

Designing Indigenous Language Revitalization

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Endangered Indigenous languages have received little attention within the American educational research community. However, within Native American communities, language revitalization is pushing education beyond former iterations of culturally relevant curriculum and has the potential to radically alter how we understand culture and language in education. Situated within this gap, Mary Hermes, Megan Bang, and Ananda Marin consider the role of education for Indigenous languages and frame specific questions of Ojibwe revitalization as a part of the wider understanding of the context of community, language, and Indigenous knowledge production. Through a retrospective analysis of an interactive multimedia materials project, the authors present ways in which design research, retooled to fit the need of communities, may inform language revitalization efforts and assist with the evolution of community-based research design. Broadly aimed at educators, the praxis described in this article draws on community collaboration, knowledge production, and the evolution of a design within Indigenous language revitalization.

In this article we use the case study of an Indigenous language material development project and other surrounding moments of Indigenous knowledge creation to purposefully consider and learn from Indigenous language revitalization efforts in a specific community. Using retrospective analysis (diSessa & Cobb, 2004), we explore questions of design as they pertain to the evolution of a community-based design process for language revitalization. Our analysis is situated within the context of design-based research, an iterative methodology that seeks both to generate and advance fundamental knowledge and theoretic

cal insights and simultaneously to develop transformative praxis of real problems (diSessa & Cobb, 2004).

For Indigenous communities and scholars, the long-standing problem of superficial incorporation of culture into curriculum is a critical and reoccurring pattern and central challenge to overcome. Efforts to remedy “failure” of Native American students in schooling through cultural-based education and teacher education (Demmert & Towner, 2003) have continually run into binary walls that represent dichotomized thinking and structural racism. One such example, the idea of “living in two worlds,” has become so overused in culture-based education that it functions in a new stereotypical way (Henze & Vanette, 1993). Design-based research (DBR) may be a useful methodological approach to deepen insights for understanding how functioning in *multiple discourses* translates into strategies for language revitalization while also illuminating the role of Indigenous knowledge systems in learning. To explore these issues, we describe the participatory process of materials creation in an Indigenous context to begin to understand what theoretical and practical tools may help carry language learning beyond schools and back to Indigenous homes and families.

During the spring of 2010, Mary Hermes traveled to Chicago and collaborated with researchers at the American Indian Center (AIC), including Megan Bang and Ananda Marin, both of whom were participating in a collaborative research grant project with the American Indian Center, Northwestern University, and the Menominee Culture and Language Commission. All three authors are of mixed-heritage descent and have associations with the Lac Courte Oreilles Ojibwe reservation in Hayward, Wisconsin, and the urban American Indian community in Chicago. The central aim of this collaboration was to consider the possibilities of language revitalization in urban Indian contexts where certain constraints (e.g., few fluent speakers, many languages, decentralized community), as well as potential assets (e.g., technological fluency and access), would necessarily alter current language revitalization configurations and theory. Prior to Mary’s arrival at the AIC, staff and community members had been participating in weekly language nights. At these language nights, people gathered to eat dinner and share language, including Anishinaabemowin, Diné, Chahta, and Menominee. With Mary’s arrival, staff at the AIC, researchers, and community members began using an interactive language learning software called Ojibwemodaa! and participated in immersion-like workshops. At the same time, we began to discuss the relationship between language revitalization, materials design, and design-based research, which soon became a part of our everyday conversations. This retrospective analysis and the design ideas presented here arise from the relationships and conversations we developed across community-based organizations and educational institutions.

In this article we discuss three different, but related, windows of opportunity—or moments—of Indigenous knowledge production within Ojibwe lan-

guage revitalization: (1) language immersion schools, (2) ceremonial and relational epistemology, and (3) Ojibwe movie-making camps. We then continue the discussion with a retrospective analysis of the process, including questions we asked and decisions we made based on the specific context and needs of the community. Two important questions arise from this analysis:

1. How can a community production process regenerate meaning making with Indigenous languages and create transformative language revitalization theory and practice?
2. How can different processes for materials creation (aided by technological tools) open up spaces for deeper cultural inclusion in academic discourses?

While using this example of a technologically driven multimedia language software project, we situate our discussion broadly in ideas about language and culture in context, specifically framed by the movement toward Indigenous language revitalization.

Academic and Community Efforts Toward Language Revitalization

Indigenous language revitalization in the United States comes out of the desire of Indigenous community/nation members to see their languages (and cultures) survive and come into daily use again as well as from a movement among scholars concerned with language loss (Fishman, 1991, 2001; Hinton & Hale, 2001; Krauss, 1998; Reyhner & Lockard, 2009). The language revitalization movement is passionate, political, and deeply personal, particularly for many Native people who are acutely aware that the federal government's attempted genocide was the direct cause of Indigenous language loss. The broader academic origin of the field of documenting endangered languages emanates from an awareness of the innate value of the world's diversity of languages (Krauss, 1998; Maffi, 2005). While these boundaries are changing, it is the intersection of community and academic efforts that we find interesting (Hermes, 2012; Penfield et al., 2008). We aim to map the terrain of language revitalization as both revitalization *and* documentation as we attempt to develop theoretical insights across contexts.

Ideas from design-based research (DBR) help us unpack the process of learning and cultural production within the processes of materials creation. Through exploring essential questions as they arose from practice in community in this project, we see that a new field is emerging around the pedagogy of Indigenous language revitalization. Drawing on language revitalization efforts based in community activism and academic efforts of language documentation, this article takes advantage of the participatory process of materials creation and the development of learning environments designed from, and centered on, Indigenous epistemologies, philosophies, and languages.

Design-Based Research

Design-based research, an iterative methodology, pairs the design of learning environments with research on learning. This methodology enables researchers to contextualize theoretical questions about learning within people's lives (Collins, Joseph, & Bielaczyc, 2004). According to Edelson (2002), DBR provides "guidelines for the process rather than the product" and is a rich, complex, and often recursive practice bounded by process decisions as well as decisions about needs, opportunities, and form (p. 115). Further, the design process often results in the development of frameworks that provide prescriptive solutions to challenges and "describe the characteristics that a designed artifact must have to achieve a particular set of goals in a particular context" (p. 114). Yet, to date, DBR has been relatively quiet on the impacts of culture or sociohistoric context in schooling and design. We contend that DBR, critically reconfigured, may serve as a productive methodology to support ongoing efforts for language revitalization.

What kinds of design decisions are essential to revitalization efforts that would bring language back into the home? And what kind of process is most beneficial in creating these materials? DBR intentionally takes up these questions and integrates them into an iterative process of design, implementation, analysis, redesign, and reimplementation. Design-based research is distinctly different from historical approaches to design in which design was a means of testing a theory (diSessa & Cobb, 2004). Edelson (2002) argues that there are three types of theories that can be learned from DBR: domain theories, design frameworks, and design methodologies. Of critical importance are the ways in which this evolving methodology no longer focuses on testing a theory but, rather, becomes the context in which theory development occurs. Further, DBR also has the affordance of engaging educational researchers in developing immediate solutions for critical, timely, and practical problems in education. We are interested in extending this idea to community participation.

Community-Based Design Research Methodology

Community-based design research redistributes power in the above characterization by making educational research immediately accountable to and in the service of communities (Bang, Medin, Washinawatok, & Chapman, 2010). There are multiple levels at which service and accountability are nuanced by specific community contexts. Scholars engaged in DBR have recognized the constraints of context on design and purport to work toward the most optimal design given current constraints. Interestingly, the lessons involved in DBR often uncover the sociohistoric foundations in which learning, education, and language are deeply entrenched, both within outsider institutions and communities as well as within our own communities (Gutiérrez & Vossoughi, 2010). As these foundations are uncovered, possibilities for making new strategic decisions for our language revitalization efforts emerge.

The retooling of DBR toward language revitalization as employed in the services of community-based design research may have important impact on work in Indigenous communities (Bang & Medin, 2010; Bang et al., 2010; Bang, Marin, Faber, & Suzukovich, in press). Indigenous communities have not been in the decision-making roles in most aspects of formal education for generations. While there are important exceptions, the majority of successes and progress since the 1970s in communities have been at the administrative level, not the classroom level (McCarty, 2009). The majority of American Indian children both on and off reservations have non-Indian teachers (McCarty, 2009). Language education has been distinctly different in this regard in that teachers have been primarily Indigenous people in the contemporary efforts. Some scholars have argued that we are moving toward self-determination in Indian education (Tippeconnic, 1999, 2000). We suggest that language revitalization is a site of *survivance*—a cross between survival and resistance in which ongoing processes of cultural continuity and change unfold (Richardson, 2011; Vizenor, 2008).

There is a momentum of need and a gravity of action that are pulling this theoretical work together, not a single academic discipline. This is an extension of what Hornberger (as cited in McCarty, 2003) calls “the creation of new ideology and implementation space” that are “carved from the bottom up” (p. 7). She is speaking about grassroots language activities that can become institutional, specifically through policy. We build on this idea to further Native American language revitalization research methods, using the practical to carve out new theoretical space from shared experience.

Contextualizing Ojibwe Language Revitalization Efforts

We begin this discussion by examining the budding Ojibwe language immersion schools in the Minnesota and Wisconsin region. Second, as is typical in Ojibwe revitalization, the start of this language project was marked by certain protocols. Here we briefly look at the reciprocity expressed in these cultural protocols. Finally, we describe the making of the content for a material—a language learning software called Ojibwemodaa!¹ Each of these three moments of knowledge production are then followed by analysis.

The heart of the process took place at a gathering of elders and learners at a series of camps where participants made short movies. Throughout we pose questions framed by DBR in order to reconstruct theory for language revitalization. We reflexively ask: How might a participatory process intentionally restore Indigenous ways of learning? And how can DBR yield new directions for future revitalization interventions and designs?

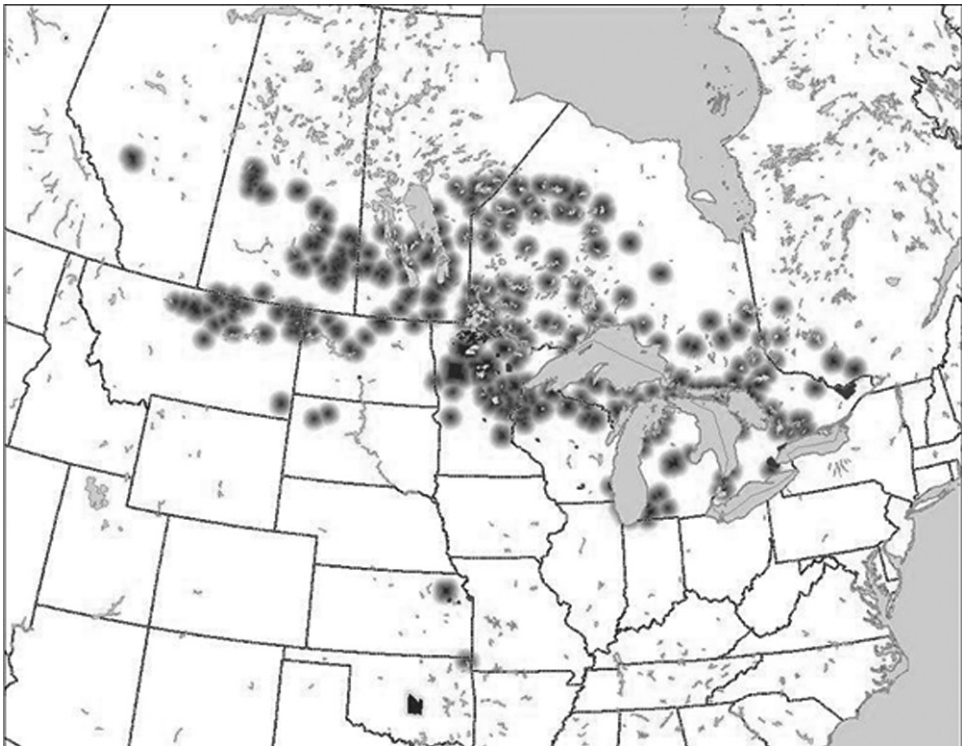
Language Immersion Schools

The Ojibwe language is one of more than three thousand languages that may fall out of use within this century.² Set mainly in the southeastern part of

the Ojibwe nation, our work focuses on eighteen small communities spread across five states. Currently there are an estimated seven hundred speakers of Ojibwe or Anishinaabemowin across the United States. Ojibwe, an Algonquian language also spoken widely in Canada, is considered “endangered” in the United States (see figure 1).

Across Ojibwe communities in northern Minnesota and Wisconsin, the use of immersion schools has expanded greatly in the past decade. Inspired by the success of Indigenous nations in New Zealand and Hawaii, immersion schools and language nests in this context are defined by using the Indigenous language for all communication and all content taught, or 100 percent total immersion. Distinct from *submersion* in a language, the content and target language are thoughtfully scaffolded so learners will not be lost. At least four Ojibwe elementary/preschool immersion programs have started in the past ten years: Waadookodaading Ojibwe Language Immersion School at Lac Courte Orielles, Wisconsin, started in 2001; Niigaane on the Leech

FIGURE 1 *Map of current Ojibwe-speaking communities*



Source: Charles J. Lippert. Adapted from the Wikimedia Commons file, “File: Anishinaabewaki.jpg” <http://commons.wikimedia.org/wiki/File:Anishinaabewaki.jpg>

Lake Ojibwe reservation in Minnesota; Enweyang Ojibwe Language Immersion Nest at the University of Minnesota Duluth; Red Cliff Headstart language nest; and Wicoie Nandagikendan, a combined Ojibwe/Dakota partial immersion program for early elementary students, located in Minneapolis. Currently, immersion and master apprentice efforts are the best known and most popular strategies in Indigenous communities for creating fluent speakers (see, e.g., Rehyner & Lockard, 2009; Wilson & Kamana, 2001). The intensive effort around launching an immersion school, especially in an endangered Indigenous language, generates an urgency for developing speakers and designing technology that can hasten this process. We begin our analysis of context by looking critically at the role of immersion schools and the need for highly proficient speakers.

To date, there is a small but growing number of adults who have learned Ojibwe as a second language to a highly fluent level and consequently a shortage of Ojibwe speaker-teachers (J. Nichols, personal communication, January 2008). Geographically dispersed, the existing immersion schools and English-medium schools teaching Ojibwe as a second language struggle to find teachers who are both certified to teach and have proficiency in the Ojibwe language. In part due to a lack of learning opportunities and materials, those who have acquired proficiency usually have learned through a combination of a master/apprentice method, language classes, and teaching. With only a handful of young proficient speakers (not all of whom are teachers), there is an urgent need to condense the alleged five to six years it takes to make a heritage language learner highly proficient (B. Fairbanks, personal communication, April 2012).

Nearly all public and tribal schools in this area offer Ojibwe language as a for-credit subject, yet immersion schools, by their nature, can only reach a small percentage of the population. For example, in the Waadookodading immersion school, about thirty students, preschool through grade 4, are served every year. In the neighboring border town and public schools, at least two hundred students are enrolled every year in the Ojibwe language program, and a majority continue in this program for six to twelve years. However, second language teaching methods and materials for Indigenous languages in U.S. public school classrooms are nearly nonexistent. Although the second language versus immersion methods debate is beyond the scope of this article, clearly there is a need for materials that can be used in both immersion schools and second language classrooms. In addition, a material that uses technology to make the practice time more efficient and effective is also needed to hasten the development of adult speaker-teachers. One of our hopes in this project is to figure out how to use technology to design materials that can propel a “quantum leap” in Indigenous language learning (Gardner, 2009, p. 86).

Bridging the Discourse Between School and Home

The concept of discourses here elucidates the tensions that arise when designing a school based in the Ojibwe language that also meets K–12 state academic standards. For Gee (1996), discourse is:

a socially accepted association among ways of using language, other symbolic expressions, and “artifacts,” of thinking, feeling, believing, valuing, and acting that can be used to identify oneself as a member of a socially meaningful group, or “social network” or to signal (that one is playing) a socially meaningful “role.” (p. 131)

Creating a curriculum that uses the Ojibwe language illuminates how narrow the academic discourse of school is, and how this narrowness is a source of failure that has been identified, up to this point, as cultural discontinuity (Erikson & Mohatt, 1982; Gee, 2004; Heath, 1983; Phillips, 1972). Discourse attached to academic disciplines is often disconnected from place, shared meaningful localities and the everyday lives of children and families (Gruenewald, 2003; Hawkins, 2004; Schleppegrell, 2004). In contrast, Ojibwe revitalization strives to reconnect the school, community, and land through the Indigenous language in very place-specific and localized ways. Would it be better to invent new Ojibwe words to describe educational, standardized concepts like “triangle” or to challenge the standards to accept the Ojibwe morphemes of shape?

Applied to Indigenous immersion schooling, using a school discourse in Ojibwe or any Indigenous language does not necessarily guarantee that languages will then be spoken in homes (Fishman, 2000). That is to say, if you are taught second-grade math daily in Ojibwe, it does not follow that you can then go home and talk about fishing in Ojibwe to a grandparent or parent. Moreover, it is unclear that you would “talk academic math” in any language in a home context. This disconnect comes from learning language in socially situated contexts as well as moving from one discourse (e.g., school) to another (e.g., home). It is not just that the languages themselves are different (indeed, they may be the same), but, rather, the things we construct together through conversation and within a particular situation are different and meaningful depending on the context (J. Gee, personal communication, March, 2008). The long-standing home-school cultural continuity gap is not just one of culture but also of discourses. Viewed in this light, revitalization programs conducted within the school context can only be expected to be a partial solution to language revitalization. Without socially situated contexts in which to speak the Indigenous language, schools can only attempt to create a one-way bridge to home. Immersion schools are not designed to teach adults to learn to speak the language at home, and things like standards and expert curriculum knowledge limit the curriculum re-creation process, which is regulated by state control, unless it is a private school. An exception to this may be pre-schools or language nests, which could be designed to use home discourse

and have proven effective in bringing language into the home when used concurrently with adult language-learning classes (Peter, 2007; Wilson & Kaman, 2001). The issues of language fluency, use, and transfer within and across semiotic domains is partially rooted in the tensions expressed above that might be described as a fault line between second language acquisition and heritage language acquisition. An epistemological and design shift is needed—where the goals and purposes of design and material creation derive from, and are constituted by, the home and other informal domains.

If the goal of revitalization is intergenerational transmission in heritage mother tongues (Fishman, 2000; Hinton, 2009), how can technology and other materials be used to create or re-create discourses that could be useful outside of particular “school talk”? Two essential steps for creating materials for revitalization are to produce them in the community, making heritage language learners an active part of the process, and to capture language in context rather than to artificially construct language for teaching.

Reciprocity and Relational Epistemology

Language projects situated within an Indigenous community all have particular, community-specific protocols that focus on reciprocity and relationality. In this project, for example, this meant engaging with elders and traditional cultural practices and belief systems through appropriate community protocols. In 2005 members of the research team went to Jessie Clark, a respected speaker and elder, to ask him to speak about what we were trying to do with technology and language. We showed Jessie video clips on our computers and talked about everyday conversation. He had a close relationship with one of our team members and liked what he saw. We were given several steps to take, including, for example, feasting ancestors alive and passed as a means to show respect and to ask for help, after which we were to begin to organize the people.

The ability to ask elders for this kind of direction calls into play a culturally embedded practice as well as relationships within the oral tradition.³ The acts of engaging with elders and following traditional protocols establishes networks of meaningful relationships that serve as a form of validity. These are as valid as, and analogous to, peer review or checking references in Western scholarly research (Archibald, 1990; Dance, Gutiérrez, & Hermes, 2010). Framing the Ojibwemodaa! project within community implies reciprocity within relationships. This practice relies on the perspective of working in relation to the language as opposed to a relationship of domination or objectification (Moore, 2006). According to Nelson (2002), language is an integral part of the law of reciprocity, and it is because of this value that most Indigenous peoples resist the notion that languages go extinct. Languages are alive and dynamic; they change, evolve, adapt, grow, shrink, mutate (p. 3).

The idea that Ojibwe and all Indigenous languages are *alive* extends and frames language work in a way that is not possible when we only imagine that

our languages are dying or that language is simply academic content. In order to proceed with language projects, we start with an acknowledgment of that relationship and continue to remind each other throughout the collaboration of this grounding. This is done, for example, through humor, offering food and tobacco, leaving room for flexibility and spontaneity, or being ready to turn off cameras whenever an elder requests it. This framework of relationship and reciprocity is embodied in practices of inclusion rather than hierarchy and exclusion.

Documentation and Revitalization

Although fairly well defined within the Ojibwe cultural context, these ideas of reciprocity and spirituality are challenged when moving across cultural contexts. Actions stemming from reciprocity can bump into different priorities as dictated by linguistics, sometimes creating tension around priorities and decision making. For example, producing educational materials that are able to be distributed and consumed by learners immediately can seem to be in direct competition with approaches that embed documented conversations in sophisticated linguistic tools. In recording conversations for this project, the “documentation” perspective would drive us to record long conversations (one to three hours long), which then could take many hours to transcribe, annotate, and analyze. The more resources we devote to highly specialized transcription software and deeper linguistic analysis, the less time and resources we have for the creation of practical teaching materials, and the less accessible are the conversations for community consumption. The process of documentation and transcription specialization can systemically remove the language from use by community members, allowing only those employing high levels of academic discourse the ability to engage with knowledge production. In this instance, the revitalization perspective suggests recording shorter conversational videos (or ones that could be edited to around three minutes) more quickly and, basically transcribed, putting them into a user-friendly format and then distributing them immediately for use in classrooms or by learners.

Linguists, activists, and community members looking to create overlap between revitalization and documentation efforts have successfully found ways to traverse these competing priorities. By drawing on insights and tools from each perspective, these tensions can be strengths turned back into theory to redefine the fields of linguistics and second language learning. For example, more community members are receiving applied linguistics training, and more linguists are collaborating with speakers rather than simply using them as informants (see Francis & Gomez, 2009; Hermes, 2012; Hinton & Hale, 2001; Penfield et al., 2008). As researchers, teachers, and learners of Indigenous language engaged in the process of revitalization, we need to unearth and acknowledge points of potential disagreement emanating from different epistemologies and find areas of convergence and opportunities for collaboration.

In this case, we set goals for both documentation and materials production. Because our process was an iterative one, we quickly incorporated insights back into the design of materials. For example, we reconsidered the idea of recording *only* first speakers of Ojibwe. Heritage language learners, who outnumber speakers, were assigned an elder to work on recording long conversations to be transcribed for documentation purposes.⁴ Edited down, these same recordings were used to produce learning materials (including videos and flash cards for iPods). After a linguist suggested that *all* of the language generated at our camps was important, not just the fluent speakers within the same dialect, we started to record more broadly (Cowell, personal communication, July 2010) and to reconsider an earlier decision to produce materials that were exclusively done by those who learned Ojibwe as a first language. This is a prime example of how iterative processes in DBR methodologies enable and encourage innovative changes and particular insights into design considerations as processes unfold.

Younger voices, new uses, and ways of learning an endangered language became a living part of our language and so, too, did the documentation of it. Another example of challenging linguistic practice is about dialects. Second language-learning pedagogy generally advises against confusing beginning learners with exposure to different dialects, although in our case many fluent speakers are at ease speaking across dialects. The debate about crossing dialects continues, as first speakers of Ojibwe diminish in numbers and second language learners are forced to learn to bridge dialects. Some critical teachers even question the idea of dialect difference and ask if this has become a constructed boundary creating barriers for revitalization across different communities (M. Norri, personal communication, August 2008). Although the idea of dialects has been an important one in the linguistics discourse, the speakers we brought together easily communicated across these nuanced differences, leaving our software with a model that represents shifting dialects.

Living Relationships

In stressing living relationships, starting with the language itself and then extending to all of those who are involved in documentation and production, we run contrary to a framework of “expertise,” authenticity, and exclusion. We argue that when a relational epistemology undergirds design processes, evidence of reciprocal relationships, including the many and varied roles that people play, surfaces in ways like those described above. As a group involved in production, we started to question foundational ideas like “dialects” and wonder about the practice of valuing some speakers more than others. Treuer (2001) quotes an eloquent elder, Joe Anginguash:

Haa ganabaj giwanitoomin, ikidong, “Anishinainaabe-izhichigeng giwanitoomin.” Gaawiin ganabaj i’iw anishinaabemowin gayaabi ayaamagad. Mii go giinawind eta go.

Like I heard one old gentle man say “we’re not losing our language, the language is losing us.” (p. 156)

This quote illustrates the relational way of thinking—that the language itself is not just subservient to human control but lives beyond our control, and we are in relation to it. This shifts the dying/saving paradigm from one of victim/hero to one that is about a continually changing relationship, making clear that those involved in language revitalization have agency (see also Meek, 2011).

Ojibwe Movie Camps

We have discussed two different moments of revitalization; the immersion schools and cultural protocols—both of which informed our design decisions. We analyzed these to bring in relevant literature and extend this discussion beyond case specifics to more theory for Indigenous revitalization. At this point, we look at the specific process of making the material: designing, creating, and producing the content, at which point we examine the production process using the language of design research (Edelson, 2002). We discuss the emergent working principles for future designs and a learning theory about heritage language learning. This work can be thought of as working toward an ontological innovation (diSessa & Cobb, 2004; Sandoval, 2004), meaning the fundamental premises or underlying principles of the efforts shifted. For example, project principles shifted from language loss to living language, from documentation of fluent speech to engaging communities of meaning makers with variable mastery of language in processes, and from formalized content domains to discourses of home and informal life.

Since this is a reflection on the design process, not an evaluation of tool use (see Hermes & King, in press), we are not claiming that this is a traditional design experiment but, rather, the evolution of a design. We used an existing technological tool and platform,⁵ which we did not alter or redesign but adapted to include content in the Ojibwe language. We developed original content through a participatory community process, creating short videos with audio and rerecorded audio, transcripts and translations, grammatical references, and additional information about the language.

Making and Producing Meaning

The first constraint in the production process was coming to terms with the idea of language as content. Returning to the idea of socially situated language, the question shifted from how do we design content to how can we make and produce meaning together through the Ojibwe language? And how might this be expressed in learning material? Can we replicate or support conversations that move back and forth in context and the spontaneous meaning making that is everyday oral language in use? Gee (2004) writes:

No one would want to treat basketball as “content” apart from the game in itself. Imagine a textbook that contained all the facts and rules about basketball read by students who never played or watched the game. How well do you think they would understand this textbook? How motivated to understand it do you think they would be? But we do this sort of thing all the time in school with areas like math and science. (p. 21)

In foreign language teaching, the assumption that “language alone” is being taught, or even can be effectively taught without a sociocultural context, is widely questioned (see, e.g., Kramsch, 1993.) Larsen-Freeman and Freeman (2008) point out that when a target language “is framed as content, the dynamic nature of language as a ‘system’ is artificially frozen, and so, too, sometimes are the practices of the people who use it in teaching” (p. 163). Gee (2004) says that words are never learned alone in isolation from meanings and social practices; one can memorize the meaning of a word, but in order to use it in communication, a process of engaging what you know with how to use it must also occur.

In reframing our goal from *looking for content* to *developing a process* that would yield potential content, we were facilitating a cultural production, or a cultural event that would yield a product (Hermes, 1995). In other words, what kind of a process could yield a more contextual language, a more *living* language? In moving away from the conjecture of language as content to living in relationship with language, we were able to shift some of the previously described tensions around revitalization and documentation. Rather than selecting a predetermined content subject (e.g., hunting, beading, basket making) and translating language for that subject, we focused on the context of spoken everyday language. Through the movie creation process we moved to consider two overlapping and coexistent processes—revitalizing a particular spoken domain of Ojibwe while generating learning materials. We also reflected on how both of these processes might yield something more generative.

Inclusive and Participatory Processes

Embracing the idea of socially situated, everyday language, we used a participatory process that included more than forty-five community members over a four-year period to playfully re-create everyday spoken language situations. We held four Ojibwe movie camps in successive summers (2008–2010) and had smaller camps or gatherings throughout the year in order to create filming situations. After some failed attempts at scripting lines (elders don’t necessarily read Ojibwe, and scripts did not generate the kind of spontaneous conversation we wanted), we moved to semi-scripting. Throughout the weeklong camp, different groups of people tossed around ideas, usually until something humorous came up. Then, we translated these ideas into scenes. We described these scenes to the elders, who made changes and suggestions, sometimes ahead of time and sometimes during the filming. We captured the video using this semi-script as a guide, but people improvised, saying exactly

what they wanted to say, within this frame. In this way, we generated stories together, everyone had some input, and every time we filmed it was different. We believe what we were doing was not so much just generating content as facilitating a generative event. This format made it possible to position community members as producers of meaning while engaging them in language use in a way that was not replicating something predetermined.

These improvised movies became the content in the software, the transcripts of conversation populating all activities. Usually, in the production of the software in mainstream world languages, or even less commonly taught languages that are not endangered, these videos are scripted and enacted by actors. A source and translation file generates games, transcriptions, language grammar on demand, conversation and pronunciation practice, and the content for the electronic flash-card tool. In our case, our process was backward, as we improvised movies and then transcribed, checked transcriptions, and created source files to be rerecorded. Captured film and transcriptions later became the basis for an archive of the conversations project.

The process of collaborating in a camplike environment generated ideas for creating these movies, opening up space for more decisions shared through the group. In fact, we re-created the use of everyday speech domains at the camp, providing fertile ground for envisioning our semi-scripted events. We gathered together a small core of six to eight mostly Ojibwe-speaking people. The rest of the participants at our camps were community members, teachers, and learners at many levels, and all agreed to either keep quiet or stay in the Ojibwe language as much as possible. This created the feeling of a restored use of the Ojibwe language, made elders switch and stay in the Ojibwe language, and made for more opportunities for spontaneous joking and speaking.

This environment built on the language immersion camps, popular events that are sponsored by tribes and happen every summer throughout this area. These language immersion camps also attempt to re-create an everyday domain of use and help participants reimagine what it might be like to live in and through the language. But usually the sheer number of English speakers (most of the participants) keeps these language camps from being an immersive environment.

In our setting, where people camped and used Ojibwe exclusively, we captured enough video to later produce nineteen, three to five minute movies as the content for Ojibwemodaa! Throughout the year, transcribers returned to work with the elders in the videos to attempt to accurately transcribe and document conversations. Released in March 2010, there are now more than 700 copies in circulation. One study of home-based use found that participants were able to use the software, with some support, to increase spontaneous use of Ojibwe in the home between generations (Hermes & King, in press). However, as with other language learning software, the biggest obstacle still seems to be attrition (Nielson, 2011).

Retrospective Analysis

In this section we examine the production process at the Ojibwe movie camps to consider the potential needs and opportunities afforded by the use of a community-based design research methodology. Retrospective analysis allows us to connect the practical moments of understanding the problem in context back to literature and theory. In this way, insights gained from grappling with the problem of creating materials help us write theory for the larger revitalization movement.

Endangered language learners need to hear everyday discourse in order to relearn and use conversation. The opportunity to use technology to bridge this gap between speakers and learners can bring the few fluent speakers available into many different homes and provide a model of what spoken language could sound like.

The protean nature of technology affords us opportunities to be in relation with language and to create and re-create language domains. Technology and the representations embedded within them can become “living objects” (Turkle & Papert, 1990). In reflecting on relationships to objects, Wilensky (1991) writes that “concreteness is not a property of an object but rather a *property of a person’s relationship to an object*. Concepts that were hopelessly abstract at one time can become concrete for us if we get into the ‘right relationship’ with them” (p. 198). In this way, technology might allow language learners to enter into certain kinds of relationships with language that are not abstract but, rather, allow for concreteness and meaning making.

Historically, Western modern forms of science and technology have been used to colonize and dominate Indigenous communities (Deloria, Deloria, Foehner, & Scinta, 1999). This legacy of Western technological forms continues to be present in Indian country, and some scholars have suggested that technology and technology-based efforts in Indigenous communities are either implicitly or explicitly serving hegemonic functions (Salazar, 2002). Constructing effective learning environments will require that Indigenous technologies be engaged, valued, and nurtured rather than submerged under dominant technological hegemonies (Dyson, Hendricks, & Grant, 2007; Ginsburg, 2007; Salazar, 2007; Srinivasan, Becvar, Boast, & Enote, 2010).

Extending these ideas, we draw on Deloria and Wildcat’s (2001) reflections on indigenism, which Wildcat describes as:

a body of thought advocating and elaborating diverse cultures in their broadest sense—for example, behavior, beliefs, values, symbols, and material products—emergent from diverse places. To indigenize an action or object is the act of making something of a place. The active process of making culture in its broadest sense of a place is called indigenization. (p. 32)

Working between these two theories, we suggest that ours is an indigenizing project. Repurposing technological tools for language revitalization opened

spaces for the integration of Indigenous epistemologies and axiologies in learning materials (Bang et al., in press). In this case, we repurposed technological tools and objects—material creation in the service of language revitalization. In the movie-making process, events that were commonplace were reimagined, became sources of inspiration for transformative praxis, and the community reengaged as meaning makers and producers.

Indigenous Epistemologies

As discussed by Hermes (1995, 2005, 2007), the act of curriculum development and the pressure to create material products can be at odds with Indigenous epistemologies. Recently, Richardson (2011) has further explored the containment of Indigenous epistemologies. Design research may help us to shift Indigenous educational work toward a focus on process rather than on the product of curricular materials. In this case, we worked to understand how the process of movie making and a focus on language learning shifts our focus away from content- and object-centered analysis toward relationality and reciprocity.

Including Communities

This process also provides an example of taking curriculum (and knowledge) production back to the community level. In this way, the materials design project became a creative event involving community, not a static act of pulling language out of social context. Rather than trying to re-create culture, we were spontaneously creating, leaving room for story suggestions, and depending on improvised dialogues. We were intentionally reclaiming the “everyday” as culture, knowing that our aim was to produce something that would retain its fluid nature when put into the school context. As team members noted after we finished, the entire process could have been captured as a part of language documentation.

This process privileges community empowerment over production and marks a shift from communities as consumer to communities as producer. Theoretically, this also underlines the need to shift the paradigms away from approaching language revitalization and documentation as a process of resuscitation and hospice for a dying language (Amrey, 2009; Eisenlohr, 2004; Hinton, 2009; Mühlhäusler, 1996) and toward playful engagement and relationship building with a living language.

Guidelines for Design

The foundational shifts we realized through this process were multilayered. Once we realized language was treated as “content” in the school setting, we began to shift our thinking to the idea of language as alive and of ourselves in relation to it. We also questioned the idea of teaching and learning language exclusively in schools, looking toward informal education as more appropriate

for restoring language's use in homes. Approaching the production process as a community event where we used Ojibwe language meant that we re-created (at least temporarily) the everyday, informal speech domain that is not currently in use here. It meant that we were able to reimagine language being used all the time, aiming to re-create communication in Ojibwe as the norm.

Creating our own multimedia software for the Ojibwe language is an innovation that uncovers and simultaneously contradicts the highly political process of textbook creation and selection. Textbook creation has been something Native people have fought for long and hard, trying to identify and eliminate stereotypes, add multiple perspectives, or intervene in the textbook selection process (Cornelius, 1999). Much like the culture wars of the 1980s, misrepresentation and missing representations were on the front lines in the struggle to include and develop multicultural curriculum. We intentionally discussed and avoided representations or story lines that appeared frozen in time, used seasonal activities, romanticized our culture, or retold traditional wintertime stories. We talked about appropriating and creating modern variations on stories, having elders engage in very contemporary or funny things together and focus on common activities, not specialized skills or traditional practices.

In this article we argue that a community-based design research methodology that engages teachers and community members in the production and generation of learning materials moves toward integrating the levels of classroom, content, and pedagogy. We believe that this process of praxis is another step in reclaiming the classroom level of teaching and learning for Indigenous children (Smith, 1999). Indigenous scholars have suggested that part of what is required in moving toward self-determination will be the reclaiming, uncovering, and reinventing of our theoretical understandings and pedagogical best practices at the classroom level (e.g., Battiste, 2002; Bang, 2008) and at community-level events, as we have suggested here. Borrowing from Edelson (2002), we ask: What kinds of lessons can we learn from the design process in DBR?

In challenging or innovative design, these decisions can be complex and as Schon pointed out, interdependent, requiring extensive investigation, experimentation and interactive refinement on the part of the designers. In these cases, the designers inevitably acquire substantial new understanding. (p. 108)

As we have argued, language is not content. Our epistemological foundations are deeply embedded in our languages; that is the core of what constitutes knowledge, knowing, and being. If language revitalization efforts approach language as content, while we may generate more adult speakers with proficiency in limited domains, we have little faith that our languages will be revitalized. It remains an open question whether—and, if so, how—the content of language revitalization efforts has been driven by this history. In our opinion, the epistemological underpinnings of formal education nation-

wide remain largely intact in most educational efforts even when they appear different, undoubtedly because the agenda of formal education in relation to Native people (and the economics and policies that unfold from it) remains fundamentally unchanged.

Conclusion

The need for more generative theory for language revitalization cannot be overemphasized. The call for language revitalization began in discourses fraught with colonially imposed narratives of Indigenous loss of authenticity and has sent our communities into crisis modes. This loss narrative has fueled the documentation approach to language preservation. Documentation has been the territory of anthropologists, where language becomes fetishized or fossilized. This approach has no theory of change that is of benefit to Native communities. It is up to communities to retool documentation efforts toward productive regeneration in communities. As we have described, moving to revitalize our languages and seeing them as living can open up creative possibilities for communities, rather than generating only preservation efforts. Skutnabb-Kangas (2008) argues that the problem with the idea of language death as a natural phenomenon glosses over the entire social political history of empire building that has given rise to a “no contest” choice to retain and use Indigenous languages. While we embrace thinking about our languages as living, both of these approaches (life or death) leave us in dichotomized territories that keep us in a polarized dialectic with colonial narratives.

The discourses of language genocide remain a crucial dimension of understanding the unfolding impact of colonialism on Indigenous peoples. The lived experience for Indigenous children is akin to forced assimilation and linguistic servitude, the hegemonic power of monolingualism appearing to make the loss of the language the fault of the subjected. While there are communities in which English has not claimed ownership, in many of our communities, children and families have no choice about the language they use in everyday speech.⁶ School, work, and the majority of our routine daily practices occur in the English domain. Deeply embedded in these practices are epistemological foundations in the service of the nation-state.

Revitalization efforts like the ones we describe in this article can and should intersect with documentation practices as well as immediate community-based materials production and distribution. These efforts begin to prioritize language in the home domain, not solely in schools, and strategically offer a contradiction to the deficit-victim narrative. In this way, the case of Indigenous language revitalization is a microcosm of schooling at large, fundamentally challenging assumptions about knowledge creation and production that have limited the scope of whose knowledge is produced and reproduced in schools and communities.

Notes

1. See Cotter's (2002) review of *Irish Now!* for a technical and descriptive analysis of the same software used in the making of Ojibwemodaa!
2. Approximately 3,000 of the world's 7,000 languages are currently spoken by fewer than 10,000 people (Maffi, 2011). See Krauss (1998) for a detailed analysis of loss or Maffi (2005) for a detailed review of world Indigenous language loss as related to biocultural diversity.
3. Research in Indigenous communities often begins with having a place or relationship within the community so the elder can place the researcher in terms of land/physical place or relationship to people he or she knows. So while not necessarily a blood relation, the researcher is somehow "known" or placed within a network.
4. Although assigning advanced learners to transcription was a more time-consuming way to transcribe the conversations, it was an invaluable language learning opportunity for the participants. This work is supported by a generous grant from the National Science Foundation, DEL grant number 0854473.
5. The language learning software was provided by a company called Transparent Language, which partnered with the Indigenous nonprofit Grassroots Indigenous Multimedia in order to create Ojibwemodaa! (Hermes, 2010).
6. Maffi (2003) notes that this is not a *real* choice, as if there were equal and competing options. Choosing to devote intellectual capital to an endangered Indigenous language invokes power and privilege when there is not enough wider social economic infrastructure to support this choice. When Indigenous people have seen their means of subsistence replaced with a cash economy that is a fragmented kind of labor not associated with place, land, or culture, the "choice" to use an Indigenous language for communication and cash-related work is often not a real option or choice at all.

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