and actively presented or taught to language learners. Language programs can be enhanced by modelling word-building throughout the grades, and providing opportunities for students to try out words they have built – whether they are words that others have built before, or a new Indigenous word coined for a 21st century concept.

Students and teachers should learn about word-building processes with the guidance of fluent Elders wherever possible. Rosborough highlights fluent Elders' knowledge of Kwak'wala language structures:

Elders who have developed Kwak'wala expertise have knowledge and a deep understanding of the constructs of the language that go beyond the ability to use Kwak'wala for communication. These expert speakers explicitly teach about the structures of Kwak'wala. My late grandfather had such an understanding of and appreciation for our language and would often offer what seemed like spontaneous lessons on these concepts.⁹⁰

Create resources with less reliance on English sources

More authentic learning resources for BC Indigenous languages can be created by moving away from using English-language resources as models.

Translators of English songs or books should become aware of the polysynthetic features of their language, and be careful not to simply translate the English text word for word if a synthetic construction is more appropriate in the Indigenous language. Dr. Melissa Axelrod and Dr. Jule Gómez de García, researching how traditional narrative structure supports the acquisition of Apachean Dene languages, conclude "that it is essential to use real nursery rhymes, songs, narratives, and conversation as the basis for lessons and practice. An emphasis on storytelling and repeating games is also supported ..."⁹¹

Dr. Strang Burton, a linguist who works with Stó:lō Halq'eméylem, advocates working from visual cues, rather than English text, when creating Indigenous language resources:

... documentation that starts from translating phrases in English into the language can

often lead to problems: simple phrases that make sense in English often have no direct equivalent in the language, and vice versa. I have had to work with this methodology quite a lot, and I have a lot of misgivings about that approach. Rather than starting from written text in English (especially in cases where the underlying conceptual distinctions are drawn in a different way...), I therefore always prefer to start with images (or animations, etc.), indicating a series of actions; I have had good success recently in getting fluent elicitations without any translation from English using this technique, including terms for things like modern lifestyles.”⁹²

Rosborough, paraphrasing Battiste and Youngblood Henderson,⁹³ makes the important point that using English-language resources as models privileges not only English language structures, but also a Eurocentric worldview:

[T]he belief that Indigenous languages can be translated into European languages without loss means that Indigenous languages are translated in ways that assimilate Eurocentric worldviews. In Canada, this practice privileges English and French languages and worldviews over Indigenous languages and worldviews. Battiste and Youngblood Henderson asserted that the belief in translatability “devalues the uniqueness of Indigenous languages and worldviews...”

The Sauk Language Department experimented with *loan translations*, or *calques*, but concluded that this was not a desirable way to create new words:

While perhaps a step above borrowing, this strategy still shows heavy influence from a more dominant language. Those involved in the process of creating new words in Sauk have expressed an explicit aversion to calques, and thus the language contains only a select few examples.

kêmiyâni-pîthehkâhi
rain -coat
'raincoat'

pathethota nemôha
hot dog
'hot dog'

Calques may initially seem like an ideal way to create new words, and this was one of the first strategies to be experimented with by the language department staff. However, the language workers have gradually come to the realization that this strategy results in forms that are merely borrowed concepts from English and are not truly representative of Sauk language structure or traditional thought processes. Although entirely composed of Sauk morphemes, these constructions are still very much dominated by an English mentality. Those involved in Sauk lexical development have

discovered that there are better, more “Sauk” ways of expressing new concepts and ideas.⁹⁴

Focus on the context of word structure use within stories

Rosborough highlighted two words with the same suffix, meaning ‘become’, from the Kwak’wala story of T̓ʷis̓alagi’lakw or Mink.

danam-x̣sida ‘to become rope’
gananam-x̣sida ‘to become a child’⁹⁵

Language teachers can create opportunities for students to listen to or read traditional stories, observe repeated morphemes, and consider how these word-parts are used in the context of the story, and how they might be used in other contexts.

Axelrod and Gómez de García observed patterns of repetition of morpheme clusters and verb forms in stories in Apachean Dene languages: Verbs with different prefixes, and repeated strings of prefixes with different verbs. These patterns represent storytelling strategies that are available in polysynthetic languages, but not in English or other more isolating languages. Apachean storytelling is an Indigenous way of providing the language input needed for learners to discover morphemes and acquire word building skills, “supporting the learning process of younger members of the speech community.” Repetition within the context of a story can enhance learners’ ability to differentiate the sounds and morphemes of the speech stream. Axelrod and Gómez de García stress the need to incorporate repetition into the dialogue models of second-language curricula for polysynthetic languages.⁹⁶

Ellen Cushman, writing on the use of digital stories in revitalizing Cherokee^M, also discusses the value of story context in teaching a polysynthetic language:

Digital stories ... reinforce and illustrate precisely the descriptive contextualization of action that verb phrases do in polysynthetic languages for learners. Because digital stories and archives bring the spoken, visual, and written together at once, they are able to represent to some degree the deeply contextualized nature of the meaningful ways in which verb phrases in polysynthetic languages work.⁹⁷

^M Cherokee is an Iroquoian language currently spoken in North Carolina and Oklahoma (Mithun 1999, 419). The Cherokee Nation of northeastern Oklahoma is developing a full-time Cherokee immersion program, which began as a preschool program, and is currently expanding by one grade each year (Peter, Sly & Hirata-Edds, 2011).

Summary

The above sections outline some possible ways to bring greater awareness of the polysynthetic features of BC Indigenous languages into instructional activities.

More broadly speaking, teaching a polysynthetic language to students whose first language is more isolating requires a detailed understanding of the word structures and sentence structures of both languages, and their similarities and differences. For example, Rosborough describes her experience learning Kwak'wala: "Learning the rules for attaching suffixes to root words seemed daunting at first because it did not match my English pattern of thought."⁹⁸

Lizette Peter, Gloria Sly, and Tracy Hirata-Edds give another clear example in their paper documenting the Cherokee Nation immersion program's work on assessment:

'[I]dentifying family members' seems to be a straightforward and reasonable expectation for preschool children in an English medium context, but this is far from the case in Cherokee, where kinship terminology requires grammatical forms that are quite complex for beginning students. The same can be said for other forms and functions, such as pluralizing nouns, naming body parts, and requesting objects. The latter, for example, is a function whose form is complicated by its dependence on an understanding of Cherokee's rich noun classification system.

More detailed documentation of two languages' structural differences and similarities is provided in Dr. Margaret Anderson's *Ts'msyen Sm'algyax Grammar Resources*:

Learning Sm'algyax is a big challenge, partly because Sm'algyax is very different from English. Here are some of the most notable differences:

- the sounds and sound patterns are different
 - Sm'algyax has many more distinctive sounds than English;
 - some sounds are pronounced way in the back of the mouth;
 - there are some "hard" ejective consonant sounds;
 - and there is a different pattern of long and short vowels;
- the categories of word parts and words is different, and these are combined and used in different ways
 - the order of words in sentences is almost completely the reverse of the word order of English sentences (English: Subject-Verb-Object; Sm'algyax: Verb-Subject-Object);
 - the 'time words' are organized quite differently than the English past/present/future "time-line" tense system;
 - the parts of a sentence are "glued together" by connectives, which are endings on words (waaba 'yuuta gwii – that man's house; nabiip Dzoon –

John's uncle; amap'asat Tammy – Tammy is pretty...). These signal what type of word follows;

- Sm'algyax sentences show the relationship between who carries out an action (the subject) and who receives the action (the object) through a variety of pronouns and connectives;
- the "templates" for sentences can vary depending on
 - whether the verb of the sentence is intransitive (The boy is walking) or transitive (The boy hit the dog);
 - whether the subject and object of the sentence are common nouns (the man, a boy), proper nouns (John, Mary) or pronouns (I, we, you, he, she, they);
 - which time words are used, so that the choice of which connective or which series of pronouns is used in a sentence depends on whether the action is going on right now, is about to start, or is already completed.

Another fact that makes learning Sm'algyax challenging is that the markers of grammatical relations in Sm'algyax include a number of pairs or sets of small words that sound the same but have different functions and meanings, such as these:

- **-m-** is a connective used to show that two words are combined to form a compound word (as in *aadmhoon* – fishing net); while **-m** is a suffix used as a pronoun meaning 'we' or 'our' (*Yagwa yagabaa-m* – We're walking up; or *na waab-m* – our house); and another **-m** is an ergative subject pronoun meaning 'you' (*Yagwa-m gyiiga anaay* – You're buying bread.)
- **na-** is a prefix added to nouns to indicate that the thing that follows belongs to somebody (*na gwida'ats'u* – my jacket); while **nah** is a time word that indicates that an action is completed (*nah yaawxga haas* – the dog ate); while **'na=** is a prenominal proclitic meaning 'in the direction of' (*'na doosda* – over there); and **naa** is a relative pronoun meaning who (most of these sound similar – the spelling differences help readers figure out the meaning of phrases);
- **a** is a preposition that means 'to' or 'at' (as in *a ts'm xbiis* – in the box); while **-a** is a connective that signals that the following word is a common noun (*baas-a 'yuuta* – the man is afraid); and **-a** is a derivational suffix that changes the word class of the stem it attaches to from a verb to a noun (*k'ots* = 'cut' / *gank'ots-a* = sewing pattern)

Despite the complexities of its structures, it is very important for learners that Sm'algyax has all these layers of structure, because that means that there are patterns that can be mastered, one after another, to build strength and competence in speakers with emerging fluency. Given the complexity of the patterns, it is extremely valuable to be able to draw on discussions of the structures to organize learning.⁹⁹

In summary, teaching materials for BC Indigenous languages need to be based in an understanding of the structural differences between the Indigenous language and English.^N

2.3.2.2 Indigenous ways of teaching and learning

Word structures and cultural learning

An understanding of word structures in Indigenous languages can support and enhance cultural learning as well as language learning. As M.A.K. Halliday describes it, “culture is anchored in the grammar we use, the vocabulary we choose, and the metaphors we live by”.¹⁰⁰

Rosborough writes:

- [O]ur language work must consider both process and outcomes. This includes learning and teaching in the context of relationships, in intergenerational and real-life settings, and through experience, as well as creating opportunities to learn about literal and symbolic meanings of Kwak’wala. If we appreciate the metaphoric quality of Kwak’wala, we can learn a great deal about our ways through our language. Words such as *at̓i*, *angwax̓t̓as*, and *na̓namwiyut* are examples of the power of understanding literal meanings of Kwak’wala words ... Not all learners will be interested in pursuing skills such as morpheme analysis, but building some appreciation for the beauty of Kwak’wala into our work can help to engage learners and, just as important, contribute to understandings of what it means to be Kwakw̓ak̓wakw.
- [L]earning about the literal and symbolic meanings and constructs of Kwak’wala teaches us the Kwakw̓ak̓wakw worldview. Kwak’wala words also function as symbols of teachings and thus operate to reinforce Kwakw̓ak̓wakw expectations for behaviour and approaches to life.¹⁰¹

Sequence

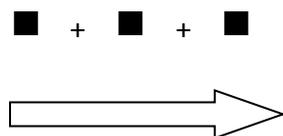
The circular structure of many Indigenous oral stories¹⁰² reflects the importance of *recursion* in Indigenous ways of teaching and learning.^O Rosborough illustrates this in describing her grandfather’s teachings about the structures of Kwak’wala:

^N An interesting area for future research is the vestiges of Indigenous languages’ grammar and pronunciation which remain in the “Indigenous Englishes” spoken by BC First Nations people with different ancestral languages. For example, Hul’q’umi’num’ people speaking English (whether or not they also speak Hul’q’umi’num’) might say “Would you like a pie?” or “I bought a new shoe.” - where a British or Euro-Canadian speaker of English would say “... a piece of pie” or “... a new pair of shoes”. These differences reflect the different ways nouns are counted in Hul’q’umi’num’ and English. Further research is needed on how to help learners use this kind of unconscious knowledge to their advantage as they learn their ancestral Indigenous languages.

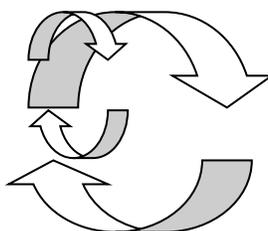
Sometimes I did not fully understand what (or even know why) my grandfather was teaching me, and then much later in my pursuit of learning Kwak’wala, his teachings would come back to my mind and become clear.¹⁰³

Recursive sequence is an important factor in designing a language program. Research on language acquisition has found that “[l]anguage learning is not additively sequential but is recursive, and paced differently at various stages of acquisition.”¹⁰⁴ This means that when someone learns a language, they don’t just learn a sequence of vocabulary items and grammar rules in a linear way. Instead, as they learn new vocabulary and structures, they return to and build on what they already know.

Sequential or Linear:



Recursive:



Peter, Sly, and Hirata-Edds describe a 2008 review of the Cherokee Nation immersion program’s grade 1 curriculum and classroom instruction, which found that direct repetition and recycling of material across grades had little learning value. The researchers concluded that the instructional approach must provide opportunities for children to build on skills they developed the previous year. Teachers must build on, but not replicate, previously learned material.¹⁰⁵

Teachers might model a particular language structure early on, but only present it to students explicitly when they have reached an appropriate level of language learning to understand and apply the pattern. For example, students of French as a second language memorize the phrase je m’appelle ‘my name is’ at the primary level. At the junior high level, they are introduced to the pattern of *reflexive* verbs, and discover that je m’appelle literally translates as ‘I call myself’. Then can they begin to apply this pattern with other verbs.

je m’appelle	je me lave
je m’ appelle	je me lave
I myself call	I myself wash
‘I call myself’	‘I wash myself’

^o Language researcher Margaret Noori describes circular structure or perspective **within** Anishinaabemowin verb phrases: “We begin with a root verb at the center of a sentence, or an event at the center of a story. The perspective is always one of circular observation. ...” (Cited in Cushman 2013, 124.)

Presenting a word-building or sentence-building pattern to a class does not necessarily mean formally spelling it out on the chalkboard. Further research is needed on how polysynthetic language structures can be introduced indirectly, through immersion methodologies. Although the structures of BC Indigenous languages are very different from those of European and Asian languages, Dr. Peter Jacobs¹⁰⁶ emphasizes that there is a finite set of linguistic concepts to teach for each language. The challenge is to keep circulating these concepts, returning to them and building on them each year. The matter of which grammatical features should be introduced at which age/grade levels must be addressed differently for different languages or language families.

Dr. Marianne Ignace and the Sm'alg̱ax Curriculum Committee developed detailed Grammatical Objectives charts outlining the grade levels at which the various grammatical features of Sm'alg̱ax should be modelled and presented, and when students should be expected to work on and master them. These charts appear as part of Appendix G of the *Sm'alg̱ax (Algyaqm Ts'msyen) 5 to 12 Integrated Resource Package 2000*.¹⁰⁷ This appendix also includes similar charts for communicative objectives, pronunciation and literacy. The Grammatical Objectives section includes charts on:

- Questions and Answers
- Determiners, Possessives, and Verbs
- Sentence Building and Connectives, and
- Morphology: Word Formation

The latter chart is reproduced below, along with the key to the letter codes used.

The key to the letter codes in the tables below is as follows:

T =	teacher	Teacher uses the concept but does not explicitly present it to students and does not enforce its use.
P =	present	Teacher presents the concept to the class and all students are exposed to it.
W =	work on	All students practise the concept. Some students will understand it and apply it independently, while others will need more time to understand and independently apply the concept.
K =	know	Students understand the concept, but not all students can apply it independently.
M =	master	Students can correctly apply the concept in most situations, including in new contexts and situations.

<i>Morphology: Word Formation</i>	5	6	7	8	9	10	11	12
Understand the concept of word roots	T	P	W	K	K	M	M	M
Understand the concept of singular and plural verbs	T	W	W	W	K	K	M	M
Correctly use singular and plural forms on a range of verbs		P	W	W	W	K	K	M
Understand and correctly use a range of Lexical Suffixes on roots	T	T	P	W	W	K	K	M
Understand and correctly use the ten Grammatical Suffixes	T	T	P	W	W	K	K	M
Understand and use Locative Proclitics	T	T	P	P	W	W	K	M
Understand and use Aspect Proclitics	T	T	P	P	W	W	K	M
Understand and use Modal Proclitics	T	T	T	P	W	W	K	M
Understand and use Case Proclitics	T	T	T	P	W	W	K	M
understand the principle of and types of reduplication and plural formation in nouns and other words	T	T	P	W	W	W	K	K
Use the principle of and types of reduplication and plural reduplication in nouns and other words	T	T	T	P	P	W	W	K
Understand and use allophonic variations of suffixes and proclitics	T	T	P	W	W	K	K	M

These charts are an excellent example of building on students’ prior knowledge and introducing increasing complex concepts recursively: New word-building concepts are initially modelled by the teacher, then presented to the students. Teachers then provide opportunities for the students to practice with the patterns – often over a period of years – before they are expected to fully master them.

The approach outlined in the Sm’algyax Grammmatical Objectives charts could likely be applied to other Tsimshianic languages (Nisga’a, Gitxsenimx ~ Gitxsanimax and Ski:xs) with relatively little modification. The general idea could be applied to other BC Indigenous languages, but the specific features of each language or language family would have to be taken into account.

A possible challenge with the Sm’algyax Grammmatical Objectives charts is that they use a great deal of complex linguistic terminology^P, which might not be clear to all teachers of the

^P **Determiner:** A word which specifies a noun phrase, such as a, the, this, or that in English.

Proclitic: A *clitic* is a morpheme which has the form of an affix, but functions more like an independent word. A clitic is less closely connected to the word it is modifying than an affix is. The English possessive - ‘s is technically a clitic, because it can be separated from the main word it is modifying by other words. Compare the king’s horse and the king of England’s horse. In the second example, the - ‘s still indicates that the horse belongs to the king, but the phrase is interrupted by of England, which further describes the king. A *proclitic* must be placed before the word it is modifying, although it can also be separated by other words.

(Clitic (2014). Retrieved from: <http://en.wikipedia.org/wiki/Clitic>)

Locative: Describing the location of an item or action. Words, clitics, and affixes can all have *locative* functions in different languages.

language. Other language communities adopting a similar model might prefer to use more accessible terminology, and provide examples of each grammatical feature or pattern. Language teachers would also benefit from professional development around how to best use the charts.

2.3.2.3 Pedagogy

This section outlines the need for a balanced approach to teaching and learning endangered languages, the role of language acquisition research in the development of instructional tasks and assessment models, and the role of form-focussed instruction.

The whole process of developing instructional strategies and assessment tools for endangered languages can be viewed as circular or recursive. Initial language assessments inform acquisition research, teaching practice improvements, and the refinement of curriculum goals or outcomes. These factors in turn lead to improvements in assessment. All together, they contribute to improved student language acquisition and performance. The Cherokee language researchers summarize: “[A]s teachers’ instructional abilities improve and as more appropriate and effective teaching and learning aids are created, each cohort of students has attained a higher level of proficiency.”¹⁰⁸

The need for a balanced approach in a language revitalization learning environment

With the understanding that the vast majority of BC Indigenous languages are critically endangered and currently being revitalized, it is important to acknowledge that teaching

Aspect: A verb’s *aspect* expresses how the action, event, or state described relates to the flow of time. For example, in French, the imparfait is used for ongoing actions or states described in the past: J’étais au marché. ‘I was at the market (for a period of time).’ The passé composé is used for completed actions or events in the past: J’ai acheté des pommes. ‘I bought some apples.’ Many BC Indigenous languages have elaborate aspect systems, distinguishing many different time frames. (Grammatical aspect (2014). Retrieved from: http://en.wikipedia.org/wiki/Grammatical_aspect) (Imperfect – French Past Tense (2014). Retrieved from: <http://french.about.com/od/grammar/a/imperfect.htm>)

Modal: Describing the *mood* of a sentence. Please see footnote F for examples of grammatical mood. Words, clitics, and affixes can all have *modal* functions in different languages.

Case: *Case* markers, which can be affixes or clitics, indicate the grammatical role that the noun they are modifying plays in a sentence. Please see section 2.1.4.2, on p. 18 above, for examples of different *cases* used to indicate the subject and object of a sentence in Latin.

Reduplication: Copying or repeating part of a word. *Reduplication* is often used to indicate plurality in BC First Nations languages. Compare tselush ‘hand’ and tsultselush ‘hands’ in Hul’q’umi’num’. In the example in section 2.1.3.6 on p. 15 above, reduplication gives a *progressive aspect* to a verb root.

Allophonic variations: Different forms of a sound, affix, or clitic, which depend on the sounds in the surrounding morphemes. For example, the Hul’q’umi’num’ possessive suffix -ṣ is pronounced -tḥ when it is attached to a word ending in s, sh, or ts. (Hukari & Peter 1995).

methods which are successful for widely-spoken languages of the world may not be appropriate in the context of language recovery and revitalization.^Q

Rosborough concludes that revitalizing an endangered language requires a multifaceted approach. She also emphasizes that “[s]trategies to recover our language must take into account the impacts of colonization,”¹⁰⁹ and recognize the roles of decolonization and Indigenization in language revitalization.

Language teachers and language revitalization activists need to be working on all fronts, not looking for a single perfect teaching method. Many communities are working towards immersion programs, but other approaches must also be considered, whether as temporary or long-term solutions. The ultimate goal is to return to natural language learning contexts in immersion programs, homes, and communities – but language programs will not achieve this long-term goal unless they make use of all the teaching tools that are available in the shorter term. Furthermore, variety is necessary to reach students with different learning styles.

In a full-day immersion program, students will naturally acquire at least some of the word structures and sentence structures of their language. In a part-time language program, less natural language acquisition will occur. Thus, the teacher must be conscious of the word structures and sentence structures of the language, and work to convey them to the students - through experiential activities or more formal teaching, as appropriate.

It is also important to acknowledge that a fluent speaker may not be consciously aware of the word-building and sentence-building rules at work in his/her natural use of the language. Some fluent speakers, like Rosborough’s grandfather, are very conscious of language structures; others are not. (Most fluent English speakers do not generally stop to think about the word parts in poly-gon or col-labor-ate or re-ceive.) This is an area in which learner-teachers can provide important continuity, working in partnership with fluent speakers (and linguists, where appropriate) to gain understanding of word-building patterns and determine how to best present them to students.

A communicative-experiential approach allows for holistic incorporation of cultural content, which is an essential part of Indigenous curriculum. Axelrod and Gómez de García conclude that “grammar and style should be taught indirectly and contextualized in whole language

^Q Australia is moving towards language policies for three “pathways”: “L1” for learners who speak their Aboriginal languages as first languages; “LR” for learners of languages which are currently being revitalized, and “L2” for second language learners of Aboriginal languages which others speak as first languages. (Australian Curriculum, Assessment and Reporting Authority (2012). *Framework for Australian Languages: Pathways to learning Aboriginal languages and Torres Strait Islander languages*. Draft discussion paper.)

This division is not relevant in BC, as all BC Indigenous languages are being taught in language revitalization contexts. A more relevant distinction to make is between immersion programs and part-time second language programs.

activities”, with an emphasis on natural discourse forms.¹¹⁰ However, it is more challenging to introduce word-building and sentence-building patterns in experiential ways. Further research on this topic is needed.

The Introduction to the Sm’algyax IRP¹¹¹ provides a rationale for a balanced, multi-faceted approach to teaching an endangered language, incorporating grammatical concepts alongside pronunciation^R and vocabulary:

However, in comparison with widely spoken languages which have been incorporated into British Columbia second language curricula (e.g., French, German, Punjabi, Chinese), Sm’algyax, as we noted earlier, is a critically endangered language spoken by only a few hundred people at present, most of whom are elderly. Those who will learn Sm’algyax with the help of schools will hopefully become the next generation of speakers of the language. In order to preserve the richness and integrity of our language to the best extent possible, Ts’msyeen elders feel that it is vital for students of Sm’algyax to learn not only to make themselves understood, but to learn the language in its full complexity as best as possible. By necessity, this will include students’ knowledge and eventual mastery of all Sm’algyax sounds, of grammatical concepts, and the meaning and cultural context of vocabulary.

The ongoing curriculum development work of the Sm’algyax Language Authority and School District 52 is striving to reconcile the goal of grammatical and phonological accuracy with the communicative approach to language teaching. Thus, the curriculum for Sm’algyax 5 to 12 laid out in this Integrated Resource Package and the accompanying Sm’algyax Year 1 to Year 8 curricula developed by School District 52, adopt a strategy whereby grammatical and phonological competence are taught through approaches which focus on interaction and communication, as well as culturally appropriate content, and the use of language skills in authentic contemporary settings. This includes providing incentives and rewards for the use of Sm’algyax with elders and speakers.

The Sm’algyax Language Authority and School District 52 have developed detailed curricula for grades 5 to 12 (Year 1 to Year 8) which seek to teach accurate pronunciation, word-building and sentence-building in experiential, culturally focussed ways.

Rosborough’s concluding reflections also emphasize the need for balanced, varied approaches to language instruction:

- My research has demonstrated that a blend of approaches is advantageous and effective. Drawing from various methods has been an essential factor in moving me towards my goal of being a Kwak’wala speaker.

^R In the cited text, *phonological* refers to pronunciation and sound patterns in a language.

- According to K̓angextola methodology, one can take an Indigenous and Kwakw̓ak̓'wakw approach to language work while drawing on various tools. Again, this points to the effectiveness of a blend of approaches. For example, using linguistic analysis to learn and understand literal meanings and constructs of Kwak'wala helps me to appreciate the beauty of our language. What I describe as beauty might also be characterized as the spirit of Kwak'wala.
- Although drawing from many methods can be an effective approach to language revitalization, too often we reject methods because, when we have used them exclusively, they have not resulted in much success. Tools from the field of linguistics can support our work; however, some are hesitant to use them. It is not uncommon to hear, for example, “Our culture is built on oral traditions, and we did not use reading and writing to learn our language in the past” to dismiss the use of linguistic tools and support the exclusive use of immersion or other approaches.
- [R]ather than seeking the one perfect approach, there is an advantage to blending approaches to meet the varied needs of learners and teachers and the intended outcomes. Especially important is that strategies are clearly focussed on the goals of language outcomes.¹¹²

The role of language acquisition research in informing instruction and assessment

Further research is needed on how polysynthetic languages are acquired by children – ideally, those acquiring a polysynthetic language as their first language. This research can inform the development of instructional approaches and assessment tools for polysynthetic languages being taught as second languages, in both immersion and non-immersion settings. The Cherokee Nation’s research team found that “witnessing the acquisition of Cherokee by children over time has allowed for greater understanding of what children are able to achieve with each year of immersion.”¹¹³

Dr. Barry Montour, Director of Education for the Ahkwesahsne Mohawk Board of Education, makes a strong case for the need for more research on acquisition of polysynthetic languages:

In order for this work to be successful and to have the greatest impact on the revitalization of indigenous languages in First Nation communities, the critical research gap in second language acquisition of polysynthetic languages must be closed. It is imperative that linguists with expertise in both polysynthesis and second language learning theories work in collaboration with First Nation communities to design a research framework and select appropriate methods to investigate how second language learners acquire a polysynthetic language. This will lead to new theories on second language acquisition, which will then allow practitioners to develop effective pedagogies for the transmission and revitalization of Indigenous languages. Without this vital research, the current efforts to ensure the transmission of North American

Indigenous languages, particularly those that are endangered, will continue to struggle.¹¹⁴

Kelly and her colleagues summarize the relatively little research conducted to date on children's acquisition of polysynthetic languages in their 2014 paper. A key point noted is that children acquire morphemes in different orders in different languages. For example, Mithun¹¹⁵ studied the natural acquisition of Kanien'kéha (Mohawk) in five children aged 1-4. She observed that the first affixes the children acquired were the pronoun prefixes. This would suggest that these morphemes should be considered first in designing instructional and assessment materials for Kanien'kéha.

Kelly and her team also found that the more polysynthetic words children are exposed to, the more easily they will acquire and be able to reproduce polysynthetic structures.¹¹⁶

[I]t is not necessarily the case that greater morphological complexity leads to a more challenging task for the child. In fact, it appears to be the case that the more morphology there is in a language, and therefore the more morphology the child receives in the input, the more rapidly the child acquires the morphology. This suggests that frequency may override morphological complexity in the acquisition process.¹¹⁷

This observation should also be applied in developing programs for polysynthetic languages being taught as second languages: Exposing students to complex words will enhance, not hinder their language learning.¹¹⁸

The following sections show how language acquisition research can inform the development of instructional methods and assessment tools for polysynthetic languages.

Instruction

Many Indigenous language communities have identified needs for teacher professional development around instructional practices. However, different communities have come to different conclusions on the relative values of communicative-experiential instruction and more direct instruction.

Whatever the chosen balance is between these instructional approaches, a teacher of a polysynthetic language must be familiar with both the *functions* and the *forms* of the language – that is, the use of language to complete social, academic, and cultural tasks, and also the word structures and sentence structures required for particular communicative functions. Teachers of polysynthetic languages need to bring more *form-focussed* instruction into their classrooms. They should also work to provide more opportunities for students to produce oral and written language, not just show their understanding through actions. Teachers of Indigenous languages must also provide opportunities for students to spend time with Elders and fluent speakers in natural language-learning contexts wherever possible. If access to fluent

speakers is limited, audio and video recordings of natural language can also provide authentic language input.

Popular instructional strategies in BC Indigenous language communities include Total Physical Response (TPR),¹¹⁹ Mentor-Apprentice,¹²⁰ and the Accelerated Second Language Learning model developed by Dr. Stephen Greymorning of the University of Montana. More research is needed on how to best bring form-focussed instruction and opportunities for student language production into these and other methods.

Experiential learning

The Cherokee Nation's language assessment research team's¹²¹ analysis of students' test results showed not only the strengths and weaknesses in the students' language production and comprehension, but also areas where teachers needed instructional support. The teachers learned that rote drill technique for teaching vocabulary and basic expressions was not resulting in students' being able to use those expressions in appropriate, meaningful, connected contexts. They also found that an over-emphasis on Total Physical Response did not give enough opportunities for children to engage in two-way communication. The teachers identified a need for professional development in communicative-experiential language instruction, as well as for more learning resources to enhance communication in the classroom. They also identified a need to develop classroom tasks that elicit student language production⁵. As the Cherokee teachers have honed their skills and had more resources to work with, students have come closer to meeting the expected outcomes. Preschoolers have had higher levels of both aural comprehension and oral speaking abilities in each year of the immersion program.

The Seliš language team at the Nk'wusm Language Institute in Arlee, Montana,¹²² also identified needs for changes to instructional practices when they analyzed initial language assessment results. An initial pilot of an assessment tool for Seliš showed that kindergarten to grade six students' listening comprehension consistently exceeded their ability to produce oral language. The team concluded that teachers needed more support to develop students' oral proficiency, and selected a communicative-experiential approach: **Task-Based Language Teaching** (TBLT), an instructional practice that focusses "on tasks that have value in the world, rather than on language for language's sake".¹²³ In short, TBLT activities require students to communicate

⁵ Anderson also emphasizes the importance of student language production in her *Ts'msyen Sm'algyax Grammar Resources*:

Learning a language requires active involvement – just being surrounded by speakers is not enough. Several generations of "passive speakers" of Sm'algyax have had that experience. They can often understand conversations very well, but because they were never encouraged to become active participants in the conversation, they never moved beyond comprehension to production. Such passive speakers often have a big head start in learning the language though. (Anderson, M. (n.d.). *Ts'msyen Sm'algyax Grammar Resources*, Introduction, 3.)

orally in pairs or small groups to fill in information gaps to complete a task such as a spot-the-difference activity, or a crossword in which one student has some of the clues, and his/her partner has the rest of the clues. TBLT can provide opportunities for students to use language at multiple levels – pronunciation, word structure, and sentence structure – meeting multiple needs, as opposed to focussed grammatical tasks for which students might not be developmentally ready.

The Seliš language team is also experimenting with TBLT in adult curriculum development. TBLT activities they have developed for adults include reading, writing, listening and speaking tasks, based around audio and video recordings of fluent Seliš Elders. They are working on developing two to three minute listening exercises from archival recordings of narratives. Adult learners listen, take notes, and retell to a partner what they heard, then summarize what they heard in a dialogue journal, which is collected and responded to by the instructor. The team is now considering how to adapt these activities for school-aged learners.

An important factor in this approach is the incorporation of authentic language input from fluent speakers who acquired the language naturally in childhood:

These L1 voices are urgently needed among teachers, parents ... community activists, and stakeholders in their own language development. Furthermore, such documentation might be utilized in the school curriculum by furnishing a long-standing repertoire of authentic language resources that students can access as they build their own skills and personal identities in the language.¹²⁴

The role of direct instruction

Although direct instruction would not be part of a natural language acquisition environment, Rosborough's experiences and research indicate that direct instruction has a place in teaching endangered languages, particularly to adults and senior students:

- Methods such as the M-A approach,^T the application of linguistic skills and tools, direct grammar lessons, and even the practicing of rehearsed phrases complement each other.¹²⁵
- Explicit instruction on lexical suffixes and other aspects of Kwak'wala structure has been helpful to me as an adult who is learning Kwak'wala as a second language. These concepts that stem from linguistic study are the keys that help me to rely less on memorizing words, phrases, and dialogues and begin to generate and understand Kwak'wala speech more effectively.¹²⁶

^T M-A refers to the *Master-Apprentice* or *Mentor-Apprentice* approach.

Jacobs also acknowledges that adult learners want and need explicit instruction first: Adults and teenagers should be eased into experiential learning situations, and the teacher should ensure that the students feel comfortable before beginning immersion activities.¹²⁷ This points to a need for more direct instruction at the beginning of Provincial Introductory 11 courses for Indigenous languages. However, it is essential to explicitly acknowledge that direct instruction is not true to traditional Indigenous ways of teaching by example and learning quietly from Elders.¹²⁸

Increasing form-focussed instruction

Another example from the Cherokee Nation's research team¹²⁹ provides evidence of the role of form-focussed instruction in improving students' proficiency with polysynthetic language structures. An analysis of language samples collected with the Cherokee Kindergarten Immersion Language Assessment (C-KILA) focussed on grade 1 immersion students' use of third-person singular and plural present tense verbs in Cherokee, and provided important data on immersion students' ability to use complex morphological markers accurately. Students being tested with C-KILA are expected to:

- demonstrate comprehension of noun vocabulary, adjectives, prepositions, classificatory nouns, and singular and plural verb forms
- produce sentences describing past, present, and future actions, and
- retell a short story

The 2007 assessment showed that most students could not use past or future tenses, or even produce all present tense forms accurately. A detailed analysis of this assessment data by fluent speakers and linguists revealed specific knowledge of Cherokee language structures that the children were lacking, and suggested that immersion was not sufficient for them to achieve language proficiency with grammatical accuracy. Research in other immersion settings has had similar findings. Peter, Sly, and Hirata-Edds identified a need for teachers to balance natural input with planned opportunities for practice using specific language functions **and** their forms.

This led to a professional development focus for teachers and curriculum planners on:

- discovering the linguistic rules for Cherokee grammar, especially verbs
- planning lessons that provide opportunities for children to practice a range of verb forms and other grammatical features through meaningful, functional activities, and
- preparing learning and teaching materials that expose children to social and academic language functions, and encourage them to use the appropriate forms, in fun and engaging ways.

The 2008 C-KILA results showed that an increase in form-focussed instruction had led to greater proficiency and accuracy in children's production of Cherokee verb forms.

Further research is needed on incorporating form-focussed instruction into experiential learning activities.

The role of literacy

Rosborough feels that literacy has a place in teaching and learning Indigenous languages, particularly for learners' self-study.¹³⁰ The Introduction to the Sm'algyax IRP¹³¹ proposes oral competence as a primary goal of the Sm'algyax language program, and literacy as a secondary goal:

APPROACH TO SM'ALGYAX TEACHING

In accordance with the urgent need to preserve Sm'algyax and to create a new young adult generation of speakers and users of the language, oral competence (speaking and understanding) is the primary goal of this Sm'algyax program. The precedence of oral competence is also supported by the traditional role of oral competence in the Sm'algyax language in Ts'msyen culture, where all knowledge was transmitted orally, and was committed to memory to be passed on to others and to the next generation. To this day, most of the speakers of Sm'algyax do not write it. Sm'algyax has only existed in written form for about three decades, and thus, at present, a very limited amount of written materials exist in the language that are available as curricular resources. However, Sm'algyax teachers and elders recognize that in the contemporary world, the written language has many useful functions, for example:

- It allows learners and speakers to communicate in writing with one another
- Reading and writing can function as mnemonic devices, i.e., they can help the learner to memorize words and language structures.
- Reading and writing Sm'algyax helps the student in acquiring information.
- It can have a function in the production and use of multimedia materials.
- Learning the practical alphabet of Sm'algyax is also a useful way to learn the difficult and complex sound system of our language.

Therefore, literacy (reading and writing) is a secondary goal of our Sm'algyax program. Learning to read and write Sm'algyax will be phased in slowly with Grade 5 and will be given greater emphasis after Grade 7, when students' literacy skills will also be assessed and evaluated.

Literacy can also assist in the understanding of word structures and word frames for polysynthetic languages, as illustrated in section 2.3.2.1 (pp. 28-37) above. Literacy is also helpful in certain form-focussed tasks, although it is not necessary.

The role of technology

There is great potential for future research and development of applications and games to support form-focussed instruction of polysynthetic language structures. For instance, online “scrambled sentence” games designed to teach sentence structures could be adapted for word-building activities in agglutinative languages. For an example of a “scrambled sentence” activity from the *Tatul’ut tthu Hul’q’umi’num’* online lessons, please see:

http://web.uvic.ca/hrd/hulq/grammar/lesson08/gr08_09.htm

However, Rosborough emphasizes the need to maintain a focus on language learning and not be distracted by the latest technologies:

[T]he focus on language learning and speaking is sometimes distracted by other worthy goals and intentions. Personally, I can be distracted by activities such as linguistic analysis and the use of technology and allow hours to slip away without any real focus on my intent to speak my language.¹³²

Assessment

All language programs need “valid and reliable measures to assess students’ language proficiency development over time.”¹³³ For polysynthetic languages, the assessment tools must take into account students’ understanding of, and facility with, word-internal structures.

While awareness of the role of polysynthesis in Indigenous language instruction and assessment is increasing, relatively little research has been conducted on how to assess students’ fluency with polysynthetic features. Montour summarized the situation in 2012 as follows:

[T]he transmission and acquisition of polysynthetic languages to second language learners has not been studied by linguists. This has left teachers of Indigenous languages to use trial and error methods when developing best practices for their classrooms. Not only are teachers of Indigenous languages left to develop their own teaching materials and resources, but they must also create their own methods of assessing student achievement and fluency.¹³⁴

Peter, Sly and Hirata-Edds¹³⁵ further describe the challenges of developing assessment tools for Indigenous languages:

- The newness of the research means there is little already in place to base assessments on, and little is known about how long it takes to master linguistic aspects of the language, especially polysynthetic features. This leads to difficulty in establishing concrete proficiency goals.

- The grassroots nature of many language revitalization programs requires sensitivity to issues faced by a group that has never before attempted such a major language project, as well as response to local knowledge, experience, and expertise in the community.
- Lack of instructional materials has impacts on instruction and assessment: “[I]f ... instruction is limited by the availability of content resources ..., then assessments that are geared toward an ‘ideal’ proficiency level rather than reflecting classroom realities may lack validity.”¹³⁶
- Developing reliable and valid assessment materials requires a great deal of planning, piloting, analysis and revision, all of which requires considerable human and financial resources.
- When an assessment has been completed, the developers must then consider how to interpret the results, and how to best use them to inform program planning, curriculum development, teachers’ professional development, and the format of the assessment itself.

The following case studies discuss development and implementation of assessment tools for three polysynthetic Indigenous languages: Kanien’kéha (Mohawk), Cherokee, and Montana Salish. Connections are then highlighted between these and existing work on Sm’algyax within the format of BC’s grade 5 to 12 language curriculum template.¹³⁷

Kanien’kéha (Mohawk)¹³⁸

Margaret Peters, Kanien’kéha Curriculum Specialist for the Ahkwesahsne Mohawk Board of Education, has developed the Kanien’kéha Proficiency Assessment to address some of the linguistic issues encountered in a part-time immersion program focussing on oral language. The Kanien’kéha Proficiency Assessment is criterion referenced using rubrics created with reference to the proficiency scale developed by the American Council for the Teaching of Foreign Languages. Students are assessed on an ongoing basis.

The Kanien’kéha Proficiency Assessment addresses four areas of speaking skills:

- Recitation (formal speeches, addresses, and songs)
- Announcements (for school, community, public or ceremonial events)
- Introductions (students introducing themselves to others in formal and informal settings)
- Conversation

All Ahkwesahsne Mohawk Board of Education curricula are thematic, with cross-curricular units organized around the Kanien'kéha Ohen:ton Karihwatékwen (Mohawk Thanksgiving Address). Each unit includes an assessment on five categories of speaking proficiency, including:

- Volume appropriate for the situation
- Clarity of pronunciation, including the appropriate stress put on the morpheme / root of the word or phrase
- Vocabulary appropriate for the context
- Intonation (fluid language, with pauses appropriately used for meaning or effect)
- Complete sentences

Rubrics used for holistic assessment at the end of a reporting period follow four levels of proficiency. Levels 3 (Proficient) and 4 (Advanced) include particular mention of polysynthetic features: using gender, number, prefixes, suffixes, and pronouns.^U

The Kanien'kéha Proficiency Assessment, along with program structure and instructional activities steeped in Kanien'kéha culture, has proven successful on three levels: student achievement (including increased language use in the community), improved instruction, and transferability to other language communities of the Iroquoian language family. Montour highlights “increased use of verbs and expanded phrases as opposed to the learning of nouns”¹³⁹ as an element of improved instruction. This is an example of bringing a greater focus on polysynthetic structure into instruction and assessment.

In the future, this language program could consider an increasing focus on spontaneous use of the language in a wider variety of contexts, as well as their current emphasis on memorizing culturally-relevant speeches, prayers and songs.

Cherokee¹⁴⁰

The Cherokee Nation has made the development and implementation of language assessment tools an integral part of its full-time Cherokee immersion program. (As this program began as a preschool program, most of the information currently available is on language assessment for preschool and primary students.) The Nation's ten-year plan for language revitalization includes the goal of “[d]eveloping and implementing an ongoing monitoring and evaluation protocol to assess all aspects of the immersion classrooms and to make necessary adjustments in a timely manner.” These program assessments serve several purposes, including:

- giving teachers feedback about learners' abilities and progress
- giving feedback to learners and their parents
- informing future planning

^U Please see pp. 25-26 of the *Assembly of First Nations Education, Jurisdiction, and Governance First Nations Lifelong Learning Assessment Report* for the full text of these rubrics.

- improving curriculum, instruction, and the assessment tools themselves
- establishing credibility and accountability for the program
- furthering understanding of second language acquisition for a polysynthetic Indigenous language, and
- evaluating the effectiveness of the immersion program in reversing language shift.

For an endangered language, focussing assessment on the above purposes – as much on assessing how the program can be improved as on the individual learners’ progress – is important. Peter, Sly, and Hirata-Edds emphasize that assessment should not be used for “the punitive purposes that high stakes testing may promote.” Rather, well designed and administered assessment tools can improve language programs and their contributions to language revitalization. Cherokee teachers and curriculum developers have found the process of developing and refining assessment tools worthwhile for helping them understand how, and how well, particular pedagogical approaches and curricula are working.

Peter, Sly, and Hirata-Edds describe the development of a culturally relevant model for assessing the language program as a whole:

[T]he Cherokee concept of *idigoliyahe nidaduhnahui* (‘let us take a look at what we are doing’) was adopted as a culturally appropriate way to step back and observe, or evaluate. Eventually, this process became known in English as ‘envaluing’, in which each aspect of the program is attributed value, whether that element successfully contributes to achieving the goals or not.¹⁴¹

For example, in the pilot year of the immersion program, the preschoolers’ Cherokee language abilities did not measure up to expectations at the end of the year. Nonetheless, the immersion program had far-reaching value in the community, as parents and community members witnessed children speaking Cherokee for the first time in generations, and recognized the value of the immersion program for reversing language shift .

Three assessment tools were developed by a team which included language teachers, curriculum staff, Cherokee Cultural Resource Center staff, and consultants from the University of Kansas. The tools were designed to measure the extent to which the children had achieved “general social and academic language proficiency”, including vocabulary, comprehension of oral questions and commands, and oral or action-based responses.

- The Cherokee Preschool Immersion Language Assessment (C-PILA) is an oral assessment for 3 and 4 year olds. The children are asked to respond to Total Physical Response (TPR) commands by using the props provided to act out what they hear – e.g., *tasuli* ‘wash your hands’, *witlvna* ‘go to sleep’.
- The Cherokee Kindergarten Immersion Language Assessment (C-KILA) is an oral assessment for primary students in kindergarten through grade 4.

- The Cherokee Language Immersion Literacy Assessment (C-LILA) is intended for students in kindergarten to grade 3, and assesses reading and writing in the Cherokee Sequoyan writing system, as well aural recognition of the sounds of Cherokee.

Testing takes place for one full week each year, in late spring. Individual testing directly measures students' aural comprehension, since they cannot observe and imitate their classmates. Teachers work in pairs to administer the oral portions of the tests, one interviewing the student and the other recording the student's responses. The oral portions of the tests are also audio-recorded for later review, for both scoring accuracy and for future research on the cohort's linguistic performance. The literacy assessment is administered to whole classes, with one teacher delivering instructions and providing examples orally, while another teacher monitors students' work. All assessments are scored over two days in the summer, and the final scores are entered into a database for short-term and long-term analysis.

Peter, Sly, and Hirata-Edds noted that development of language assessments requires familiarity with both the functions and the forms of the language. It is also essential for assessment developers to understand how these structures are different from their English counterparts.

The assessment developers' challenge is to create appropriate assessment tasks to elicit evidence of the extent to which students have attained the desired learning outcomes. The Cherokee team has found it helpful to select tasks that closely reflect everyday activities from the students' school day. For example, it is expected that primary students will understand prepositions of placement. Thus, the C-KILA includes a TPR section in which the children are given a toy train and a penny, and instructed to put the penny where they are told: in, under, in front, behind, on, or beside the train.

This connection between learning outcomes, instructional activities, and assessment tasks is paralleled in the BC *Languages 5 to 12 Template Development Package*. Developers of assessment tools for BC languages face similar challenges in designing tasks to measure students' command of polysynthetic features, but the above example shows that it can be done. The C-LILA reading and writing assessments also include items to assess students' knowledge of specific morphemes, particularly singular and plural markers for Cherokee verbs.

However, the Cherokee team has not yet succeeded in developing assessment tasks for all the polysynthetic features of their language. The researchers found that eliciting language to measure students' acquisition of certain features can be a challenge within the constraints of an assessment. For example, they determined that children should be able to use Cherokee morphemes orally to convey past and future tenses by the end of grade 1, but had difficulty creating test items that reflect time. It was not clear to the testers whether the children had not acquired the morphemes necessary, or if they simply didn't understand the test items.

The Cherokee Nation has found that giving language assessment a central role in program planning has guided curriculum development, instructional planning, and resource

development. Feedback for teachers on their students' strengths and limitations has helped them to improve their teaching, and assessment has helped curriculum planners sequence language objectives and prepare materials with a richer language focus. However, Peter, Sly, and Hirata-Edds also note the need for balance in types of assessment: More formal language assessments provide just one piece of the overall picture, and must be combined with other sources, including classroom observations, recorded language, and feedback from parents. Culturally responsive and responsible language assessment requires full participation of a wide range of teachers, curriculum developers, parents, Elders and fluent speakers, and must be respectful of their opinions and values.

Montana Salish¹⁴²

Acquiring a Salish language is a complex task for people who have acquired English as their first language. Recognizing this, and the lack of formal curriculum and assessment materials for Seliš, the Nk'wusm Language Institute began to develop Seliš curriculum and assessments for kindergarten to grade six immersion in 2009. The first step was to create a Seliš-specific rubric for measuring oral fluency. An online training course on *formative assessment* was also setup for instructors; the course provided model assessments and practice for developing assessments that could be used to inform instruction and track student progress. Next, a Student Oral Proficiency Assessment (SOPA) and rating rubric were developed to collect and rate samples of students' Seliš speech.

SOPA is a suite of rating scales and assessments designed to measure oral proficiency and listening comprehension for a variety of languages for kindergarten to grade 8. The Seliš Student Oral Proficiency Assessment (SSOPA) was based on a SOPA originally created for Spanish. It consists of a series of oral proficiency tasks that focus on daily routines and seasonal practices at the Nk'wusm School, including:

- identifying, grouping, and counting animals
- answering questions about family, pets, and activities
- describing a routine following a series of pictures (a school lunch routine for younger students, a traditional seasonal activity for older students), and
- narrating or retelling a culturally appropriate story.

The tasks gradually increase in difficulty until students' proficiency ceilings are determined.

A pilot SSOPA was administered to Nk'wusm students prior to the full development and implementation of the new Seliš curriculum.

Seliš rating rubrics were also developed based on SOPA prototypes, consisting of three main proficiency levels, each subdivided into high, mid, and low levels. Student performance is rated in terms of oral fluency, spoken grammar, spoken vocabulary, and listening comprehension.

A key part of developing the rubric was the developers' efforts to identify Seliš sentence structures and word structures that could benchmark proficiency levels or sublevels of language acquisition. This was daunting, due to the lack of language acquisition research for Seliš. The rubric therefore largely relies on the 2010 Seliš dictionary,¹⁴³ as well as relevant linguistic literature, and discussions with Seliš second language learners and fluent Elders. A draft document ranking features of sentence structure and word structure was created to assist in the process. The draft rubric was reviewed by adult Seliš fluent speakers and learners, and piloted and revised in conjunction with administration of the first SSOPA. The developers also considered the role of transfer of language skills from the learners' first language, English. For example, since commands are also present in English, these were hypothesized as being likely to be acquired more easily in Seliš. Pilot SSOPA results indicate this was the case, but more research is needed on Seliš acquisition sequences.

The Seliš Rating Rubric is used to rate results of the SSOPA. Here is an example of the Junior Novice level of the rubric for oral fluency:

Junior novice sublevels for oral fluency, Salish Rating Rubric, 2011

Junior Novice – low	Junior Novice – mid	Junior Novice – high
Oral fluency		
<ul style="list-style-type: none"> • Produces only isolated words (i.e. single-word responses) and/or greetings and polite expressions such as <i>ōest säēäst, Ūe, ta, une, îoye</i> • Isolated words are produced as memorized expressions without understanding of individual components 	<ul style="list-style-type: none"> • In addition to memorized isolated words, uses phrases of two or more words, and/or memorized phrases or sentences (e.g. <i>ta es misten ân ôe, ha îne u ân sust sewçä</i>) in school content areas or social contexts • Words and expressions are produced as memorized 'chunks' • May attempt to manipulate individual components of words, but is not successful • Long pauses are common 	<ul style="list-style-type: none"> • Uses memorized expressions with reasonable ease • Shows emerging signs of creating with the language to communicate ideas • May manipulate some basic, individual components of words but mostly uses language as memorized 'chunks' • May create some words with 3rd person marking and 3rd person transitivity in the past/present tense • Creates some simple sentences successfully, but cannot sustain sentence-level speech

Examples^v are included to illustrate characteristics of the different sublevels. Note particularly the mention of "components of words," an adjustment necessary in adapting the Spanish rubric for the polysynthetic Seliš.

On the pilot SSOPA, students' ratings for listening comprehension were consistently higher than for oral fluency. Minor changes were thus made to the rubric based on actual student language use at the different grade levels. The rubric will be further refined as students' Seliš

^v The examples shown are not in the correct Seliš phonetic font due to technical difficulties at the publisher.

competence grows and additional evidence of acquisition of Seliš language features is documented through classroom assessments, observation, and testing.

Although the SSOPA and the Seliš Rating Rubric were initially based on assessment tools for Spanish, the developers have paid close attention to Seliš word-building and sentence-building patterns in adapting the tools. This would be a very valuable process for developers of curriculum and assessment tools for BC languages to undertake.

Sm'algyax

The process undertaken by the Seliš language community in developing proficiency assessments and rating rubrics is similar to Ignace's work in developing the Grammatical Objectives for the Sm'algyax IRP, but takes it further by merging it fully with assessment measures. A possible way to efficiently adapt Ignace's Grammatical Objectives using a Performance Standards model is illustrated below¹⁴⁴.

<i>Morphology: Word Formation</i>	5	6	7	8	9	10	11	12
Understand the concept of word roots	1	1	2	3	3	4	4	4
Understand the concept of singular and plural verbs	1	2	2	2	3	3	4	4
Correctly use singular and plural forms on a range of verbs	1	1	2	2	2	3	3	4
Understand and correctly use a range of Lexical Suffixes on roots	1	1	1	2	2	3	3	4
Understand and correctly use the ten Grammatical Suffixes	1	1	1	2	2	3	3	4
Understand and use Locative Proclitics	1	1	1	1	2	2	3	4
Understand and use Aspect Proclitics	1	1	1	1	2	2	3	4
Understand and use Modal Proclitics	1	1	1	1	2	2	3	4
Understand and use Case Proclitics	1	1	1	1	2	2	3	4
Understand the principle of and types of reduplication and plural formation in nouns and other words	1	1	1	2	2	2	3	3
Use the principle of and types of reduplication and plural formation in nouns and other words	1	1	1	1	1	2	2	3
Understand and use allophonic variations of suffixes and proclitics	1	1	1	2	2	3	3	4

- Key:**
- 4** – Exceeds expectations
 - 3** – Meets expectations
 - 2** – Approaching expectations
 - 1** – Not yet meeting expectations

Summary

The assessment models being developed for Kanien'kéha, Cherokee, and Seliš illustrate several important points:

- the need to take into account the word-building and sentence-building features of a polysynthetic language, and the structural similarities and differences between the target language and English, in developing assessment tools,
- the importance of language acquisition research in informing the development of assessments,
- the cultural and linguistic role of storytelling tasks in assessment of Indigenous language proficiency, and
- the need for ongoing refinement of assessment tools in the context of language revitalization.

The Kanien'kéha, Cherokee, and Seliš assessment models also raise some key questions for future research:

- These assessment tools are all for immersion programs. How would they be different for part-time second-language programs?
- These assessment tools are all based to varying degrees on Western or European assessment models. Have they been adapted sufficiently? The Cherokee concept of *envaluing* provides a good example of Indigenizing the assessment process, and the Seliš efforts to adapt the SOPA framework to highlight the polysynthetic features of their language suggests a way forward for assessment of students' facility with these kinds of language structures.

It is also interesting to note that both the Kanien'kéha and Seliš models make use of proficiency statements. The Seliš proficiency statements clearly take into account language forms, including polysynthetic structures.

It would be worthwhile to conduct a broader survey of assessment materials developed for other polysynthetic Indigenous languages, such as Inuktitut, Navajo, Dene languages of the Northwest Territories and Algonquian languages of central Canada and Ontario.

2.4 Implications for curriculum

A curriculum for a polysynthetic language must take into account the specific word structures and sentence structures of the language, and balance form-focussed instruction with authentic communication tasks. A curriculum for a polysynthetic Indigenous language must also consider the linguistic and cultural role of larger units of communication: stories, speeches and extended conversations.

The Cherokee immersion research team¹⁴⁵ describes key ways they have improved their school's curriculum:

Over the seven years that the Cherokee immersion school has been operating, teachers and curriculum planners have become more knowledgeable about the principles and practices of immersion, the nuances of Cherokee morphology and syntax and techniques for encouraging communication while simultaneously focussing on linguistic forms.¹⁴⁶

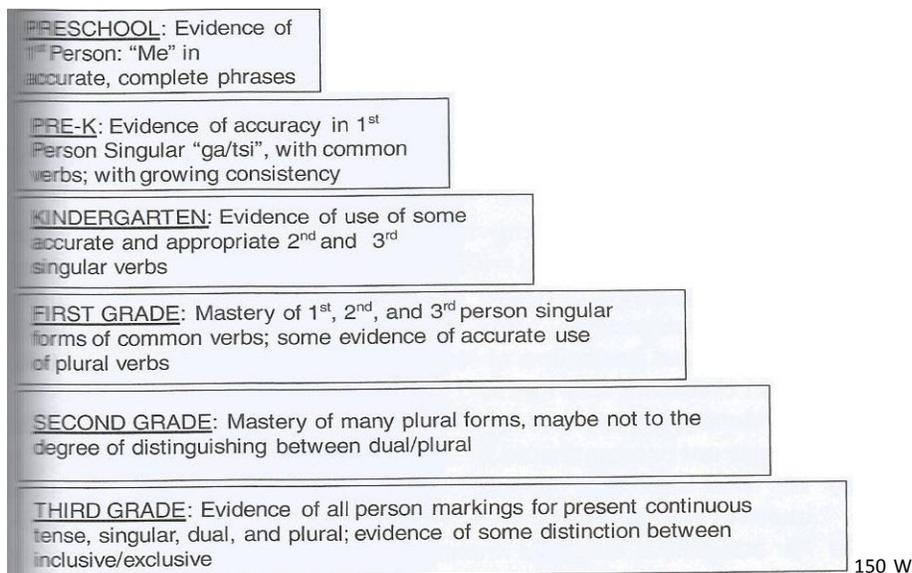
They also emphasize that assessment can help program planners continuously refine their curricular goals. As the researchers describe their curriculum development process, they acknowledge that it has taken years of testing, and of analyzing and revising their assessment tools, "to reach a point at which realistic expectations can be established for children's acquisition of Cherokee as a second language."¹⁴⁷ Developing learning outcomes is necessarily a trial and error process, and regular revisions are important, especially in the early development of a language program.

Bringing word structures into curriculum

Development of assessments for each level of Cherokee learning begins with establishing and prioritizing linguistic learning outcomes for each grade level – that is, responding to the question "What should children be able to do in Cherokee by the end of the school year?" Teachers and curriculum planners combine their ideals – what they hope students can do – with the reality of what the children actually do with the language on a daily basis. Determining valid outcomes requires a great deal of input from teachers regarding the language functions they and their students use in the classroom, **and** the linguistic forms that the children have mastered or are still developing. The researchers found that it is not necessarily advantageous to balance ideal expectations with classroom realities. "Rather, aiming high by including items that quite possibly none of the students will be able to do, as well as items that they should be able to do with relative ease, allows children to demonstrate greater ranges of abilities."¹⁴⁸

The Cherokee curriculum developers also refer to the Oklahoma Department of Education's Priority Academic Student Skills for English language arts¹⁴⁹ as an indicator of the kinds of speaking, listening, reading, and writing skills students in monolingual classrooms are expected to develop.

Here is an example of a sequence of expectations for mastery of present-tense Cherokee verbs. Each subsequent level includes the skills of the previous level, but targets greater proficiency with Cherokee morphemes.



Bringing larger discourse structures into curriculum

While it is essential to take word-internal structures into account in developing curricula for polysynthetic languages, it is also important to look beyond the sentence, to the structures of longer units of speech, such as stories, speeches, prayers and conversations. It is important to consider the roles these discourses play in the speakers' culture, as well as their function as teaching aids for polysynthetic features. Axelrod and Gómez de García's¹⁵¹ research on Apachean languages demonstrates that the very structure of stories told in these languages reinforce children's acquisition of their polysynthetic structures.

Axelrod and Gómez de García conclude that curriculum and materials development needs to be based on fuller, more unified descriptions of all the features of languages: Not just words and sentences, but also sounds, morphemes, and larger units of discourse. Curricula must also take into account the use of all levels of language structure in different cultural contexts.

^W While English distinguishes between *singular* (one) and *plural* (more than one) *number*, many languages also distinguish *dual number* (two). Many languages also distinguish *inclusive* (us, including you) and *exclusive* (us, but not you) within the *first person plural*.

Further research

It would be worthwhile to conduct a broader survey of curricula developed for other polysynthetic Indigenous languages, such as Inuktitut, Kanien'kéha, Navajo, Dene languages of the Northwest Territories and Algonquian languages of central Canada and Ontario. (While the Hawaiian and Maori language programs are excellent models in many ways, these Polynesian languages are isolating.)

3. Recommendations to the Ministry of Education

This section addresses recommendations for how the Ministry of Education might move forward with curriculum and policy for BC Indigenous languages, in light of their diverse polysynthetic structures. It also includes other recommendations for how the Ministry of Education can support teaching and learning of BC Indigenous languages.

3.1 Curriculum and policy

Curriculum development for BC Indigenous languages has historically relied heavily on existing curricula for French as a second language. Integrated Resource Packages developed to date for BC Indigenous languages have only touched on the polysynthetic features of the languages. Examples include the instructional strategy on derivational synthesis from the Hul'q'umi'num' IRP (p. 31 above), and the learning outcomes for classifiers from the Gitxsanimx ~ Gitxsanimax IRP (p. 29 above), both shown in section 2.3.2.1.

Rosborough¹⁵² feels that the Ministry of Education needs to be open to different approaches to curriculum for BC Indigenous languages, due to the factors summarized in section 1 (pp. 4-6) above, which make teaching an Indigenous language different from teaching an international language. Polysynthesis is one of these factors. Rosborough advocates for flexible policies, to allow Indigenous language communities to address these factors at the local level, and experiment with possible solutions. She suggests that a willingness to step outside the grade 5 to 12 Integrated Resource Package template would be beneficial: The Ministry should consider other possibilities if a community wants to submit a curriculum in a different format. On the other hand, the Ministry must also maintain its responsibility for accrediting and supporting development of Indigenous language curricula for use in public schools. Rosborough feels the IRP template is worthwhile, in that it provides some structure for language programs. The IRP development **process** is often very valuable for language communities, although not all BC Indigenous language communities may agree with the IRP structure.

3.1.1 Acknowledging Indigenous and community perspectives

Before making recommendations for curriculum and policy for BC Indigenous languages, it is important to acknowledge the need for ongoing documentation and development of Indigenized curriculum frameworks, as discussed in the language curriculum development guide being prepared by the First Nations Education Steering Committee.^x The suggestions in section 3.1.3 (pp. 64-69) below tend towards breaking down language learning outcomes into smaller and smaller pieces. Indigenous educators would likely prefer a more integrated, holistic approach to language instruction and assessment.

It is also important that the documentation and teaching of polysynthetic word structures be driven by the perspectives of fluent speakers, Elders, and community members – not by linguists' perspectives^y, nor by prescription from the Ministry of Education.

To date, the Ministry has encouraged IRP development for Indigenous language communities by emphasizing that copyright in the language samples used in the IRP document remains with the language community. Indigenous language IRPs developed using the *Languages 5 to 12 Template Development Package* are the intellectual property of the community partner (school district, band council, and/or community partnership) that worked with the Ministry to develop the language IRP particular to that community.

The Ministry of Education should take a similar supportive approach in encouraging an awareness of polysynthetic language features and a balance between experiential and form-focussed instruction for BC Indigenous languages.

3.1.2 A K-12 second language policy?

BC's current legislation mandates that all students study a second language in grades 5 to 8. However, language acquisition research has shown that all languages are acquired more easily by babies and young children. The First Peoples' Cultural Council's new *Language Nest Handbook for BC First Nations Communities* summarizes this research, particularly with regard to speech sounds and pronunciation:

^x Marianne Ignace presented a draft of this guide at the November 2013 FNEESC conference.

^y Many Indigenous language communities in BC had negative experiences with disrespectful academic linguists in the 20th century. Rosborough writes:

I have encountered people who are apathetic and believe that linguistics has nothing to offer our language work and some who are vehemently opposed and believe that linguistics does violence to our language work (Rosborough 2012, 210).

Children can learn languages more quickly and easily than adults, and often with greater success. Young language learners are more likely to develop a greater aptitude or “ear” in that they are better able to recognize sounds that are unique to particular languages. From birth, all infants are able to make sense of any speech sounds they hear over and over. However, sometime between eight and ten months of age, children begin to gradually lose the capacity to recognize certain sounds in languages they don’t hear on a regular basis. Not only that, but they lose the ability to reproduce those sounds accurately. By puberty (or likely by as young as age 7), most humans lose the ability to develop native-like pronunciation if they have not been previously exposed to the language.¹⁵³

This research supports the idea that BC’s language learning policies should encourage, or even mandate, second language instruction in Kindergarten through grade 4. Waiting until grade 5 to begin learning a second language means students miss out on some of their most receptive years for natural language acquisition.

Considered simply from the perspective of language structures, a single language policy for Kindergarten to grade 12 could encompass both Indigenous languages and international languages in BC. European and Asian languages also have some polysynthetic features, so having separate curriculum policies and templates for Indigenous languages and International languages is not necessarily an appropriate solution. However, the instructional contexts and goals of these language programs must also be taken into account.

For BC Indigenous languages, in urgent need of revitalization, K-4 language instruction taking advantage of younger children’s inherent abilities to learn language only makes sense. Offering Indigenous language programming at the high school level will also support Indigenous students’ success, both academically and with regard to health and identity.

Indigenous language instruction needs to be supported at all levels. School districts which offer locally developed Indigenous language programs to satisfy the grade 5-8 language requirement, but do not offer high school courses in the Indigenous language may place Indigenous students at a disadvantage. For example, before the approval of the *SENĆOŦEN 5 to 12 Integrated Resource Package 2012*, Indigenous WSÁNEĆ students in School District 63 would study French from Kindergarten to grade 5, and SENĆOŦEN in middle school. This left them unable to return to French in grade 9, and without the high school language credit required for University entrance. This often led to teachers advising WSÁNEĆ students to continue with French, rather than studying their own language. This issue has now been resolved with the approval of the *SENĆOŦEN 5 to 12 Integrated Resource Package 2012* and the introduction of SENĆOŦEN high school courses in School District 63. However, there are likely similar cases around the province, where Indigenous students’ success could be better supported with consistent language programming from Kindergarten to grade 12.

International language programs’ goals also need to be considered. If the goal of a second language program is vocabulary development, basic conversational skills, and knowledge **about**

the language and its speakers' culture, a grade 5-8 language policy is sufficient. If the goal is greater fluency, it also makes sense for international language instruction to begin in Kindergarten and continue through high school.

One of the reasons for the establishment of the grade 5-8 language policy for international languages¹⁵⁴ was the lack of specialist teachers available to implement second language instruction in the earlier grades. Lack of qualified teachers is also a serious concern for BC Indigenous languages, although teacher training and professional development programs are beginning to make progress. In this respect, implementing a K-12 language learning policy is an opportunity for the BC Ministry of Education to show leadership and foresight: A policy that makes it clear that language teachers are needed will encourage speakers and learners of BC Indigenous languages to become teachers, as well as encourage other teacher trainees to specialize in international languages.

3.1.3 Possible ways forward with curriculum and policy

An awareness of polysynthetic language structures points to a need for more form-focused instruction for BC Indigenous languages, in balance with current experiential learning approaches. (The Introductory 11 courses for senior high school students would also benefit from including more direct instruction early on.) The key questions are whether this balance can be achieved within a single curriculum document, and if so, what format should it take.

Three possible ways forward are presented in the following subsections:

- 1) The present IRP template, or a similar curriculum with a communicative-experiential approach, could be paired with a *teaching grammar*,² a description of the grammar of a language written for teachers and second-language learners.
- 2) The present IRP template could be adapted to better accommodate language forms.
- 3) Language functions and language forms could be merged in a new curriculum format.

² *Grammar* refers to the set of rules for using a language which every fluent speaker of that language unconsciously knows. When someone acquires a language naturally in childhood, the vast majority of the information in his or her grammar is not learned through instruction or conscious study, but rather by listening to and observing other speakers of the language. Someone learning a language later in life needs more explicit instruction to acquire the grammar of the language. *Grammar* may also refer to the codified rules of a particular, relatively well-defined variety of a language. *A grammar* also refers to a specific description, study or analysis of these rules. A reference book describing the grammar of a language is called a *reference grammar*. A *teaching grammar* or *pedagogical grammar* is a description of the grammar of a language intended for teachers and second-language learners. (Grammar (2014). Retrieved from: <http://en.wikipedia.org/wiki/Grammar> Pedagogical grammar (2014). Retrieved from <http://grammar.about.com/od/pq/g/pedagrammterm.htm>)

The question of curriculum format is also connected to larger questions of second-language policy. There is a need to balance a broad approach at the provincial curriculum policy level with more specific proficiency statements or learning outcomes at the particular language level.

3.1.3.1 An experiential language curriculum plus a teaching grammar

Anderson's *Ts'msyen Sm'algyax Grammar Resources* is an excellent example of a teaching grammar for a BC Indigenous language. Such a grammar guide is an essential support **for** a curriculum for an endangered language being taught as a second language: The word structures and sentence structures of the language must be clearly documented, and teachers provided with professional development to help them convey these language structures to their students. However, a grammar guide need not be inherently tied **to** the curriculum it supports. Endangered-language communities need to set realistic goals for their language programs, and a grammar guide paired with an experiential, Indigenized language curriculum could be a realistic shorter-term goal.

In this scenario, in addition to accrediting an experiential language curriculum in the present IRP format, or a similar format, language curriculum policy could encourage communities applying for accreditation of their language programs to show evidence of awareness of the word structures and sentence structures of their languages. This might then suggest the need for communities and/or school districts to develop plans to provide their language teachers with ongoing professional development on these topics.

BC's Indigenous language communities are all at different points in their language documentation and program development, so different communities might present different evidence of awareness of polysynthetic features. Some communities have teaching grammars, others reference grammars, while others have no full documentation of the structures of their languages. A policy which mandated that every language have a teaching grammar would likely delay the language program accreditation process by years. The policy could, however, encourage each language community to submit evidence of awareness of their language's structures, and of their plans towards developing a teaching grammar.

This approach could be an opportunity to work alongside the First Peoples' Cultural Council (FPCC) to improve the overall state of documentation and curriculum and materials development for BC Indigenous languages. FPCC could implement similar policies, that language communities applying for funding show evidence of awareness of polysynthetic language features, and of plans to incorporate this awareness into their materials development and teacher training programs.

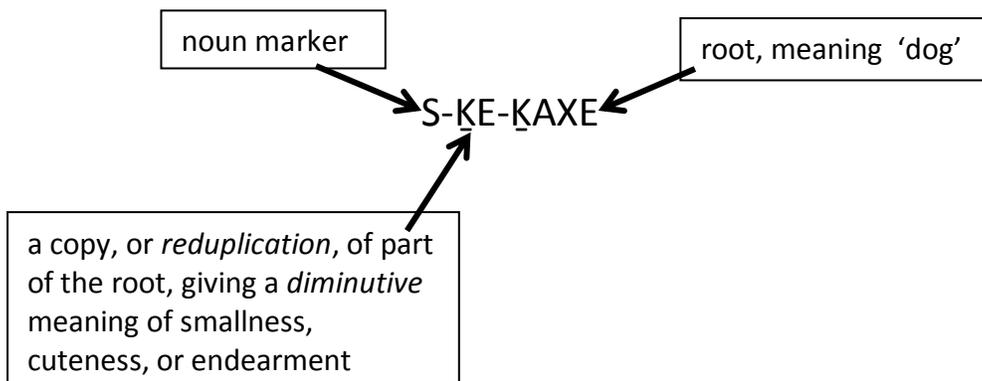
3.1.3.2 Adapting the present Integrated Resource Package template

Linguists working with the present *Languages 5 to 12 Template Development Package* have found it challenging to incorporate content on language forms into the prescribed learning outcomes, due to the template's strong communicative-experiential focus. It is sometimes possible to frame a structural language learning outcome in terms of its corresponding communicative function, as shown in the learning outcomes for Gitxsanimx ~ Gitxsanimax classifiers in section 2.3.2.1 (p. 29) above. Too often, however, the language forms are simply glossed over, or missed completely.

In some cases, the connection between the communicative function and the language form is not obvious to all readers. For example, the *SENĆOŦEN 5 to 12 Integrated Resource Package 2012* includes these learning outcomes:¹⁵⁵

- Grade 9: • recognize endearment terms.
- Grade 10: • recognize and use endearment terms.
- Grade 11: • use endearment terms in a variety of cultural contexts.

It is hoped that teachers of SENĆOŦEN would recognize these outcomes as prompts to cover *diminutive* language structures, as in seen here in the word SKEKAXE, 'little dog':



However, the learning outcomes do not explicitly make the connection between the **function** of expressing endearment, and the **form** of diminutive words. Furthermore, endearment is only one of the functions of the diminutive morpheme in SENĆOŦEN. Diminutive forms can also be used to express physical smallness, or in humorous or insulting contexts.

Sarah Kell, a linguist who has worked on IRPs for six BC Indigenous languages, has tried to include more and more polysynthetic language content into each IRP she works with, as she has become more familiar with the format and limitations of the language curriculum template. However, as a linguist, she would prefer to start from the structures of the language itself to develop learning outcomes for language forms, and then consider their communicative functions, rather than work from functions to forms. It is particularly important not to assume

that the functional/experiential learning outcomes from the French-based language curriculum template are appropriate for a polysynthetic Indigenous language.

Appendix G of the Sm’algyax IRP (excerpted in section 2.3.2.2 on pp. 39-41 above) highlights many polysynthetic features of the language, and presents a good initial attempt at bringing a focus on language forms into the language curriculum template format. However, the Grammatical Objectives (about language forms) could be more clearly connected to the experiential learning outcomes (language functions) of Appendix A.

A possible solution is to add an additional column for language forms – effectively splitting the Prescribed Learning Outcomes column into a Language Functions column and a Language Forms column. In the case of SENĆOŦEN diminutives, there would be a straightforward one-to-one relationship between the functional outcome and the formal outcome:

PRESCRIBED LEARNING OUTCOMES		SUGGESTED INSTRUCTIONAL STRATEGIES
LANGUAGE FUNCTIONS	LANGUAGE FORMS	
<p><i>It is expected that students will:</i></p> <ul style="list-style-type: none"> express smallness, cuteness, or endearment appropriately in a variety of cultural contexts. 	<p><i>It is expected that students will:</i></p> <ul style="list-style-type: none"> recognize and use the <i>diminutive reduplication</i> pattern - e.g., SĶEKĶAXE, ‘little dog’, from SKAXE ‘dog’ 	<ul style="list-style-type: none"> Invite students to improvise social situations (e.g., greeting a guest, gift-giving, family dinners, shopping). Students could draw situation cards and role-play interactions using culturally appropriate behaviour and <i>register</i> - e.g., gestures, expressions of politeness, endearment terms.

However, this would not always be the case. More complex functional outcomes might require multiple formal outcomes, or one formal outcome might support several functional outcomes.

Another approach – cleaner to look at, but perhaps less explicitly clear – would be to simply allow grammatical terminology within functional learning outcomes: Incorporate both ‘how’ and ‘what’ into a single outcome.

PRESCRIBED LEARNING OUTCOMES	SUGGESTED INSTRUCTIONAL STRATEGIES
<p><i>It is expected that students will:</i></p> <ul style="list-style-type: none"> • use <i>diminutive reduplication</i> to express smallness, cuteness, or endearment in appropriate cultural contexts - e.g., SKEKAXE, ‘little dog’, from SKAXE ‘dog’ 	<ul style="list-style-type: none"> • Invite students to improvise social situations (e.g., greeting a guest, gift-giving, family dinners, shopping). Students could draw situation cards and role-play interactions using culturally appropriate behaviour and <i>register</i> - e.g., gestures, expressions of politeness, endearment terms.

Working from formal outcome to functional outcome is more complex than beginning with functional outcomes. An IRP development team seeking to start by creating outcome statements based on language forms should include a linguist who is very familiar with the language.

3.1.3.3 A curriculum format merging language forms and language functions

This approach would require a major revisioning and rewriting of BC’s language curriculum template. Such a format would necessarily be much larger than the present template. The challenge is how to create a template that is broad enough to encompass both Indigenous languages and international languages in BC, and to be reviewed and accredited by generalist Ministry staff, but also makes room for the specific structural features of particular languages. A model based on proficiency levels, such as the Common European Framework of Reference for Languages (CEFR), could provide a broad enough “top-down” structure for both Indigenous languages and international languages. The CEFR model is also good in that proficiency levels need not be tied directly to grades.

Proficiency statements as in the CEFR may provide more room for language functions than the learning outcome statements of the present *Languages 5 to 12 Template Development Package*. The Montana Salish proficiency statements shown in section 2.3.2.3 (pp. 55-57) above illustrate that proficiency statements can also successfully address language forms. Again, the challenge would be to develop a framework that makes room for proficiency statements that address **both** functions and forms.

Proficiency statements about language functions could perhaps be common across BC Indigenous languages and international languages taught in BC, or even connect directly to the CEFR proficiency statements used in Europe and around the world. Further investigation and research is needed on this possibility. Rosborough cautions that the CEFR proficiency statements are less relevant to BC Indigenous languages because BC Indigenous languages do not have the breadth of resources and media that major world languages do.¹⁵⁶ (For example, many CEFR proficiency statements for comprehension refer to the ability to interpret television and radio broadcasts in the target language.) However, workarounds similar to those put forward in BC’s English First Peoples curricula may be possible. For example, for Indigenous

languages, the focus of the communicative proficiency statements could be changed from media broadcasts to oral stories and speeches. Also, as resource development for BC Indigenous languages continues, the gaps will begin to close.

However, proficiency statements about language forms would need to be unique to each Indigenous language or language family. Each language group would need to develop specific proficiency statements and levels for the structural features of their language, from the “grassroots up”, with the help of experienced teachers, Elders, and linguists. For example, Seabird Island has developed a K-4 Halq’eméylem curriculum which merges the present IRP template with CEFR proficiency levels. This could provide a potential model.

It would not necessarily be advisable to use the proficiency statements about language forms for one BC Indigenous language for another BC Indigenous language. Commonalities would likely be found in the middle, at the language **family** level. For example, a set of proficiency statements developed for Nisga’a would be relatively easily adapted for the other languages in the Tsimshianic language family. Again, attention would have to be given to communities’ perspectives on the relatedness of their languages.

A curriculum format which encompasses both communicative and grammatical proficiency statements presents the potential problem that generalist Ministry staff cannot assess whether the proficiency statements that language communities develop for their language forms are correct. This level of review would have to be done by fluent speakers or linguists; generalist Ministry reviewers could only look for the presence or absence of proficiency statements related to specific language forms.

The risk is present that communities eager to have an accredited language program will not take the time to develop appropriate proficiency statements for the structures of their language with the guidance of Elders and linguists. Therefore, supports would be needed to help curriculum development teams understand the process. Possible supports might include documentation of the process undertaken by the Montana Salish curriculum development team, checklists or worksheets, and/or presentations on the process by Ministry staff.

3.2 Other recommendations

Several further recommendations for the Ministry of Education to consider came up in the course of this research project.

Two are shorter term recommendations for gathering and sharing information:

- Rosborough¹⁵⁷ suggested convening a focus group of language educators and linguists to discuss polysynthetic language structures and their role in pedagogy and curriculum.

- The Ministry of Education could sponsor a Word Structures Workshop at the 2015 FNESC languages conference, for language teachers to discuss and share ideas for presenting polysynthetic structures – such as those outlined under Content in section 2.3.2.1 (pp. 28-37) above.

Three further recommendations relate to longer term plans for student support and teacher training.

- Rosborough¹⁵⁸ emphasized the need to provide opportunities for Indigenous students to work on their languages in different ways within the school system. Supported independent learning and support blocks within the timetable can provide important access to language study for urban Indigenous students. Schools should also be prepared to acknowledge and honour Indigenous language learning that takes place in the home or community. For example, the classroom teacher could observe a student's language work a few times a year and acknowledge it on his/her report cards.
- Rosborough¹⁵⁹ also advocates the urgent implementation of co-teaching models for Indigenous languages – in which fluent speakers are paired with trained teachers who are language learners.¹⁶⁰ (Linguists might also have a role in co-teaching of endangered languages.) The Cherokee Nation's ten-year plan for language revitalization includes the goal of:

Soliciting proficient speakers from the community to visit immersion classrooms and to get involved in a variety of cultural activities so that the children have an opportunity to hear the richness of the language spoken by others.¹⁶¹

This emphasizes the fundamental connection between language and culture: the fluent speakers model Cherokee behaviours and values, as well as language structures.

Axelrod and Gómez de García further summarize the necessity of having fluent speakers in the classroom to model polysynthetic language structures for learners:

Scollon and Scollon's (1981)¹⁶² research also suggests the importance of having native speakers as teachers in the classroom, particularly those who are older and more steeped in traditional patterns of talk. Having native speakers as teachers and models in the classroom will ensure the use of facilitating strategies, of scaffolded and supported interactions, that are appropriate both for the cultural traditions and for the language structure.¹⁶³

- Jacobs¹⁶⁴ points out the need for a language teacher training model which incorporates language structures and linguistics. Examples in BC include Simon Fraser University's one year certificate program for Hul'q'umi'num' teachers in Duncan, Capilano University's program for Skwxwú7mesh teachers, and the University of Victoria's Certificate in Aboriginal Language Revitalization.

Current and future language teachers also need support around how to get the most out of their work with Elders and fluent speakers, both for the teachers' own language learning and for the development of learning and teaching materials.¹⁶⁵

3.3 Areas for future research

This report has identified several areas for future educational and linguistic research.

The major question for the Ministry of Education is how to move forward with curriculum for BC Indigenous languages. If the option to create a new curriculum format merging language functions and language forms (presented in section 3.1.3.3, pp. 68-69 above) is chosen, further research is needed on similarities and differences in proficiency statements about language functions across Indigenous languages and international languages. Supports will also need to be developed to help BC Indigenous language communities create appropriate proficiency statements about specific language forms.

A broader survey of instructional methods, assessment, and curriculum developed to date for other polysynthetic Indigenous languages should also be conducted.

Topics for future educational research include:

- how polysynthetic language structures can be taught indirectly, through experiential and/or immersion methodologies,
- the role of storytelling in language teaching and learning (and indeed in all teaching and learning),
- development of applications and games to support form-focussed instruction of polysynthetic language structures,
- development of assessment tools for polysynthetic languages, for both immersion programs and part-time second-language programs, and
- whether assessment tools based on European models can be adapted successfully for Indigenous languages.

Topics for linguistic research include:

- how polysynthetic languages are acquired – both naturally by children learning their first languages, and by children and adults learning polysynthetic languages as second languages,
- fluent speakers' and learners' perceptions of word structures, and

- the role of storytelling in conveying the structures of polysynthetic languages to learners.

4. References

All documents referred to in compiling this report are listed in the Endnotes below. Major references are listed here, along with selected documents which may be relevant for future research.

The following references have been submitted as **PDF files** accompanying this report:

Assembly of First Nations, Education, Jurisdiction, and Governance (2012). First Nations Lifelong Learning Assessment Report Final Report.
first_nations_lifelong_learning_report.pdf

Axelrod, M. & Gómez de García, J. (2007). Repetition in Apachean Narrative Discourse: From Discourse Structure to Language Learning in Morphologically Complex Languages. *Language, Meaning, and Society*, 1, 108-109, 137. **5AxelrodGomez_LMS2007.pdf**

Cushman, E. (2013). Wampum, Sequoyan, and Story: Decolonizing the Digital Archive. *College English*, 76 (2), 124. **ce0762wampum.pdf**

Ignace, M. B. (1998). *Handbook for Aboriginal Language Program Planning in British Columbia*. North Vancouver, Canada: First Nations Education Steering Committee.
HandbookForAboriginalLanguageProgramPlanning.pdf

Kelly, B., Wigglesworth, G., Nordlinger, R., & Blythe, J. (2014). The Acquisition of Polysynthetic Languages. *Language and Linguistics Compass*, 8 (2), 51-64.
AcqOfPolysyntheticLgs.pdf

McIvor, O., Napoleon, A., & Dickie K.M. (2009). Language and Culture as Protective Factors for At-Risk Communities. *Journal of Aboriginal Health*, November 2009.
culture and language as protective factors.pdf

The Mohawk Language Standardisation Project (1993).
The Mohawk Language Standardisation Project.pdf

Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada.
ubc_2012_fall_rosborough_patricia.pdf

The following **books and chapters** were also major references:

Mithun, M. (1999). *The Languages of Native North America*. Cambridge, UK: Cambridge University Press.

Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. In Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters

Sherris, A., Pete, T., Thompson, L.E. & Flynn Haynes, E. (2013). Task-based language teaching practices that support Salish language revitalization. In Jones, M.C. & Ogilvie, S. (Eds.) *Keeping Languages Alive: Documentation, Pedagogy, and Revitalization*, 159. New York, NY: Cambridge University Press.

The following references may be useful for **future research**:

Peter, L. & Hirata-Edds, T. (2006). Using assessment to inform instruction in Cherokee language revitalization. *International Journal of Bilingual Education and Bilingualism*, 9, 643-658.

Peter, L. & Hirata-Edds, T. (2009). Learning to read and write Cherokee: Toward a theory of literacy revitalization. *Bilingual Research Journal*, 32, 207-227.

Peter, L., Hirata-Edds, T., & Montgomery-Anderson, B. (2008). Verb development by children in the Cherokee language immersion program, with implications for teaching. *International Journal of Applied Linguistics*, 18(2), 166-187.

Vandergrift, L. (2006). *New Canadian Perspectives: Proposal for a Common Framework of Reference for Languages for Canada*. Ottawa, Canada: Social Sciences and Humanities Research Council of Canada and Department of Canadian Heritage.

Williams, L., Kell, S., Marinakis, A., Blenkiron, A., Jenni, B. & Newbury, D. (2009). Curriculum and resources for First Nations language programs in BC First Nations schools project – Final report. Vancouver, Canada: First Nations Schools Association. (Unpublished; available by special request.)

Endnotes

¹ First Peoples' Cultural Council (2013). *Annual Report 2012/13*. (Brentwood Bay, Canada: First Peoples' Cultural Council.)

² Interview with Trish Rosborough, March 19, 2014.

³ Kelly, B., Wigglesworth, G., Nordlinger, R., & Blythe, J. (2014). The Acquisition of Polysynthetic Languages. *Language and Linguistics Compass*, 8 (2), 51.

⁴ First Peoples' Heritage, Language, and Culture Council (2010). *Report on the status of B.C. First*

-
- Nations languages 2010*. Brentwood Bay, Canada: First Peoples' Heritage, Language, and Culture Council, 23.
- ⁵ Gitksan Language Authority & Coast Mountains Board of Education (2014). *Gitksenimx̱ ~ Gitksanimax̱ 5 to 12 Integrated Resource Package 2014*. Terrace, Canada: Coast Mountains Board of Education, 8.
- ⁶ Mclvor, Napoleon & Dickie (2009), paraphrasing: Norris, M. (2007). Aboriginal languages in Canada: Emerging trends and perspectives on second language acquisition. *Canadian Social Trends*, 20-28
- ⁷ Mclvor, Napoleon & Dickie (2009), paraphrasing: Shaw, P. (2004). *Indigenous language education initiatives in Canada*. Paper presented at the International Symposium on Language, Diversity and Education, Vancouver, BC.
- ⁸ Hallett, D., Chandler, M. J., & Lalonde, C. E. (2007). Aboriginal language knowledge and youth suicide. *Cognitive Development*, 22, 398.
- ⁹ Mclvor, O., Napoleon, A., & Dickie K.M. (2009). Language and Culture as Protective Factors for At-Risk Communities. *Journal of Aboriginal Health*, November 2009, 13.
- ¹⁰ Ibid, 18.
- ¹¹ Gitksan Language Authority & Coast Mountains Board of Education (2014). *Gitksenimx̱ ~ Gitksanimax̱ 5 to 12 Integrated Resource Package 2014*. Terrace, Canada: Coast Mountains Board of Education, 8.
- ¹² Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 244.
- ¹³ Mithun, M. (1999). *The Languages of Native North America*. Cambridge, UK: Cambridge University Press.
- ¹⁴ Crystal, D. (2008). *A Dictionary of Linguistics and Phonetics, 6th Edition*. Malden, MA: Blackwell Publishers.
- ¹⁵ Morphological typology. (2013). Retrieved from: http://en.wikipedia.org/wiki/Morphological_typology
- ¹⁶ Isolating language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Isolating_language
- ¹⁷ Synthetic language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Synthetic_language
- ¹⁸ Vietnamese language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Vietnamese_language
- ¹⁹ Isolating language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Isolating_language
- ²⁰ Crystal, D. (2008). *A Dictionary of Linguistics and Phonetics, 6th Edition*. Malden, MA: Blackwell Publishers.
- ²¹ Tenenbaum, J. (1978). *Morphology and semantics of the Tanaina verb* (Doctoral dissertation). Columbia University. Cited in Mithun (1999), 364-5.
- ²² Synthetic language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Synthetic_language
- ²³ Ibid.
- ²⁴ Polysynthetic language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Polysynthetic_language
- ²⁵ Crystal, D. (2008). *A Dictionary of Linguistics and Phonetics, 6th Edition*. Malden, MA: Blackwell Publishers.
- ²⁶ Polysynthetic language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Polysynthetic_language
- ²⁷ Synthetic language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Synthetic_language
- ²⁸ Ibid.
- ²⁹ Mithun, M. (1999). *The Languages of Native North America*. Cambridge, UK: Cambridge University Press, 71.
- ³⁰ Moses Columbia Language Program, Colville Confederated Tribes. (2006). *Nxaʔamxcín Nwwawlx̱tnt: Moses Columbia Dictionary*. Nespelem, WA: Colville Confederated Tribes, xix.
- ³¹ Mithun, M. (1999). *The Languages of Native North America*. Cambridge, UK: Cambridge University Press, 38.
- ³² Crystal, D. (2008). *A Dictionary of Linguistics and Phonetics, 6th Edition*. Malden, MA: Blackwell Publishers.
- ³³ Tenenbaum, J. (1978). *Morphology and semantics of the Tanaina verb* (Doctoral dissertation). Columbia University. Cited in Mithun (1999), 365.
- ³⁴ Tarpent, M-L. (1989). *A grammar of the Nisgaha language* (Doctoral dissertation). University of Victoria, Victoria, Canada. Cited in Mithun (1999), 529.
- ³⁵ Hinkson, M.Q. (2000). The Semantics of the Lexical Suffix *an/n'ak. *Proceedings of the Annual Meeting of the Berkeley Linguistics Society*, 26 (2), 69. Citing personal communication with Marianne Ignace.
- ³⁶ Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 208.
- ³⁷ Boas, F. (1947). Kwakiutl grammar with a glossary of the suffixes. *American Philosophical Society Transactions*, 37 (3), 201-377. Cited in Mithun (1999), 148-9.
- ³⁸ Mithun, M. (1999). *The Languages of Native North America*. Cambridge, UK: Cambridge University Press, 104.
- ³⁹ Crystal, D. (2008). *A Dictionary of Linguistics and Phonetics, 6th Edition*. Malden, MA: Blackwell Publishers.
- ⁴⁰ Head-marking language. (2013). Retrieved from: http://en.wikipedia.org/wiki/Head-marking_language

- ⁴¹ Stz'uminus First Nation. (2013). *Stz'uminus Hul'q'umi'num Dictionary*. Shellbeach, Canada: Stz'uminus First Nation, 13-14.
- ⁴² Gerdt, D.B., & Hinkson, M.Q. (2004). Salish Numeral Classifiers: A Lexical Means to a Grammatical End. *Sprachtypologie und Universalienforschung*, 57 (2/3), 247, 255.
- ⁴³ Hukari, T.E., & Peter, R.M. (1995). *The Cowichan dictionary of the Hul'q'umi'num' dialect of the Coast Salish people*. Duncan, Canada: Cowichan Tribes.
- ⁴⁴ Gerdt, D.B. (2012). Ghosts, Mirrors, and Adversative Passives in Hul'q'umi'num'. *Northwest Journal of Linguistics*, 6 (4), 1-11.
- ⁴⁵ Crystal, D. (2008). *A Dictionary of Linguistics and Phonetics, 6th Edition*. Malden, MA: Blackwell Publishers.
- ⁴⁶ Agglutinative language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Agglutinative_language
- ⁴⁷ Crystal, D. (2008). *A Dictionary of Linguistics and Phonetics, 6th Edition*. Malden, MA: Blackwell Publishers.
- ⁴⁸ Agglutinative language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Agglutinative_language
- ⁴⁹ Crystal, D. (2008). *A Dictionary of Linguistics and Phonetics, 6th Edition*. Malden, MA: Blackwell Publishers.
- ⁵⁰ Agglutinative language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Agglutinative_language
- ⁵¹ Fusional language. (2014). Retrieved from: http://en.wikipedia.org/wiki/Fusional_language
- ⁵² Hukari, T.E., & Peter, R.M. (1995). *The Cowichan dictionary of the Hul'q'umi'num' dialect of the Coast Salish people*. Duncan, Canada: Cowichan Tribes.
- ⁵³ Mithun, M. (1999). *The Languages of Native North America*. Cambridge, UK: Cambridge University Press, 38.
- ⁵⁴ Todd, E.M. (1970). *A grammar of the Ojibwa language: the Severn dialect* (Doctoral dissertation). University of North Carolina, Chapel Hill, NC. Cited in Mithun (1999), 327, 338-340.
- ⁵⁵ Bakker, P. & Papen, R. (1997). Michif: a mixed language based on Cree and French. In S. Thomason (Ed.), *Contact languages: a wider perspective* (pp. 295-365). Amsterdam: John Benjamins. Cited in Mithun (1999), 325, 599-602.
- ⁵⁶ Ibid, 602.
- ⁵⁷ Hargus, S. & Rice, K. (Eds.) (2005). *Athabaskan Prosody*. Philadelphia, PA: John Benjamins, 3-4.
- ⁵⁸ Hargus, S. & Rice, K. (Eds.) (2005). *Athabaskan Prosody*. Philadelphia, PA: John Benjamins, 5.
- ⁵⁹ Mithun, M. (1999). *The Languages of Native North America*. Cambridge, UK: Cambridge University Press, 346-366.
- ⁶⁰ Rushforth, S. (1991). Uses of Bearlake and Mescalero (Athapaskan) classificatory verbs. *International Journal of American Linguistics*, 57, 251-66. Cited in Mithun (1999), 107.
- ⁶¹ Morgan, L. (1991). *A description of the Kutenai language* (Doctoral dissertation). University of California, Berkeley, CA. Cited in Mithun (1999), 452-4.
- ⁶² Mithun, M. (1999). *The Languages of Native North America*. Cambridge, UK: Cambridge University Press.
- ⁶³ Tarpent, M-L. (1989). *A grammar of the Nisgaha language* (Doctoral dissertation). University of Victoria, Victoria, Canada. Cited in Mithun (1999), 528-31.
- ⁶⁴ FirstVoices: Nisga'a Story - K'ilhl Mihlatgum Gan. (2013). Retrieved from: <http://www.firstvoices.com/en/Nisgaa/story/flash/b083d850f5302bb5/One+Green+Tree>
- ⁶⁵ Mithun (1999), 106, 110, 151, 551. Citing Swadesh, M. (1936). Nootka internal syntax. *International Journal of American Linguistics*, 9, 77-102; Berman, J. (1990). Notes on shape classification in Kwak'wala. *Proceedings of the International Conference on Salish and Neighbouring Languages*, 25, 37-60; Boas, F. (1947). Kwakiutl grammar with a glossary of the suffixes. *American Philosophical Society Transactions*, 37 (3), 201-377.
- ⁶⁶ Levine, R. (1977a). *The Skidegate dialect of Haida* (Doctoral dissertation). Columbia University. Cited in Mithun (1999), 415-6.
- ⁶⁷ Interview with Trish Rosborough, March 19, 2014.
- ⁶⁸ Fortescue, M. & Lennert Olsen, L. (1992). The acquisition of West Greenlandic. In Slobin, D.I. (Ed.) *The crosslinguistic study of language acquisition, vol. 3*, 111-220. Hillsdale, NJ: Lawrence Erlbaum. Cited in Kelly, Wigglesworth, Nordlinger & Blythe (2014).
- ⁶⁹ Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 206.
- ⁷⁰ Interview with Trish Rosborough, March 19, 2014.

- ⁷¹ Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 236.
- ⁷² Hukari, T.E., & Peter, R.M. (1995). *The Cowichan dictionary of the Hul'q'umi'num' dialect of the Coast Salish people*. Duncan, Canada: Cowichan Tribes.
- ⁷³ Sherris, A., Pete, T., Thompson, L.E. & Flynn Haynes, E. (2013). Task-based language teaching practices that support Salish language revitalization. In Jones, M.C. & Ogilvie, S. (Eds.) *Keeping Languages Alive: Documentation, Pedagogy, and Revitalization*, 159. New York, NY: Cambridge University Press.
- ⁷⁴ Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 29.
- ⁷⁵ Kell, S. (2006). First Peoples' Cultural Foundation *One Green Tree* Publication Project Final Report. (Unpublished.) 6.
- ⁷⁶ Stz'uminus First Nation. (2013). *Stz'uminus Hul'q'umi'num Dictionary*. Shellbeach, Canada: Stz'uminus First Nation, 13.
- ⁷⁷ FirstVoices: SENĆOTEN: Search. (2013). Retrieved from: <http://www.firstvoices.com/en/SENCOTEN/word-query-results?q=house&btn=Search&archive=SENCOTEN&lang=en>
- ⁷⁸ LifeCycles Society (2014, March 7). Planting Seeds in March! [Electronic newsletter].
- ⁷⁹ Interview with Trish Rosborough, March 19, 2014.
- ⁸⁰ Ibid.
- ⁸¹ Sherris, A., Pete, T., Thompson, L.E. & Flynn Haynes, E. (2013). Task-based language teaching practices that support Salish language revitalization. In Jones, M.C. & Ogilvie, S. (Eds.) *Keeping Languages Alive: Documentation, Pedagogy, and Revitalization*, 165. New York, NY: Cambridge University Press.
- ⁸² Gitxsan Language Authority & Coast Mountains Board of Education (2014). *Gitxsanimx ~ Gitxsanimax 5 to 12 Integrated Resource Package 2014*. Terrace, Canada: Coast Mountains Board of Education, A-2, A-3.
- ⁸³ School District 85 First Nations Education Council member groups (2010). *Kwak'wala 5 to 12 Integrated Resource Package 2010*. Port Hardy, Canada: School District 85, 20-22.
- ⁸⁴ Examples from: Stz'uminus First Nation. (2013). *Stz'uminus Hul'q'umi'num Dictionary*. Shellbeach, Canada: Stz'uminus First Nation, 14; and Hukari, T.E., & Peter, R.M. (1995). *The Cowichan dictionary of the Hul'q'umi'num' dialect of the Coast Salish people*. Duncan, Canada: Cowichan Tribes.
- ⁸⁵ Ignace, M. B. (1998). *Handbook for Aboriginal Language Program Planning in British Columbia*. North Vancouver, Canada: First Nations Education Steering Committee, 112.
- ⁸⁶ Hul'q'umi'num' Stakeholders Committee, School District 68 & School District 79 (2007). *Hul'q'umi'num' 5 to 12 Integrated Resource Package 2007*. Nanaimo, Canada: School District 68 & School District 79, 92.
- ⁸⁷ The Mohawk Language Standardisation Project (1993). Retrieved from: <http://www.kahonwes.com/msp/msp.htm>
- ⁸⁸ Ibid, 44.
- ⁸⁹ Sammons, O.N. (n.d.). Updating the Sauk lexicon: Strategies and implications for language revitalization. *Santa Barbara Papers in Linguistics*, 20.
- ⁹⁰ Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 207.
- ⁹¹ Axelrod, M. & Gómez de García, J. (2007). Repetition in Apachean Narrative Discourse: From Discourse Structure to Language Learning in Morphologically Complex Languages. *Language, Meaning, and Society*, 1, 138.
- ⁹² Strang Burton to Sarah Kell, personal communication, 2005.
- ⁹³ Battiste, M., & Youngblood Henderson, J. (Sa'ke'j). (2000). Protecting Indigenous knowledge and heritage: A global challenge. Saskatoon, SK: Purich, 79. Cited in Rosborough (2012).
- ⁹⁴ Sammons, O.N. (n.d.). Updating the Sauk lexicon: Strategies and implications for language revitalization. *Santa Barbara Papers in Linguistics*, 20, 7
- ⁹⁵ Interview with Trish Rosborough, March 19, 2014.
- ⁹⁶ Axelrod, M. & Gómez de García, J. (2007). Repetition in Apachean Narrative Discourse: From Discourse Structure to Language Learning in Morphologically Complex Languages. *Language, Meaning, and Society*, 1, 108-109, 137.

- ⁹⁷ Cushman, E. (2013). Wampum, Sequoyan, and Story: Decolonizing the Digital Archive. *College English*, 76 (2), 124.
- ⁹⁸ Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 248.
- ⁹⁹ Anderson, M. (n.d.). *Ts'msyen Sm'algyax Grammar Resources*, Introduction, 2-3.
- ¹⁰⁰ Halliday, M.A.K. (1989). Context of situation. In Halliday, M.A.K. & Hasan, R. (Eds.) *Language, Context, and Text: Aspects of Language in a Social-Semiotic Perspective*. Oxford, UK: Oxford University Press. Cited in Axelrod & Gómez de García (2007).
- ¹⁰¹ Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 240-241.
- ¹⁰² First Nations Education Steering Committee & British Columbia Ministry of Education (2008). *English 12 First Peoples Integrated Resource Package 2008*. Victoria, Canada: British Columbia Ministry of Education, 14.
- ¹⁰³ Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 207.
- ¹⁰⁴ British Columbia Ministry of Education (2006). *The Languages 5 to 12 Template Development Package*. Victoria, Canada: British Columbia Ministry of Education, 4. Adapted from: Teaching and Learning K-12 Authentic Instruction Communication, Section 7.19, *ASCD Curriculum Handbook*, September 1994.
- ¹⁰⁵ Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. In Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters, 204.
- ¹⁰⁶ Interview with Peter Jacobs, November 19, 2013
- ¹⁰⁷ Ts'msyen Sm'algyax Authority (2000). *Sm'algyax (Algyaqm Ts'msyen) 5 to 12 Integrated Resource Package 2000*. Prince Rupert, Canada: School District 52, 238-244.
- ¹⁰⁸ Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. In Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters, 205-6.
- ¹⁰⁹ Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 239.
- ¹¹⁰ Axelrod, M. & Gómez de García, J. (2007). Repetition in Apachean Narrative Discourse: From Discourse Structure to Language Learning in Morphologically Complex Languages. *Language, Meaning, and Society*, 1, 136.
- ¹¹¹ Ts'msyen Sm'algyax Authority (2000). *Sm'algyax (Algyaqm Ts'msyen) 5 to 12 Integrated Resource Package 2000*. Prince Rupert, Canada: School District 52, 5.
- ¹¹² Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, ch. 6.
- ¹¹³ Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. In Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters, 203.
- ¹¹⁴ Assembly of First Nations, Education, Jurisdiction, and Governance (2012). *First Nations Lifelong Learning Assessment Report Final Report*, 28. Retrieved from: http://www.afn.ca/uploads/files/education/first_nations_lifelong_learning_report.pdf
- ¹¹⁵ Mithun, M. (1989). The acquisition of polysynthesis. *Journal of Child Language*, 16 (1989), 285-312. Cited in Kelly, Wigglesworth, Nordlinger & Blythe (2014).
- ¹¹⁶ Xanthos, A., S., et al. (2012). On the role of morphological richness in the early development of noun and verb inflection. *First Language* 31(4), 461-79. Cited in Kelly, Wigglesworth, Nordlinger & Blythe (2014).
- ¹¹⁷ Kelly, B., Wigglesworth, G., Nordlinger, R., & Blythe, J. (2014). The Acquisition of Polysynthetic Languages. *Language and Linguistics Compass*, 8 (2), 60.
- ¹¹⁸ Ibid, 51-64.
- ¹¹⁹ Asher, J.J. (1969). The Total Physical Response approach to second language learning. *The Modern Language Journal*, 53(1), 3-17.
- ¹²⁰ Hinton, L., Vera, M., and Steele, N. (2001). *How to Keep Your Language Alive: A Commonsense Approach to One-on-One Language Learning*. Berkeley, CA: Heyday Books.

-
- ¹²¹ Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. In Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters.
- ¹²² Sherris, A., Pete, T., Thompson, L.E. & Flynn Haynes, E. (2013). Task-based language teaching practices that support Salish language revitalization. In Jones, M.C. & Ogilvie, S. (Eds.) *Keeping Languages Alive: Documentation, Pedagogy, and Revitalization*, 159. New York, NY: Cambridge University Press.
- ¹²³ Ibid, 163.
- ¹²⁴ Ibid, 155-156.
- ¹²⁵ Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, ch. 6.
- ¹²⁶ Ibid, 207.
- ¹²⁷ Interview with Peter Jacobs, November 19, 2013
- ¹²⁸ Interview with Trish Rosborough, March 19, 2014.
- ¹²⁹ Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. In Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters.
- ¹³⁰ Interview with Trish Rosborough, March 19, 2014.
- ¹³¹ Ts'msyen Sm'algyax Authority (2000). *Sm'algyax (Algyaqm Ts'msyen) 5 to 12 Integrated Resource Package 2000*. Prince Rupert, Canada: School District 52, 5.
- ¹³² Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 234.
- ¹³³ Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. Citing Lindholm-Leary, K. (2011) Student Outcomes in Chinese Two-Way Immersion Programs: Language Proficiency, Academic Achievement, and Student Attitudes. Both in Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters.
- ¹³⁴ Assembly of First Nations, Education, Jurisdiction, and Governance (2012). *First Nations Lifelong Learning Assessment Report Final Report*, 23. Retrieved from: http://www.afn.ca/uploads/files/education/first_nations_lifelong_learning_report.pdf
- ¹³⁵ Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. In Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters.
- ¹³⁶ Ibid, 188.
- ¹³⁷ British Columbia Ministry of Education (2006). *The Languages 5 to 12 Template Development Package*. Victoria, Canada: British Columbia Ministry of Education.
- ¹³⁸ Assembly of First Nations, Education, Jurisdiction, and Governance (2012). *First Nations Lifelong Learning Assessment Report Final Report*. Retrieved from: http://www.afn.ca/uploads/files/education/first_nations_lifelong_learning_report.pdf
- ¹³⁹ Ibid, 27.
- ¹⁴⁰ Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. In Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters.
- ¹⁴¹ Ibid, 193-4.
- ¹⁴² Sherris, A., Pete, T., Thompson, L.E. & Flynn Haynes, E. (2013). Task-based language teaching practices that support Salish language revitalization. In Jones, M.C. & Ogilvie, S. (Eds.) *Keeping Languages Alive: Documentation, Pedagogy, and Revitalization*, 159. New York, NY: Cambridge University Press.
- ¹⁴³ Pete, T. (Ed.) (2010). *Seliš nyo?nuntn = Medicine for the Salish language: English to Salish translation dictionary*. Pablo, MT: Salish Kootenai College Press.
- ¹⁴⁴ Adapted by Sarah Kell (Integrated Resource Package development consultant), with inspiration from Cheryl Sebastian (School District 82) and Anne Hill (BC Ministry of Education).

-
- ¹⁴⁵ Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. In Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters.
- ¹⁴⁶ Ibid, 203.
- ¹⁴⁷ Ibid, 205.
- ¹⁴⁸ Ibid.
- ¹⁴⁹ Oklahoma Priority Academic Student Skills (2014). Retrieved from: <http://ok.gov/sde/oklahoma-c3-priority-academic-student-skills>
- ¹⁵⁰ Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. In Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters, 205.
- ¹⁵¹ Axelrod, M. & Gómez de García, J. (2007). Repetition in Apachean Narrative Discourse: From Discourse Structure to Language Learning in Morphologically Complex Languages. *Language, Meaning, and Society, 1*.
- ¹⁵² Interview with Trish Rosborough, March 19, 2014.
- ¹⁵³ First Peoples' Cultural Council (2014). *Language Nest Handbook for B.C. First Nations Communities*. Brentwood Bay, Canada: First Peoples' Cultural Council. Citing Freeman, Y. S., & Freeman, D. E. (2006). *Teaching reading and writing in Spanish and English in bilingual and dual language classrooms*. Portsmouth, NH: Heinemann; and Howard, E. R., & Sugarman, J. (2006). *Realizing the Vision of Two-Way Immersion: Fostering Effective Programs and Classrooms*. Washington, D.C.: Center for Applied Linguistics and Delta Systems.
- ¹⁵⁴ Interview with Elizabeth McAuley, April 9, 2014.
- ¹⁵⁵ W̱SÁNEĆ School Board (2012). *SENĆOŦEN 5 to 12 Integrated Resource Package 2012*. Brentwood Bay, Canada: W̱SÁNEĆ School Board (2012).
- ¹⁵⁶ Interview with Trish Rosborough, March 19, 2014.
- ¹⁵⁷ Ibid.
- ¹⁵⁸ Ibid.
- ¹⁵⁹ Ibid.
- ¹⁶⁰ Rosborough, P.C. (2012). *K'angextola sewn-on-top: Kwak'wala revitalization and being indigenous* (Doctoral dissertation). University of British Columbia, Vancouver, Canada, 205.
- ¹⁶¹ Peter, L., Sly, G. & Hirata-Edds, T. (2011). Using Language Assessment to Inform Instruction in Indigenous Language Immersion. In Tedlick, D.J., Christian, D. & Williams Fortune T. (Eds.) *Immersion Education: Practices, Policies, Possibilities*. Bristol, UK: Multilingual Matters, 192.
- ¹⁶² Scollon, R. & Scollon, S. (1981). *Narrative, Literacy and Face in Interethnic Communication*. Norwood, NJ: Ablex.
- ¹⁶³ Axelrod, M. & Gómez de García, J. (2007). Repetition in Apachean Narrative Discourse: From Discourse Structure to Language Learning in Morphologically Complex Languages. *Language, Meaning, and Society, 1*, 138-9.
- ¹⁶⁴ Interview with Peter Jacobs, November 19, 2013.
- ¹⁶⁵ Interview with Trish Rosborough, March 19, 2014.