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What is This?

Enacting Decolonized Methodologies: The *Doing* of Research in Educational Communities

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Abstract

Indigenous scholars have debated the impact that researchers and the act of researching have on Native and Indigenous people and communities. Although literature on this subject has grown, little has been written explicitly laying out *the doing* of research with these communities. The authors seek to articulate their *doing* by drawing upon the essential research principles and standards set by scholars. The authors seek to examine their work as education researchers in three different international contexts—Kenya, Cambodia, and "Indian country" in the United States—highlighting research practice shaped by context, relationship, and discourse emergent in their investigations of schooling, language revitalization, and scientific knowledge access. The authors reflect, analyze, and summarize their actions of decolonizing research that were present or particularly challenging cross-culturally, in each context. Examples of common action in the projects include relinquishing control, reenvisioning knowledge, cultivating relationships, and purposeful representation of communities. Finally, the authors connect their actions to the principles and standards set by scholars and discuss lessons learned.

Keywords

decolonizing methodologies, cross-cultural partnerships, Kenya, Cambodia, American Indian communities

In this article three educational researchers examine the doing of research in three different Indigenous contexts, Kenya, Cambodia, and Indian country in the United States. While working together to understand the complexity of the insider–outsider debates regarding Indigenous education and decolonizing research, we found it necessary to critically examine our own challenges within our respective research contexts. The purpose behind our investigation and study of our individual research processes, we believe, will highlight the difficulty of reaching a perfect state of collaboration, ownership, and contribution to those we study. Moving away from examining the data of the context to examining the research processes enacted within those contexts is our purpose. As we worked to reflect and analyze particular research movements in the form of vignettes, we hope to contribute to a much-needed discussion of the complexity of enacting a decolonizing methodological approach. Each context or location—Kenya, Cambodia, and Indian country in the United States—has Indigenous populations powerfully shaped by colonizing acts. Participants and collaborators, from each context, have been affected by such colonizing acts, and therefore, a decolonizing methodological framework is appropriate for analyzing our research acts.

Practices of Conducting Decolonizing Research

Indigenous scholars have discussed, debated, and critiqued the impact that researchers and the act of researching have on Native and Indigenous people and communities (Lomawaima, 2000; Mihesuah, 2003; Mihesuah & Wilson, 2003, 2004; Mutua & Swadner, 2004; Smith, 1999; Swisher, 1998; Wilson, 2004, 2008). Drawing upon scholarly and political discourse from critical and postmodern theories emerges the notion of examining research methodological acts within the context of Indigenous communities as a conscious act of decolonizing methodologies (Mutua & Swadner, 2004; Smith, 1999). According to a number of scholars working with Indigenous communities, to decolonize methodology means "unraveling the long history of

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colonization and returning well-being to our people" (Wilson, 2004, pp. 70-71). In critically examining purposes of research, Wilson suggests that by returning to "the roots of our traditions" researchers can help identify a "new liberatory framework for the future" (p. 70). Inherent in the critiques of research *on* Native communities and people is the notion that oppressive actions and ideology have been inflicted on Native peoples and that addressing, resisting, or rectifying that oppression is what is needed. There is a particular perspective of historical understanding that is required to move to the next step; that is, it seems that one must first accept this telling of historical oppression and its relationship to research process and research knowledge produced (Swisher & Tippeconnic, 1999). In the same vein, who gets to tell the stories of Indigenous communities is a major issue of our times (Cook-Lynn, 1996); such questions have drawn clear dichotomies between insiders and outsiders.

Although literature has grown in the area of articulating the problem of research on Indigenous communities, little has been written explicitly laying out *the doing* of research with Indigenous educational communities. Brayboy and colleagues' (Brayboy, McKinley, & Deyhle, 2000) article, "Outsider-Insider: Researchers in American Indian communities," is an example of needed discussions of *the doing* of research; they contribute to research discussions focusing attention on the inner dialogue, tensions of method, and cultural appropriateness of researchers working with American Indian communities. In their examination they question traditional research methodologies, tools of analysis, and reporting of findings—distinguishing the complexities of conducting research affected by the insider–outsider duality. The unit of analysis in Brayboy and colleague's article is the researcher's position and the tools of research.

Much of the scholarship has focused on critiques of research methodological and intellectual paradigms (Cook-Lynn, 1996, 2001; Grande, 2004; Mihesuah, 1998, 2003; Mihesuah & Wilson, 2004; Smith, 1999) and conflicts of knowledge systems (Benham, 2008; Deloria & Wildcat, 2001; Nee-Benham & Cooper, 2000; Wilson, 2008). With these generous works in mind, we are invested in focusing our analyses of our research stories on the practices of documenting and understanding Indigenous educational work in action. In the same approach and spirit of Mutua and Swadner (2004), we seek to move toward a liberatory path "leading toward a decolonizing space for research" with Indigenous educational communities (p. ix). We take Abu-Saad and Champagne's (2006) lead in viewing education as spaces and sources of strength, and we agree that "education can support strengthening individuals, families, and communities if it includes indigenous knowledge, values and methods of empowering indigenous communities, preserving their cultures, and building their capacities for the future" (p. 10).

What makes a research act a decolonizing act of research? What does enacting decolonizing methodology entail? What processes are involved? Scholars conscious of the damaging impact of research on Indigenous communities know that entire research paradigms and processes must be interrogated (Deloria & Wildcat, 2001; Smith, 1999; Wilson, 2008). Angela Cavender Wilson, Lakota historian, suggests Native researchers enter the academy with the "hope that our skills and research will contribute to bettering circumstances for Indigenous people" (Wilson, 2004, p. 68). She notes that finding our own particular values and methods and style peculiar to us is an important step in reclaiming Indigenous knowledge (p. 70). Wilson, calling upon Wilma Wheeler, states, "Decolonizing offers a strategy for empowerment: 'A large part of decolonization entails developing a critical consciousness about the cause(s) of our oppression, the distortion of history, our own collaboration, and the degrees to which we have internalized colonialist ideas and practices" (p. 71). The act of internalization of "colonialist ideas and practices" in the research act harkens back to Lakota literary scholar Elizabeth Cook-Lynn's (2001) point about writers'—both Native and nonnative—production of knowledge in texts that primarily seek the "acceptance of a mainstream readership":

> The writers of Anti-Indian texts have been numerous and popular, and today, even Indian writers have joined the producers of these texts. They have done so either wittingly or unwittingly, for one reason or another, but surely a significant reason has been to gain the acceptance of a mainstream readership. (p. 4)

Cook-Lynn's statement raises for us the notion that movement from colonized to decolonized intellectual work implicates both insiders and outsiders engaged in intellectual projects with Native communities. The process of the decolonizing project is to recognize the implicit processes of knowledge production, and the legitimization of that very knowledge produced, and to prioritize research benefits to tribal and Indigenous communities. Wilson makes reference to Taiaiake Alfred's work in which he states that scholars hold a responsibility to create and sustain "social and political discourse that is respectful of the wisdom embedded within our traditions; we must find answers from within those traditions, and present them in ways that preserve the integrity of our languages and communicative styles" (Alfred, cited in Wilson, 2004, pp. 71-72).

We learn that the decolonizing act includes explicit positioning of social and political discourse that demonstrates understanding that Indigenous peoples hold knowledge in their traditions and that enacting those very traditions makes knowledge sustainable. Needless to say, there are strong rationales for conducting research that focuses on "rebuilding energy needed in our communities," and making change,

and moving us beyond sheer survival to become "a means of restoring health and prosperity to our people by returning to traditions and ways of life that have been systematically suppressed" (Wilson, 2004, p. 71). We note the majority of the decolonizing project place Native and Indigenous peoples (researchers) at the center of this work; however, decolonizing projects—if they are to be sustained—require political and intellectual allies working together to generate continued dialogue in cross-cultural contexts. Decolonizing research processes and purposes rests on the foundational notion that we ask how research will ultimately benefit Indigenous community's intellectual survival, social processes, and political structures. How we conduct research to achieve insight into these essential areas of knowledge or processes we—as researchers—are willing to place under the scientific microscope to be examined herein.

In this article we seek to articulate our *doing* of educational research drawing upon the principles and standards scholars have expressed that are essential in the work of conducting meaningful educational research. We seek to examine our work as education researchers in three different international contexts—Kenya, Cambodia, and Indian country in the United States—highlighting research practice shaped by context, relationship, and discourse emergent in our investigations of schooling, language revitalization, and scientific knowledge access. As a person new to Kenya, I (Nicole) needed to be purposeful about reflecting back what I was observing to local people with whom I was building connections, to ensure that I was not misrepresenting what I saw. By examining our own research methodological journeys and developing research perspectives in action, we hope to contribute to complex scholarly discussions of cross-cultural research more broadly, while specifically engaging in discussions of purposeful research with Indigenous education and learning communities across international contexts. Mapping a common ground between educational practice and *the doing of research* with Indigenous global communities is needed.

Decolonizing Methodology: Examining Enactments of Research Process

In this section, we discuss the nature of the Indigenous knowledge in each context, the tools of methodology we employed to document this knowledge, and importance of understanding the connection between Western modern science and practices of teaching and Indigenous knowledge in these contexts. Within each vignette, we describe general research methods employed to gather data and to contextualize the research projects as examples of decolonized research projects that include the following:

- Direct observation
- Informal interviews
- Photography
- Focus groups with students and teachers

By enacting decolonizing methodologies, we are not proposing a new data source, rather a decolonizing methodological process or framework to collect this data. Although the roots of these methods are connected to research performed with Indigenous communities, they are not specific to Indigenous communities. It is our hope by providing researchers with examples of how we enacted decolonizing methodologies in three distinct communities; we will demonstrate to researchers how to examine and enact this type of work in nonindigenous contexts as well. Because all of this research was conducted in cross-cultural situations, we hope to encourage the use of these methodologies to document the knowledge of people that will lead to critical conversations that will inform education and promote decolonizing ways to contribute to these conversations. Each of our contexts was uniquely cross-cultural, with both Indigenous and nonindigenous influences. For example, although Eldoret is a growing and bustling urban area, with a mix of ethnicities, the traditional Kalenjin culture is still present and deeply important to people there. A billboard on one side of the road for a cellular phone company features images of Kalenjin milk gourds, whereas one on the other side of the road a local hotel with owners of mixed ethnicity shows a famous local distance runner waving, with the words, "Kwaheri, Rudi Tena" (in English, "Safe travels, Come again").

As researchers conducting research in Indigenous communities, it is important for us to find our own particular values, methods, and style (Wilson, 2004). However, guidelines do exist. By following Swadner, Kabiru, and Njenga (2000) guidelines for conducting research, the majority of our research focused on collaboration during all phases of this study. Another critical piece to enacting decolonizing methodologies is that it serves a purpose in the communities in which research is conducted. In this way, the research is local. By local, we mean to include an evolving idea of the culture. This is important because, as our vignettes document, there is a blending of Western modern science, the practices of teaching, and Indigenous knowledge. In these communities, they cannot be completely separated, and therefore, at times it seemed as if Indigenous knowledge is no longer unique—it is a part of Western modern science and the practice of teaching.

Putting Our Research Examples to Work: The Doing of Research

In the following examples of *research doing*, we seek to show how what we do and think while conducting research

is an act of putting our decolonized methodologies to work. Nicole, having taught in a diverse Southwestern U.S. community, had noticed how excluded *multi*sciences are from science education and sought to find the root of *multi*science in Eldoret, Kenya. Cassie, a U.S.-born science teacher who taught in Phnom Penh, Cambodia, for several years, became a science educator because of her work in this setting and wanted to return to Phnom Penh to document the successes of this place. Tarajean, a Native educator and researcher, has worked with teachers in a number of communities, including three tribal nation communities. Her work began with an interest in documenting efforts to incorporate Indigenous culture, knowledge, and language in classroom instruction. As we analyze each vignette we provide explicit ties back to the methodological discussion contributing to literature on conducting research within Indigenous communities. We examine the practices within distinct research projects to show evidence of our awareness of the impact/imposition/interpretation of our research projects. We have learned through this reflective analysis that enacting a decolonizing methodological approach is a dynamic process; therefore, what we share in this article provides a moment of examination and analysis within ongoing educational research inquiries.

Three Vignettes: What Is the Researcher Doing?

The following are our three vignettes that provide examples of how we enacted decolonizing methodology. Each vignette provides a cross-cultural story of what the researcher was doing in each setting. Our vignettes are linked by a common theme: the source of Indigenous knowledge. Although the sources in the three vignettes are different (place, survival, and uniqueness of knowledge), they help to answer the question, "What is the nature of Indigenous knowledge?" In addition, we provide a methodology section that focused on what are tools, hidden processes, and preparation that we employed during our studies. By distancing ourselves from the colonizing legacy that research holds, we enacted decolonizing methodologies. We agree with Mutua and Swadener (2004) that decolonizing methodologies is a "messy, complex and perhaps impossible endeavor" (p. 7). Yet we attempt in the following section to describe the way we conducted this research because we believe it is worth pursuing.

Vignette 1: A Desire for More Than "Sightseeing"

> Me: Jason and I are going to Kenya this summer. He is going to work at the teaching hospital there, and I a wrote a proposal to do research there, an ethnography of place. I want to see how aspects of the place of Eldoret make their way into science education there.
>
> Grandpa: What will you actually be *doing* there?
>
> Me: Well . . . I'll be doing a lot of observing and writing down notes, taking a lot of photographs, talking with people and teachers in interviews . . . those are a few things . . .
>
> Grandpa: [pause] Hmmmpf . . . that just sounds like sightseeing to me. They're paying you to do that?!

The verbal exchange above was part of a phone conversation between my grandfather and me. I did not have a satisfactory response to defend the relevance of my work. It also makes complete sense to me why a person who worked hard, manual labor in a factory for the majority of his working years would think what I am doing there "sounds like sightseeing." Yet I wish not only for my family to see my work as relevant and important but also for my work to actually be relevant and important to science education. Most important, I want to move beyond research that is simply a "traveler's tale" (Smith, 1999) and generate understandings for the people in Kenya who I work with that will be useful to them.

I truly believe that place-based education has great potential for promoting equity in science education. It can do this through grounding learning in local phenomena and students' lived experiences and the valuing of mulitscience or multiplicitous forms of science knowledge. Through doing so, we may also create space for the generation of science that incorporates *multi*knowledges. As an example, Gitari (2006) observed families in his childhood community, documenting their forms of traditional knowledge about health and healing, paying close attention to how that knowledge is transferred. He then examined the Kenyan secondary biology syllabus for this knowledge, seeking for incorporation of this multiscience (Gitari, 2003). Entering the community as an outsider raises concerns about how much knowledge one should have about the community, the people, and the institutions of a particular place. In October of 2008, as I was preparing for the project in Eldoret, these are some of the thoughts I grappled with:

> Eldoret, or even Kenya generally, is not a place I am familiar with personally. That I entered the community of Eldoret as an outsider is a strength in that all that I observed was unfamiliar. In this way, I was able to ask questions about the taken-for-granted realities in Eldoret that an insider may not see. (field notes, October 2008)

As I am a person who was raised in a Western paradigm and trained in science in Western institutions, I am at risk to being blind to many non-Western conceptions of science and ways of knowing. If my goal is to understand the
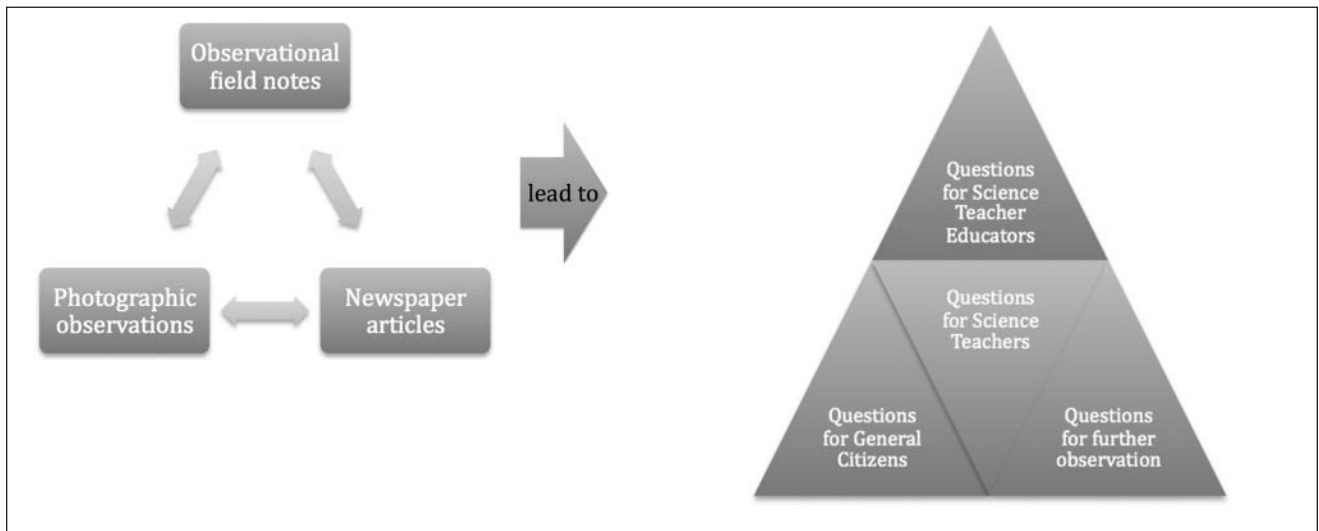
Figure 1. Visual graphic example of data chains

meanings that people in Eldoret hold of their place, I need to continually decolonize and indigenize my mind (Smith, 1999). To decolonize my mind, I will need to examine lives, society, and institutions in ways that challenge dominant perspectives. To indigenize my mind, I will need to center the landscapes, images, themes, metaphors, and stories in Eldoret to understand their conceptions of science and place. It will also require that I enter the community in a culturally sensitive manner, preparing myself by learning about the norms, customs, and concerns of people in Eldoret.

Eldoret has a rapidly growing population, a rich representation of ethnic diversity, and represents a blend of traditional and contemporary ways of living. Nonetheless, the Indigenous, or traditional, heritages are deeply embedded and important in the community. These characteristics are true of many places currently; the rapid changes and rich multiplicity are true of places everywhere, which make Eldoret a salient location to conduct this ethnography of place. It is also a place where hundreds of nonprofit organizations plant themselves because of the perceived "lack"' of the communities, and there is a legitimate concern for the welfare of the people and environment there, which is threatened by poverty, low attainment of education, health afflictions, and so on. Too often, the concerns and perceived deficits of these places become what we choose as the focal points. In doing this, we ignore the remarkable strength and resilience in these communities and risk victimizing them. I instead want to illuminate the community's rich resources, not in a way that denies their complexities and romanticizes them, but for the sake of identifying the meanings they attach to their special place.

Methods for Capturing Indigenous Knowledge

The methods used in decolonizing or Indigenous research are not specific to it, but rather, what makes them decolonizing or Indigenous may be the intent or mindfulness taken when practicing the methods. Ray Barnhardt's discussion of the influence of John Collier Jr.'s (2007) photography on Native Alaskan education may serve as an example. Collier, whose gift was in capturing knowledge through visual material, was one of the first ethnographers to use film in examining Alaska Native school dynamics. As Barnhardt describes, ". . . his analysis of the film had the effect of shifting the burden of responsibility for addressing Native students' school failure from the student to the institutional environment that established the conditions in which the failure occurred" (Barnhardt, 1999, see referenced website). The method of photography and film are not exclusively decolonizing or Indigenous, but, as this example illustrates, it was used in a way that functioned to decolonize.

A Realized Example

At the end of my third week in Eldoret, Kenya, I am able to reflect on how data chains are working *in vivo* in the field (Pryor and Ampiah, 2003). Figure 1 illustrates a visual graphic of the data chain I am enacting in the field.

My data collection began with direct and participant observation at various places in Eldoret Town and the surrounding areas, as well as nonprofit organizations, with which I became involved. These were at first written

observations that led to photographic observations. Some of the photographic observations also led to written observations. During some of my first observations, which were solely written in Eldoret Town, I noticed the prevalence of newspapers and, in particular, the high volume of reading (at least among men), purchasing, and exchange of the newspaper, *The Daily Nation.* So I began purchasing *The Daily Nation* and examining it for articles related to education, place, or environment, particularly when the Eldoret or surrounding regions were of focus. These formed a triad of data in which each segment was informing the other. For example, I reflect my reading of the newspapers back to my Kenyan counterparts' to get their perspective. Now that I am shifting into interviews, the themes that emerge from situational analyses of these three forms of data have generated further questions for interviews and further observations. Figures 2 to 4 and Table 1 include actual data that illustrate this connection.

Box

15 June 2009:

They both were discussing dependency issues, and Mary was talking about how irresponsible people can be with their money. She said, "They have a good production from their crops, and where does that money go? See all these fields, they are all wheat . . . where does it go?" Then, the Information Sciences professor was talking about how there is a lot of money in Eldoret because of the crops; it is a very productive area, as Mary conferred. Some of the crops they mentioned were wheat, maize, and dairy. These are mass crops, as opposed to the other crops you see in the market, ones that are smaller amounts. . . . Mary started talking about the ethnic group that is in that region; it used to be a nomadic group that, once the university was established, began to see the benefits of settling, and then got into crop production and became wealthy. Then the professor in the back conferred this, and told a story of some of these elders asking for assistance in the bank; I think though that this happened around 15-20 years ago. So an elder asked him to find out the balance in his account, and he found out for him, and it was somewhere near 40 million KSH, which is a lot of money (over half a million U.S. dollars). Then, the elder asked him to fill out the form for a withdrawal, and offered him 20,000 KSH for his services. Mary exclaimed, "Can you imagine!? That was a lot of money back then . . . our salary wasn't even that much them." Then they talked about how happy he must have been, and how it was nothing to him. But the professor said, "But he lived in a mud hut."

Figure 2. Illustrative Data From the Field that Shows Data Chain Connections
Observational field notes and informal interviews

Figure 3. Maize/soy plot (June 21, 2009)

Vignette 2: Relationship and Generating Purposeful Research

In entering the academy most of us hope that our skills and research will contribute to bettering circumstances for Indigenous people. (Wilson, 2004, p. 68)

I share Angela Cavender Wilson's hope that, for those of us in the academy, we make important contributions to Native education by bettering cultural, social, and political circumstances. I put my "skills" as researcher to work in the study of teacher knowledge in Native education classrooms. I use systematic qualitative methods to document teachers' knowledge about creating, developing, and sustaining a Native language program. It's now been 4 years into my inquiry, and only just recently did I feel movement in my relationship with the teachers, especially with one elder of the program.

Each time I visit the immersion program, I have the opportunity to talk with the teachers as a group. All the teachers are invited join these instructional conversations. In these sessions, I would prepare some reflections on what I am learning about their work and the program and share with them questions about their instructional practice. I also bring books written by Native scholars that will contribute to their professional development as Native teachers working in the field of Native education. The gifting of educational and scholarly works was a result of my first visit to the school when a teacher indicated that she wanted to know what has been written by educators about language immersion or language instruction. Other Native teachers in the program indicated that they do have access to educational books that can inform their work as teachers. So the routine of gifting books to the teachers began—I started with my favorite books on Native education, general overviews, and
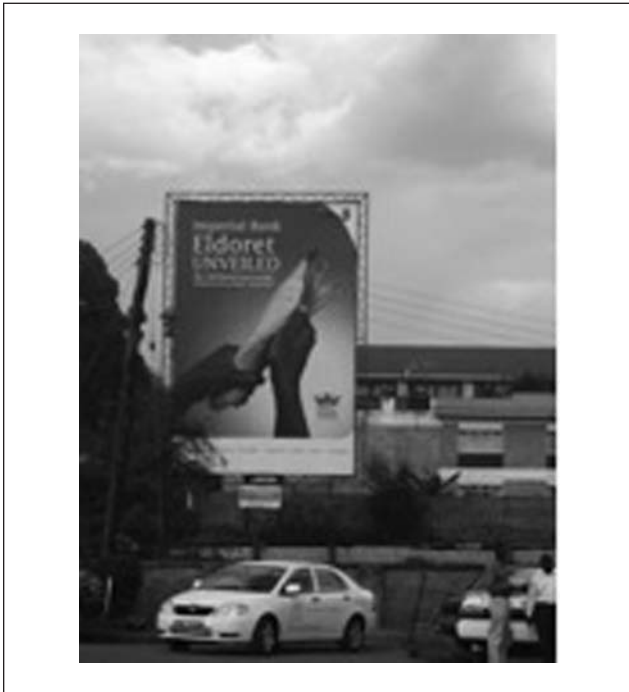
Figure 4. Billboard for Imperial Bank (June 26, 2009)

Table 1. Excerpts From Newspaper Articles[a]

NO END IN SIGHT FOR CROP FAILURE: ARID AND SEMI-ARID AREAS MAY SOON BE UNABLE TO SUPPORT FARMING, SAYS INSTITUTE	HUNGER THREATENS TO SHUT 17 SCHOOLS: LEADERS APPEAL FOR FEEDING PROGRAMME TO RETAIN PUPILS
By: Gatonye Gathura	By: *Daily Nation* Team
"Life in Kenya's famine-prone fringe areas will get worse with total crop failure within the next four decades, according to a new study. The study carried out by the International Livestock Research Institute says drought-tolerant maize and even the much more resilient millet will hardly survive hotter weather and rainfall shifts in the areas. It advises policy makers and residents to think of promoting the rearing of hardy livestock breeds."	"The fate of more than 6,000 pupils hangs in the balance due to the government's delay in reintroducing the school feeding program. Many families have moved away in search of food and pasture for their animals."
	". . . there is a severe shortage of cereals [maize] and water following total crop failure due to prolonged drought over the past three years."

then moved to political and social critiques of educational systems in which Native children are schooled.

When I would return for the next visit, one or two of the teachers was sure to mention specific ideas or knowledge from the books that were particularly important in shaping her thinking. One teacher mentioned, "That book you provided last time on Native history was really interesting. I want to share a copy of it with my sister-in-law, might you have another copy?" The availability of these books by Native scholars is important to these teachers, as they have an opportunity to see their work in the context of a larger educational context and plight for equity in education for Native communities. They notice that their work is unique—they are working in a Native-controlled language immersion program, not public education, "Our work is different than what happens in public schools." Another asked, "What are other Indians doing to save their languages? Are there others, other than Hawaiians who are doing language immersion?" These questions have led me to search for additional research to share with the teachers about what other tribes are doing to revitalize Native language. Together in our instructional discussions we notice that most of what is written about language immersion is about why do it, and now about how.

These important discoveries are evidence of the teachers' intellectual engagement—engagement focused on their pedagogical practice and articulation of their instructional challenges. In January 2009, we focused on exploring children's literature, a recent topic requested by a few of the teachers. In this session, a colleague conducted a workshop on how to write your own children's books. Her work developing a bilingual text in Lakota and English was captivating for the teachers. The teachers appreciated my colleague's work—generating a book for Lakota teachers to use with children exploring identity, racism, and integration back into reservation life. Our presenter brought her book as a sample text, showing these teachers that they too can create their own books based on their keen observations of social and cultural issues surrounding their local community. Each teacher was provided a copy of the workshop booklet, which detailed steps for developing their own books.

The need for rich stories and written text in their Native language is evident. Currently, in these classrooms, the books available are generally sight-word texts, vocabulary-building texts, or picture books. This workshop was an opportunity to spark a new challenge for the teachers, to develop and publish their own children's stories, in their language. Our instructional discussion ended with a sharing of the potential stories the teachers would like to develop over the next few months. Working in pairs they thought they could do a better job; one teacher states, "When I work with [names kindergarten teacher], I get ideas that I would not have on my own, and also she knows words that I don't

know." The group of teachers decide that they will work together to generate initial story lines. One pair discussed the idea of a book that addresses conflict resolution, another pair thought about a book on women's roles, and yet another pair thought about a story about kinship. One pair were not quite sure where to start their story, so they thought their book would be about them fighting about what to write about. Our presenter encouraged them to continue to develop rich stories, with details, and to think about age-appropriate stories that will catch the interest of their students. If the teachers are not given books they want and need, they can certainly begin to write their own!

As the session closed and teachers began to filter out of the conference room, an elder stopped to say, "The work you are doing, the work with the teachers, is good." The elder nods her head at me in praise and leaves me in the empty room. Her words are important—these are words indicating the beginning of a developing relationship of purposeful work. It's been 4 years, and this is the first time she has spoken to me. All other times, she seemingly avoided conversation with me, even as I walked the halls of the program. I have never been to her classroom, nor have I interviewed her, but all the teachers at this school look to her for guidance about language and cultural knowledge. It is clear to me, and to the other teachers, that her participation is critical. Although she was initially invited to participate in this research project, she chose not to participate. Today, 4 years after the beginning of this work, I am excited to hear her words and praise because her presence is important to the culture and language revitalization efforts. My greatest hope is that the work we do together will positively shape these teachers' instruction with their next generation of Native-language speakers.

Discourse within mainstream research privilege attempts to create distance between the researcher and participant, which is crucial to gathering valid data. My work with Native teachers has countered the method of distancing and reified the need to take time to establish authentic relationships with teachers. Rather than forcing the development of the relationships, I have learned to seek opportunities to share with teachers my own knowledge in an effort to make contributions to their intellectual work as teachers. When the relationship between me and the teachers is allowed time to develop, the knowledge gained in the end will be strongly shaped by the expertise of elder and novice language teachers. The research can truly inform their questions and next steps rather than being another sterile observation of instructional delivery.

Vignette Three: Importance of Context: The Struggles, Strength, and Survivance of Cambodian Masters' Students

In enacting decolonizing methodologies, context shapes the questions the researcher asks. Unfortunately, in my experience as a science educator, I have been told to remove the context from my stories because "it is not needed to understand the research question and distracts from the methodological issues." In this vignette, I describe how context shapes every aspect of the research and is critical to enacting decolonizing methodologies: the question I am studying, the questions I ask the students, and the questions that remain unanswered.

Context

In the summer of 2008, I returned to Phnom Penh, Cambodia to work with the Royal University of Phnom Penh (RUPP) on a translation study. It was the first time I returned to Phnom Penh since living there with my husband and son. This time I was traveling alone, leaving my husband and my, now, two sons at home. Although we wanted to return as a family, I received only enough funding to cover my expenses. I was eager to be involved in this project because it highlighted the good work that was going on in Cambodia. I was frustrated only hearing the negative events reported from this country. Cambodia is a country full of survivors—*literally.* Between 1975 and 1979, when the Khmer Rouge and its leader Pol Pot attempted to create a primitive form of Marxist communism, they caused severe destruction to Cambodia (Savin, Sack, Clarke, Maes, & Richart, 1996). Although numbers are extremely hard to calculate, the Khmer Rouge executed at least 20,000 people. Estimates of the total number of deaths resulting from Khmer Rouge policies, including disease and starvation, range from 1.4 to 2.2 million out of a population of around 7 million (Jackson, 1989). After the defeat of the Khmer Rouge it was estimated that there were "no more than 300 persons who had post-secondary education remaining in Cambodia; and most of those left the country as soon as they could" (Sloper, 1999, p. 7). The people who now live in Cambodia are either the survivors of the Khmer Rouge, the children of the survivors of Khmer Rouge, or those who were able to flee the Khmer Rouge and are now returning to Cambodia. The reminders of the destruction are not just in the stories *of* people—they are the stories of *these* people. These are people who do not know their own birthday because Pol Pot renamed the year the Khmer Rouge took over, "Year Zero" (Lunn, 2004). In this way, it is common for people in their mid-30s to state their age as "about thirty years old," not because they are being elusive about their age but because they are estimating it as they truly do not know the year they were born.

In 1979, RUPP was in ruins, having been looted and then abandoned for more than 4 years (Howes & Ford, in press). Despite this history, higher education is now widely available in Cambodia. One of the difficulties now facing the university is that Cambodian students are reliant on textbooks in English since texts in Khmer, particularly on technical subjects, are not available. Countless Khmer science texts were either lost or destroyed during the Khmer Rouge

regime. This loss of so many educated Cambodians, in particular scientists and faculty members, as well as many Cambodian scientific/technical words makes the educational situation in the country even more challenging (*Royal University of Phnom Penh Handbook*, 2011). However, RUPP is beginning to translate science texts back into Khmer. It was my job to highlight how the teachers were completing this task. What I learned from this trip was more than information on how teachers were completing this arduous process but how the students were struggling with a way to access this Western modern science.

During my stays in Cambodia, I am always struck by the strength, the struggles, and survivance of Cambodian people. It was my hope that, by using decolonizing methodologies, I would provide these students with a time to describe the struggles they were having in school and document the strength of these survivors. By creating this space in which they could describe their struggles, strengths, and ultimately their survival, I enacted decolonizing methodologies. Swadener, Kabiru, and Njenga (2000) provide guidelines for enacting decolonizing methodologies. These guidelines encourage collaboration during all phases of study, including activities that involved spending a great deal of time in the cultural context—both in longer-term settings and repeated visits, learning the language, and making the findings available to the participants, among others. As these guidelines point out, spending a length of time in context is critical particularly as there are levers of power that need to be moved in order to listen to the stories of the people. I find these guidelines as helpful during my studies, particularly with Indigenous communities, as I am an outsider and I seek to conduct research that is meaningful not only to the academy but also to the people with whom I work.

In a new masters program called Conservation and Biodiversity, students have 2 years of courses taught by professors from Australia, United Kingdom, or the United States, and then a year writing a research-based thesis. The courses are 2 to 3-week intensive seminars wherein the professors come to Phnom Penh and lecture for a given period and then give assignments to the students to be completed over the next month. The rest of the work is done by correspondence over email.

What Is the Researcher Doing?

When I returned to Cambodia, I began with direct observations of the school and the classrooms; I spoke with the gatekeepers of the schools so that I would have access to the teachers; I spoke with the teachers so I could understand how their lives and beliefs influenced the students; I spoke to the students so that I could document their knowledge, strengths, struggles, and survivance. In this way, not only their stories of struggles and strength were shared, but they continued to survive on through their stories.

In Cambodia, Indigenous knowledge and Western modern knowledge are intimately linked. The students at RUPP are using mass spectrometers from Russia that are often malfunctioning because the dust from the roads clogs the sensitive sensors. The laboratories look like the majority of laboratories across the world, with the exception of the materials the tables are made with. Instead of black, smooth, laminate lab tables, they are made of white tiles that are easily found in any market in Phnom Penh. The stockrooms poorly organized, a trait common in most laboratories, and are full of glassware-pipettes, flasks, and graduated cylinders; most of them have never been used, which again is something I found to be true of the storage rooms in the American schools in which I taught.

What Informed Questions Did the Researcher Ask?

It began with a simple question that, out of context, might appear superfluous to understanding the research question of the relationship between Indigenous knowledge and Western modern science. I asked, "After the professors leave Cambodia, you just email to them your assignment?" This question may not have been an obvious one to someone who had not spent time in this country. On the surface, the signs boasting "Free Wifi" are on almost every café now. However, my experience told me that this is still a new technology to this country and while, yes, the internet is free in some cafes, it requires a drink and food costing a minimum of US$5, the equivalent of a few days work for these students. After asking this question about procedures with emailing assignments, I learned about the struggles the students are facing. Email access, though widespread, is still very slow and expensive. The frequent power outages make checking your email an hour-long process. If the professors do not respond, many students have to wait weeks before being able to check their email again for fear of wasting both time and money. Vichae also points to another problem that I had not experienced. Their professors are field conservationists and biologist and, therefore, spend a large portion of their time out in the field, away from email and internet connectivity. He states, "The teacher out from the Internet, working in the field, he spends half month in the field so it can complicate life." This starts a dialogue between the students in which I am no longer asking the questions but listening to the conversation. They discuss the hours they spend attempting to download the files that they are required to read and how expensive it is. They commiserate when a power failure disrupts their work or when a professor does not respond when he states he will. Som states:

> I think it's okay but it can be expensive and slow, so if I check my email and there is nothing then I have to wait weeks before I can afford to check again. Too slow. Too expensive. And if there is a message, many times I cannot respond, takes too long and there is a power failure. Gone.

Then the students began describing the difficulties with language beyond email. As the professors travel from different English-speaking countries, the United Kingdom, Australia, and the United States, they bring with them a different way of speaking English. Khey describes this challenge and the need to adapt quickly, "For me I can adapt but it's not fastly. It's not quickly. It's not quickly because when I study, I study in this language sometimes. I tests that are in different sometimes, foreign, so I tend to listen to the pronunciation of my teacher so when I study here I tend to adapt but not quickly. I hear them and it is different on the test." Had I not asked the question about emailing documents, I might not have revealed this issue on English dialects and the trouble Khey is having with the assessments. In this way, the decolonizing methodology of asking questions based on context revealed an issue on discourse.

What Is Important to Science?

Ultimately, my task as a science educator is to demonstrate my research is important to science. Throughout my research, there is a focus on language. In this way, the tension between what is important to science and what is important to the students is highlighted. I did not focus on outcome measures of the amount of content these students learned in the program. I focused on issues of access to Western modern science. For me, I do not see a disconnect between the struggles that students face while learning either science or language. These students cannot become scientists unless we have these conversations about access.

The question of whether or not Western modern science should be taught is a difficult one. To the students it is equivalent to asking whether or not to succeed. They know their people have a way of knowing that is different to Western modern science, but it has been devalued. Another effect of postcolonialism on science education is curriculum development, which is highly influenced by Western countries. As explorers and settlers attempted to "modernize, develop, instruct, and civilize the natives they found" (McKinley, 2007, p. 202), colonizers brought with them books, curricula, and wildlife with the intentions of "helping" the Indigenous people and to make their new home more comfortable (Crosby, 2004). Countries who want to "participate" in a global world are forced to learn Western modern science that follows a curriculum that is based on either European or North American models of education. Here in Phnom Penh, however, it sits in the heart of the Kirirom Rainforest; however, the majority of Year 11 Biology curriculum focused mostly on deciduous and desert biomes, neither of which is present anywhere in the country (MoYES website). However, there is hope in this masters program. The students have the intention of remaining in Cambodia to help conserve the environment and the

knowledge. Although they are trained in Western modern science, first they are Cambodian survivors and they still hold their Cambodian knowledge. The challenge now is to see how these students connect their knowledge with the Western modern science.

Conclusion: Educational Contribution

Through these vignettes we illuminated our *practice* of research principles and standards other scholars have expressed for conducting meaningful decolonizing research with Indigenous communities across the globe. In this section, we summarize the actions of decolonizing research that were present cross-culturally, in each context. Examples of common actions in the projects, that is, relinquishing control, reenvisioning knowledge, cultivating relationships, and purposeful representation of communities, are highlighted. Then, attention will be drawn to the principles and standards scholars have expressed as they connect to our research. The end of this section marks a return to the original goals we had for this scholarly discussion and mapping project as well as a discussion of future directions.

It is important to note that the context plays just as much a part in each of our studies as do the people, teachers, and students. Cassie made space for the students to articulate that, rather than the master's students' with their apparent deficits in learning, it is the Western professors who do not have a deep understanding of the Cambodian context to know that they are asking students to do something outside normal or available practice of the community (being able to access PDF files instead of finding an alternate route to provide access to academic material). Tarajean enacted building relationships with teachers to mark opportunities of acceptance of the researcher and the work. Accounting for time it takes to conduct research with Indigenous communities is an essential element of data collection. Valid data collection emerges from authentic relationships with Native teachers. Through openness to iterative data collection and flexibility in units of analyses, Nicole was able to illuminate the complex and important role maize production plays in the Rift Valley.

One collective struggle is dealing with *who* initiates the research; this defines our first decolonizing act. Must the research be initiated by the communities with whom we work? Is it only necessary for the research agenda to be set by the community? Yet, if we, as scholars, are not the ones initiating the work, would it happen? Most communities are simply too busy to put the scholarly work of empirical research at the forefront of their concerns. Compounding this reality is the sordid history of research in Indigenous communities. Therefore, we are uniquely positioned to offer ourselves to engage in desired projects. The way that we handled this struggle was what we believe is a

decolonizing act. In each of our contexts, we as researchers were also the initiators. However, also in all our contexts, the control over the research project eventually shifted to the Indigenous community with whom we worked. Each presented us with a path for the research that was not a part of our original intention, but we allowed the project to travel down that path. This occurred at several and varied points in the research process. In Tarajean's work, the very questions of investigation changed with the engagement of the Native teachers. Tarajean held up a mirror to them, they recognized their unique contribution, and then *they* raised questions. *They* wanted to know what "other Indians [are] doing to save their languages," and whether "other than Hawaiians who [is] doing language immersion?" These questions became what Tarajean and the teachers collaboratively sought to answer. Upon arrival in Eldoret, Kenya, Nicole noticed the prevalence of newspapers, and people reading them. Nowhere in Nicole's research plan were analyses of newspaper articles present, yet she realized that for the investigation to reflect what is important to people in Eldoret, newspapers needed to be added as a unit of analysis to understand the connections people make to their place, the Rift Valley. The students Cassie interviewed in Phnom Penh, Cambodia, redirected the topics of discussion. Rather than using interviewing techniques we all learn as qualitative researchers, to draw the students back to her own research agenda she allowed them the space to talk about the challenges of higher education they faced in Cambodia.

Attempting decolonizing research requires that knowledge be viewed differently. In each of our projects, it is clear in the communication of the project that throughout them cultural knowledge is valued, and in some cases, privileged. In Nicole's project, even more important than understanding the Western science content knowledge present in Kenyan science curriculum and science teachers' talk was to understand where traditional local science knowledge was present. Cassie primary goal in her education research project in Cambodia was to chronicle and examine the process of translating a science text into Khmer. In maintaining this as her focus, she privileged Khmer language over other education projects that institute and examine English-language literacy programs. Similarly, Tarajean's education research project sought to chronicle six Native teachers' enactment of a Native-language immersion program. Also, her valuing and conceptualization of cultural knowledge was abundant even in smaller interactions with the teachers throughout the research. For example, she recognized it was important that the project and the other teachers respect and value the Indigenous teacher-elder in a way that would encourage her participation.

A third decolonizing trait visible in each of our education research projects was the purposefulness with which each of us strove to represent the communities with whom we worked. In similar, yet distinct, ways each of us paid close attention to how we wrote about the work we did. The Cambodian environmental science students Cassie interviewed chose to discuss the major challenges they faced. Rather than write about this situation critically, Cassie highlighted how the students adapted to this situation, which put their strengths at front and center. Tarajean inverted traditional conceptions of what makes a "successful" teacher-as-learner. She fostered a place for the teachers to work together, which is characterized as success. As Nicole study was a study of place, as with many other underresourced communities, it might have been easy to emphasize the deficits of the Rift Valley region. Yet, in reading her description of the Rift Valley, its diversity, richness, and complexity are the prominent characterizations.

As Wilson writes, ". . . Indigenous researchers have often had to explain how their perspective is different from that of dominant system scholars," and they ". . . have met that task" (p. 55). Scholarship of Indigenous researchers provides us ample articulation of the principles and standards to operate from in our work. Many of these principles and standards overlap in three overarching themes, which, we believe, are connected to what we have called our acts of decolonizing research. These three themes are: true and equal collaborations in research/community projects, personal development on the part of the researcher(s) to learn the language(s)/culture(s) and concerns of the community, and interrogation of researcher privilege (Mutua & Swadener, 2004; Smith, 1999; Wilson, 2008). As Mutua and Swadener wrote, ". . . decolonizing research is a messy, complex, and perhaps impossible endeavor" (p. 7). That each of our acts we highlighted demonstrates more than one of the overarching recommended principles is evidence of their complexity and messiness. For example, the students in Cambodia who took control over the topics of discussion in interviews with Cassie both demonstrates research that is responsive to community concerns and collaboration with the community. When Nicole adopted newspapers as a unit of analysis in Kenya, she investigated her assumption that print resources may not be such an important form of communication because of the strong oral traditions there. As well, she remained open to learning what is important in the community of Eldoret because of the relative lack of relevance of print newspapers in contemporary United States. Through Tarajean and the Native teachers' conversations of what makes a successful teacher of language immersion, a collaborative project was born, and their representation of that process was purposeful in highlighting the emergent partnership.

According to Wilson (2008), a research paradigm is made up of four entities: ontology, epistemology, axiology, and methodology. "But rather than thinking of them as four separate ideas or entities, try to think of them in a circle" (p. 70). Methodological tools, philosophical approach, and purpose are inseparable in our work. Our desire in documenting our

projects was to show their inseparability and to show examples of decolonizing methodologies enacted—however imperfect the research actions may seem along the way. The three acts we presented, relinquishing control, reenvisioning knowledge, and purposeful representation of communities, were present cross-culturally in each of our educational research projects, and ones that we believe could be used more widely.

The investigation into our own research acts using a decolonized analytical frame provided us the opportunity to test our theory about the usability of decolonized methodologies in educational research in cross-cultural contexts. We began our inquiry with questions such as what is a decolonized methodology? What research acts count as forms of decolonized methodologies? Can anyone engage in conducting research employing a decolonized methodology? What research acts are required to be decolonized? We did not reach a full conclusion in response to our questions, but we did find, through our analysis, moments in which our research movements can be improved and empowering to those with whom we work. We were successful in analyzing critical events in our research acts, searching for opportunities to reframe our thinking about conducting research in cross-cultural contexts. None of our research projects began as decolonizing projects; however, we all have set new standards for and commitments to our research endeavors, purposes, and collaborations. The discourse about decolonized methodologies is an exciting scholarly space in which theory and practice of research can be critically examined. Our discoveries present us with opportunities to engage in the revitalization of knowledge and power within Indigenous communities. In time, we hope our initial reflections and analysis will encourage additional affirmation of scholarship that engages cross-cultural communities in the production of research knowledge. We call for more educational researchers doing decolonizing research to document and publish their acts so that more illustrative examples can be examined, perhaps through meta-analyses. The nature of enacted decolonizing research requires more careful articulation in cross-cultural contexts. In order to enact decolonized methodologies in cross-cultural educational communities, our research discourse must engage and examine the conceptions of *colonized* research purposes, tools of data collection, and analytical frames shaping research movements. The research discourse on methodology turns inward; examination of the researcher is in order.

Declaration of Conflicting Interests

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Bios

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