Sustaining Generations of Indigenous Voices: Reclaiming Language and Integrating Multimedia Technology

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Today, there are approximately 7,000 languages spoken throughout the world, each varying in size from hundreds of millions of speakers to languages with all but a few speakers remaining. Nearly 97% of the world's people speak 4% of the world's languages, which includes English, Mandarin, Hindi, Spanish, Arabic, and German, among others. Conversely, approximately 96% of the world's languages are spoken by 3% of the world's people (Bernard, 1996, p. 142). It is estimated by 2100, more than half of the languages currently spoken will disappear. Some of these languages have not yet been documented, and if these languages cease to exist, a "wealth of knowledge about history, culture, the natural environment, and the human brain" (National Geographic Society, 2009) will be lost.

For many Indigenous language communities and language learners, a general topic of concern in today's society is how technology can contribute to language revitalization. This subject provokes discussions resulting in a dynamic that at times may be very challenging. At one end of the spectrum, it is common to see younger generations using technologies of all sorts, and communicating in ways that were unavailable to the world ten or more years ago; this includes texting, blogging, chatting, tweeting, and so forth. However, at the opposite end of the spectrum, it is common to presume little or no use of the latest technologies by elders.

Generally, when thinking of Indigenous language revitalization and education, the utilization of technologies is frequently viewed as the following: an unnecessary distraction, a favorable and positive tool that engages language learners, especially youth, or a combination of both. The role of technology in language revitalization includes preservation of the Indigenous language; material development and dissemination; multiple modes of communication; and achieving relevance, significance and purpose (Galla, 2009). For technology to have a role in an Indigenous community there needs to be a collective understanding of its purpose and use.

Since little has been written about the integration of multimedia and Indigenous language revitalization (see Lockee, 1996; Obonyo, 2009; Slimane, 2008), this paper reveals the role technology plays in bringing together elders who are the language and knowledge holders and youth who are technologically savvy users to perpetuate their respective languages and cultures. The data is based on an earlier international study comprising 80 survey respondents who indicated use of multimedia technology for Indigenous language revitalization (Galla, 2010). The direct quotes are from anonymous survey participants unless otherwise noted.

Technology and Indigenous language communities

The state of Indigenous languages, according to Krauss (1992) indicates that majority of the speakers are in the grandparental generation or older. Youth, on the other hand, are not learning the language and/or growing up in the language. With these statistics constantly in the minds of community and language advocates, teachers, and parents, technology is now a highly considered option as a supplementary teaching tool. It is important to note that the use of technology for language revitalization is a supplement to language teaching, since technology cannot replace intergenerational language transfer, teach or save a language single-handedly. Consideration of technology should be ruminated on following discussion of the community's language goals and available resources. Additionally, the adapted technacy framework, which includes examination of social, economic, environmental, technological, linguistic and cultural factors will help to identify the context in which multimedia technology is utilized (Galla, 2010). With the assistance of technology, the teaching possibilities and learning opportunities can be much greater than spreading any human resources thin.

Using the language for everyday communication and all functions of life are key to revitalizing and sustaining Indigenous languages. In this culturally diverse and technologically enhanced world, it is difficult to anticipate the survival of Indigenous languages in the 21st century without supplemental support of multimedia. Technology is a concept that encompasses a wide range of artifacts, methods, systems, tools, and practices, which extends from low- to high-end advancements (Zhao, 2003). These types of technologies include "wax cylinder recordings to digital audio recordings, e-mail to chat, video recordings to interactive audio video conferencing, and/or surfing the Internet to playing interactive computer games" (Galla, 2009, p. 173). Moreover, three categories of initiatives are described to capture these various types of multimedia technology. Low-technology or uni-sensory initiatives "emphasize one sensory mode, allowing the learner to receive the Indigenous language through sight or hearing. More specifically, the user visually sees the language either in printed material (e.g., books) or on a screen (e.g., subtitles), or audibly via a speaker or sound system" (p. 173). The second level, mid-technology or bi-sensory initiatives are "bisensory, allowing the learner to receive the Indigenous language through sight and hearing and/or require the use of a keyboard and mouse (point and click), and access to the Internet" (p. 174). The final level, high-technology or multi-sensory initiatives allow for "asynchronous communication, synchronous communication or multimodal interactivity between the user and the technology. In this category, input and output of the Indigenous language are key factors" (p. 175). The application of technologies in one level does not in any way suggest that a community is more advanced than another; rather indicates the level(s) used by the given community and/or Indigenous language advocate.

Multimedia technologies among Indigenous communities are viewed in contrasting ways, as a double-edged sword, whereby it is viewed either as a benefit, aid or supplement to language learning or as a distraction and unnecessary tool (Bennett, 2003). At one end of the continuum, technology can be beneficial; however at the other end, a problem with technology is that it has no potential of making an impact if the tools are not accessible. In many Indigenous communities, access to technology is limited to the school and/or community centers. At other times, the technology is too old or out of date. Although the digital divide between generations of Indigenous communities seems to be getting narrower, as well as between teachers and students, the effectiveness is only as good as its access and availability of computers and the Internet, knowledge, skills and attitudes crucial to make use of the technological resources, and the knowledge of the Native language (Eisenlohr, 2004). Oftentimes, technological products and/or software are accepted and utilized without considering the possible ramifications, which have included "the invasion of privacy, digital public domain used for personal gain, the misuse of control, ... and manipulation" (Delgado, 2003, p. 94). Thus the integration of technology requires ethical awareness and an understanding of its role within the Indigenous community.

With the many changing faces of literacy, it is most common to find that youth are very familiar with technology. Children now grow up in multiliterate environments that consist of reading, writing, listening, speaking, and computing. Social, cultural and oral traditions have decreased tremendously amongst Native youth, inhibiting intergenerational language transfer (Real Bird, 2001 as cited in Wiburg, 2003). However, with the advent of the Internet, technology provides possibilities for documentation, preservation, conservation, stabilization and perpetuation of endangered languages, distribution of cultural information, conversation in new domains and so forth (US Congress, 1995). Technology offers opportunity for Indigenous voices to be heard worldwide, whereas much of what has been published and disseminated about these communities have been from the perspectives of non-Natives (Ingle, 2003). Technology has been influential in bridging the digital divide that is prevalent within Native American communities (Cultural Survival Quarterly, 2005). Though, major challenges continue to exist, case studies of Indigenous communities offer a glimpse at how communities are using technology to their advantage in empowering ways, while discussing issues related to the planning and execution of projects (Dyson, Hendriks & Grant, 2007).

Technology is not critical in producing Indigenous language speakers, however it gives learners additional ways in which to communicate and interact using the language. For example, Leokī, a Hawaiian electronic bulletin board system has provided effective communicative interaction in the written language through e-mail, chat and open discussions. These types of interactions have been found to be beneficial to language learners (Warschauer & Donaghy, 1997). When using technology in conjunction with language learning, the technology chosen should supplement the lesson and not be the

lesson. Therefore it is important to know the purpose, function, and potential of each technology that is being considered.

Empowerment, ownership, and engagement of language learners

Youth born in the 21st century are surrounded by a multitude of technology and cannot live without it: cell phones, Internet, e-mail, and iPods. Schools and universities have fewer textbooks to read and take home, but rather students are directed to the Internet with links to pertinent websites full of relevant information. More often, instructors are using course or content management systems to deliver the instruction and content of the class. Schools are becoming wireless laboratories, where information is placed at the student's fingertips. A reality however is that youth today are not learning their Native language. Youth may not be interested in learning the language because of many factors that include: their family's history of attending boarding schools, punishment their family members received when speaking their language, viewing the language as an accessory that is something that is revealed at cultural events and ceremonies, succumbing to the youth pressure and wanting to "fit-in", believing that speaking their Indigenous language has no economic value, and so forth. To some, these are sound reasons for not continuing to speak or teach the language, while others may "continually pick at the lock" (Zepeda, 2008, p. 64). Additional studies show that many Indigenous youth do express interest and yearning to learn their language (McCarty and Wyman, 2009). However, youth are also aware of ideological countercurrents stigmatizing their languages and often do not have enough opportunities to learn their language. Some want to use any means necessary to preserve the language in hopes that future generations will be able to grow up in the language, while others may want to learn the language for ceremonial purposes or communicate with the elder generations, and so forth.

The major concern of most, if not all endangered language communities, is that the language is no longer being transmitted to the younger generations. By integrating technology with language learning, this will attract youth to engage with the language, even at a minimal level, as well as "stimulate youth as this is the media they prefer to work with." As a participant noted,

> [Technology] gets youth involved even if they are remotely interested in the language itself; the lure of technology is one reason, and their skills are valued by language practitioners, especially the elders who may not be comfortable directly using technology.

The methods used to engage future generations should involve creative and innovative techniques and strategies that stimulate both language speakers and learners. By making learning enjoyable, the practice does not become intimidating or overwhelming for any language learners. Rather the learning process is more of an acquisition of the language, as

noted by one participant,

> New technologies have the capacity to make learning engaging and fun. The right balance of learning, pleasure and engagement has to be struck if younger speakers of local languages are to take up the mantle of their language.

This standpoint can influence youth in learning their language and heritage culture. In addition, technology can bring together youth and elders to collaboratively work on language projects. Elders bring their knowledge of the language, while youth bring their understanding and proficiency of technology, thus allowing for an extraordinary opportunity for the language community. As one respondent noted,

> Elders see the 'passion' of the youth in learning and using the language through technological mediums and appear to be more inclined to use the language. The time between elder and youth meetings is not as few and far between because there is more of a "common ground" for communication.

Not only does this opportunity bring together generations of language speakers and learners, but it also introduces technology to these generations as well, particularly adults and elders. This is an empowering moment for the community and it is this invested interest in the language and culture that results in a sense of ownership among the devoted stakeholders: the community, youth, adults, elders, teachers, tribal government, and so forth. When people become invested, they are more likely to come together to work on language projects, develop materials and create curriculum knowing that they have control on what is done. The feeling and knowledge of ownership can go a long way, even despite the challenges of any community. As one participant indicated,

> If technology can be the main thing [role], which empowers our people to be directly involved with language activity, we [can] retain ownership and the knowledge of what is withheld in our languages.

Indigenous peoples are taking the initiative to learn what is necessary to revitalize their languages and discover technological tools that can assist in the process. Control is in the community's hands as they become educated about these new technologies. Traditionally, in the past, it was common for "outsiders" to conduct research on Indigenous peoples, without permission, consultation, approval, discussion, verification and documentation of their findings. Indigenous people can now do research for their own communities. Professionals, such as linguists and anthropologists can serve as consultants and advise the community, so that authority and ownership lies within the community. Communities have control in creating their own education, teaching materials, and curriculum. This act alone empowers Indigenous peoples, so that they have complete control, ownership, and rights of what is taught developed, used, disseminated, shared, and so forth.

Collaborative and reciprocal learning

Bringing together elders who are the language and cultural experts and pairing them with youth who are the primary users of technology provides for a great opportunity for collaboration and reciprocal knowledge exchange. The ideal outcome for this team would be to establish proficiency in the language, as well as to increase capacity in multimedia technology.

> It's like a double advantage for us, we're learning how to use new tools, like new technology and new tools, at the same time we're doing it in Hawaiian language, and so we get to learn two things at once. We learn new technology, and implementing it with the Hawaiian language, which I think is really, really good. (Hawaiian language student in Warschauer, 1998, p. 146)

By making the language available in traditional as well as new domains, the community, language learner, youth and so forth feel that there is a purpose for their language. If the language is portrayed as functional, useful and has a place in the larger world, they are more inclined to engage in learning the language or at least feel that the language is a necessary part of their Indigenous well-being. For youth and those who have not learned their language, the assistance of a technological tool can be empowering in that the tool never judges the learner. For first-time learners of the language, this can be an incentive of the technology. To some, technology may give a language status; such that the Indigenous language is worthy and is able to feel "normal" around other languages of wider communication.

The use of technology in developing curriculum and materials may also attract the younger generations who would not otherwise be interested in the language alone. A way to attract youth, who are not speakers of the language, is to utilize the tools they are most comfortable with. By bridging both worlds, this can be a win-win situation for the language community at large, by contributing their technological skills and knowledge to document, create, and develop language resources, while simultaneously learning the language and culture as well. This view was shared by a respondent as well.

> The curriculum guides the nature of materials to be prepared and used, and often technology helps in the development of materials. The use of technology in documentation and materials development tend to attract community people (esp. the younger ones) to become a part of the language revitalization team.

Since youth are the future of our languages, creative and innovative ways are necessary to engage them in the language revitalization and reclamation process. With appropriate software, communities no longer need to depend on outside publishing companies to print language materials. Printing costs, which include paper, toner, and binding, are relatively

inexpensive. In addition, another option includes saving the language materials as a digital file to be used and interacted with on computers or mobile devices in community centres, school computer labs, homes, and beyond. This later alternative eliminates paper altogether, preserves the language, and allows for greater distribution to community members who are separated by distance.

By creating this type of collaboration between youth and elders, a reciprocal relationship is formed. The time spent together contributes to language and multimedia technology sharing and teaching; thereby youth learning their Indigenous language and culture and elders learning about multimedia technology. Traditionally the elder would provide the language, while the language learner would be adept in computer applications, making this team effort a successful one for both. This partnership will lessen the pressure of the elder in learning something new, and instead precious time can be spent on working with the language together and learning from one another. An additional benefit to this partnership is that there is always a support system where they can assist one another in times when there is criticism, opposition, and resistance.

Conclusion

Much of the world is immersed in global technologies that have at times hindered or suppressed Indigenous and heritage languages. This not only provides extreme challenges, but also fosters opportunities in finding strategies and techniques that will best suit the community based on their goals and available resources. Many communities face language endangerment and extinction and are looking towards ways that will preserve, document, revitalize, reclaim, perpetuate, and maintain their languages. One way to contribute to the aforementioned efforts is to integrate multimedia technology with Indigenous language teaching and learning.

Technology may not be enough to learn or teach a language, but some only have that to rely upon, thus making technology an important component to carefully consider in contemporary language contexts. Pairing elders and youth together results in a powerful, collaborative, synergistic and reciprocal partnership, ensuring that language is transmitted to younger generations, whilst providing opportunities for elders to learn new technologies and engage with multimedia.

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