AAC & Heritage Languages

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AAC & Heritage Languages

Janet Callahan

Introductions

- **Indigenous neurodivergent mom of Indigenous autistic children (one current AAC user, one former AAC user)**
- **Engineer by training and vocation**
- **Enrolled Oglala Lakota**
- **Mom's Family in SD, Dad's family in Missouri**

Alex & Bethany
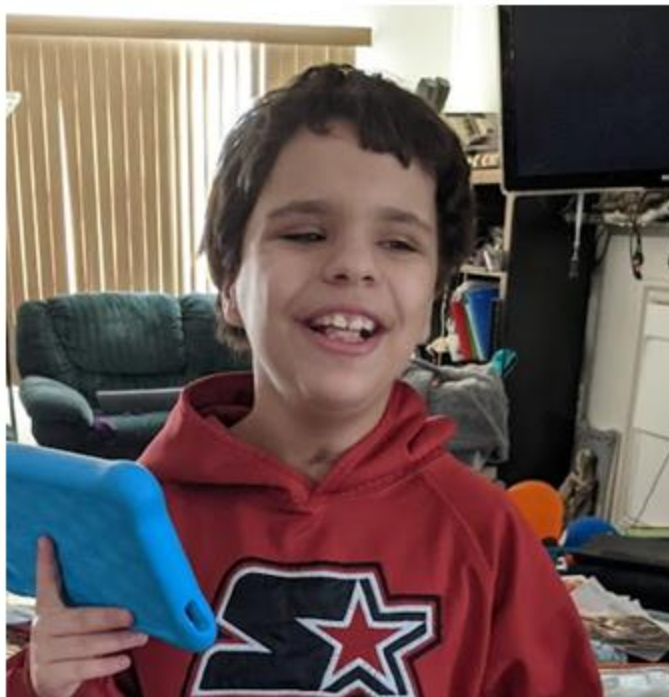
Terminology

- The preference is to use the names of specific peoples whenever possible
- "Indian" is almost never used today by itself; "American Indian" is in many organization names, and is often used by older folks because that's how they grew up, and it's used by the US government
- Native American is most commonly used in the US; First Nations is used in Canada. Note that Alasakan Natives are generally outside the Native American definition, as are Hawaiian Natives and Indigenous peoples of Mexico and South America
- Indigenous is more common among younger people when discussing the greater community

Heritage Languages

1. Languages spoken by immigrants in their home country that they continue speaking in their new country, largely at home, or in religious or cultural settings.
2. Languages that belong to Indigenous peoples to a place that have been diminished by colonization and other forces. Many are endangered and are being revitalized by their communities.

Why Do Heritage Languages Matter?

- Language impacts the way we think and the way we see the world
- Language and culture are intertwined
- Language ties us to our families and our past
- Language often has ties to religion/spirituality and other traditions

Our Project

- Due to Covid, we withdrew our children from school to homeschool
- Added Lakota to our schooling (for the whole family - none of us are fluent - more on that in a bit)
- We are using games, stories, flash cards, and text books
- Our non-speaking child was clearly going to need AAC - but how?

Can AAC Users be Multilingual

- Yes, definitely - there are a number of multilingual users that are AAC users
- If we presume competence, we assume that they can do anything any other person their age might do
- Are we so focused on getting it right in the primary or dominant language that we haven't considered whether they are capable of more?

Heritage Languages Complicate AAC Learning

- If the user only has one language on their AAC device, is it the language used in school by the majority culture, or the language used at home?
- Are family members fluent enough in the dominant language to also model fluently?
- Particularly for young children, have they been exposed to enough of the dominant language to be fluent, or are they really more fluent in the Heritage Language?
- Is the family willing to use the dominant language, or does primarily speaking the dominant language mean that children cannot communicate with older relatives?
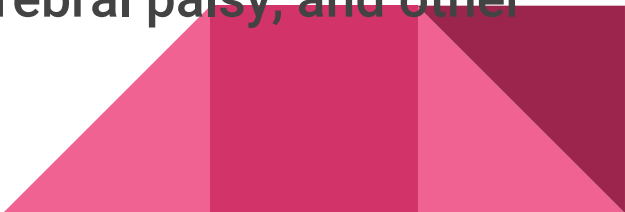
What About Translations?

- Not every language uses the same grammar structure
- Not every language translates words exactly the same
- Not every language forms sentences the same way
- Straight translation works amongst similar languages - particularly western European languages
- Voices matter

The vast majority of research and resources go to 4 languages: English, Spanish, Arabic, and Cantonese. (From Kalika Bali's TED Talk, "The Giant Leaps in Language Technology - and Who's Left Behind," February 2020)

The Need

- Current estimates are that 1 in 54 children have autism [1], and that about 20-40% will have difficulty speaking [2, 3] up to and including those who are non-verbal. That's about 4-8 out of every 1000 children

- Native American children are currently under-diagnosed with autism [4, 5, 6, 7]

- AAC has been shown to improve verbal speech in the long run, not hamper it [8]

- Those of all ages with brain injuries, strokes, cerebral palsy, and other disabilities may also have difficulty speaking

A Little History

In the 1860s, the US Government started opening "Indian Schools" - boarding schools meant to "kill the Indian and save the Man." Most were abusive. All required children to speak only English.

The vast majority of Native American battles against the US government ended with the Wounded Knee Massacre of December, 1890.

Personal note:

My Lakota great grandparents were born around 1895 and spoke Lakota to almost none of their family (particularly my grandmother) after early elementary age.
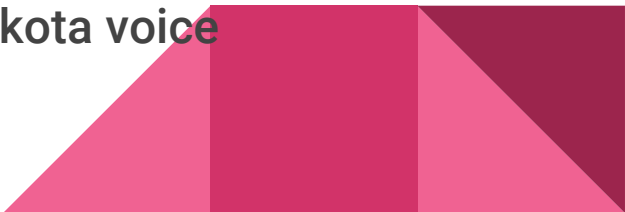
My German great grandparents were born around 1905 (half of them in Germany) and spoke German to their children (including my grandmother) up into the 40s (until WWII)

Language Revitalization

Currently, we have books, a few TV shows, some youtube videos, flash cards, games, an internet based program similar to duolingo, tiktok and other social media mini-lessons. We do not have access to immersion programs in schools - we don't live near our reservation, but also most do not include special ed students past preschool.

Our AAC solution

- CoughDrop based - largely because of accessibility at lower cost than many options, because it will run on many devices.
- Lakota grammar is dramatically different from English. The word that is translated as "Red" functions as a verb in Lakota, and the word encompasses the entire sentence, "It is red." Verb conjugations are handled by suffixes, prefixes, and affixes, and there are several regular patterns for verbs, plus some irregular verbs. There is also a case for "You and I" that is separate from "We"
- But then what about the voice output? There's no Lakota voice

The Voice Problem

- There are no Lakota voices
- We could record words, but then (a) our child's device will be speaking with our voice(s) and (b) he won't be able to spell words that aren't in the device and have them spoken
- We could attempt to phonetically spell everything but there are sounds in Lakota that don't exist in English
- On a whim, because Lakota typed on social media tries to auto-translate as Czech, we tried using a Czech voice. Not horrible, but inconsistent across devices and needs some tweaks (w vs. v sound, for example)
- What we really need is Lakota voices
- We have a potential project in the works with a researcher

Motor Planning

- My child is a LAMP WFL user in English. The motor planning aspects of it were key for him to make progress originally
- Lakota verb patterns are complex, often including references to both subject and object
- We made a template for verb pages so that all of the first person singular verbs are in the same place on the page and so on
- We are using categories for major nouns because there are so many verbs to manage - even those nouns can be used as verbs

Progress

- Fewer tries at modeling required - he knows how a device works
- Online learning of vocab is huge for him, allowing him to do what he does well and leaving the rest to be sorted out later.

Example
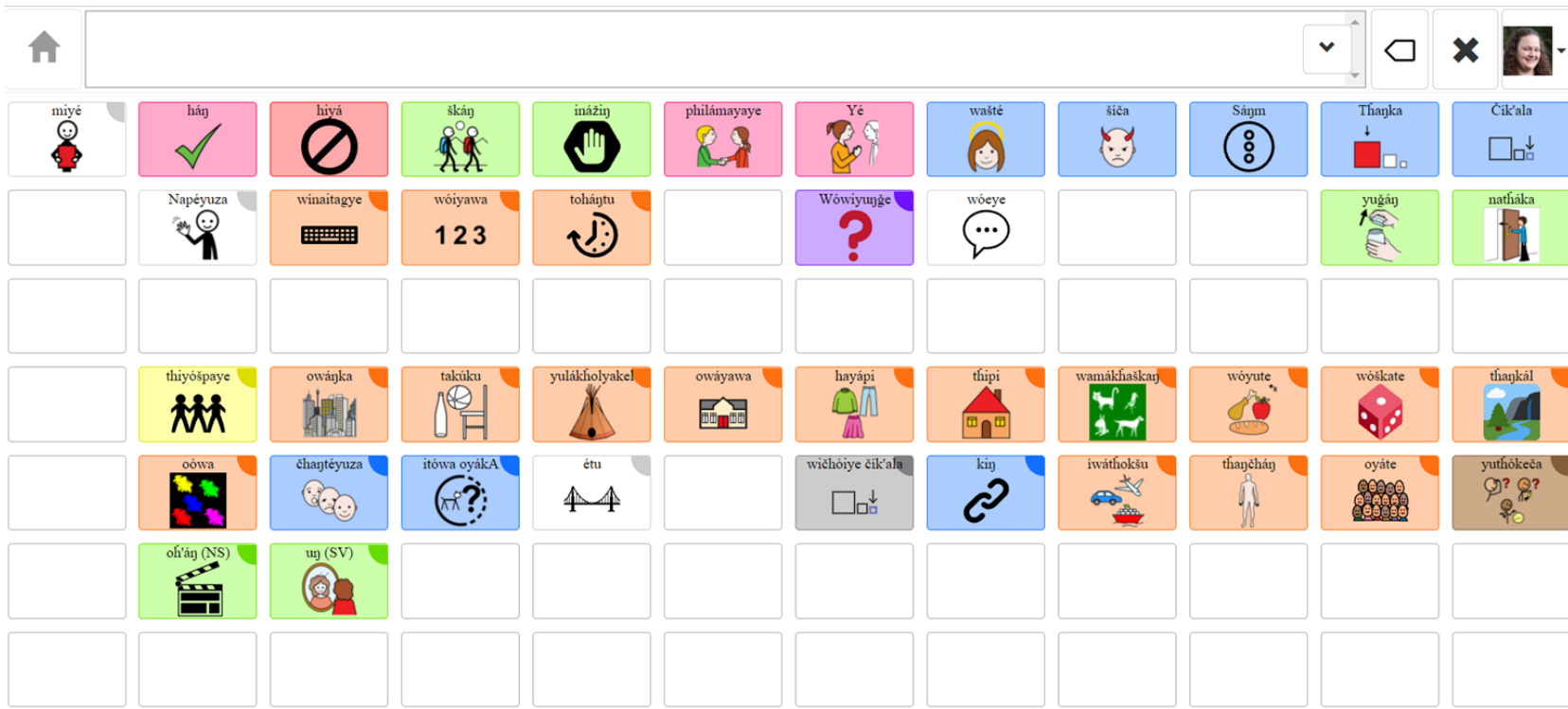
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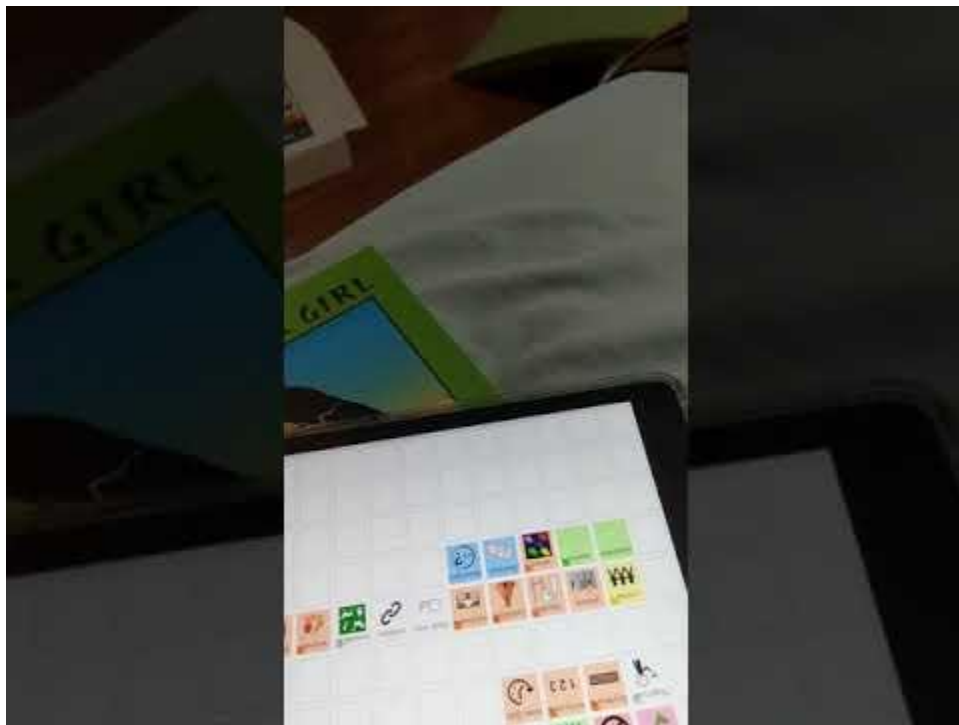
Considerations

- Core words are different. Partly because of the change in verbs and verb structure, and partly because of culture. Animals and plants are very common names and are used all the time.
- Traditional tools, ceremonies, and objects must also be included in core words for the device to really be useful

Wider Implementation

- Currently seeking partnerships with reservation schools
- Autism is dramatically under-diagnosed in Native American communities
- Disability is seen quite differently in most Indigenous societies
- Hoping to beta-test later this school year
- Hoping to fundraise or find grants to provide licenses and devices to students
- Have located at least one Indigenous speech therapist who is creating icons that are culturally appropriate; more artists will likely be needed
- Bigger goal: voice engine that works properly

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- [8] https://www.asha.org/PRPSpecificTopic.aspx?folderid=8589942773&section=Key_Issues#:~:text=%20use%20of%20AAC%20does,%2C%20%26%20Miller%2C%201991)

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